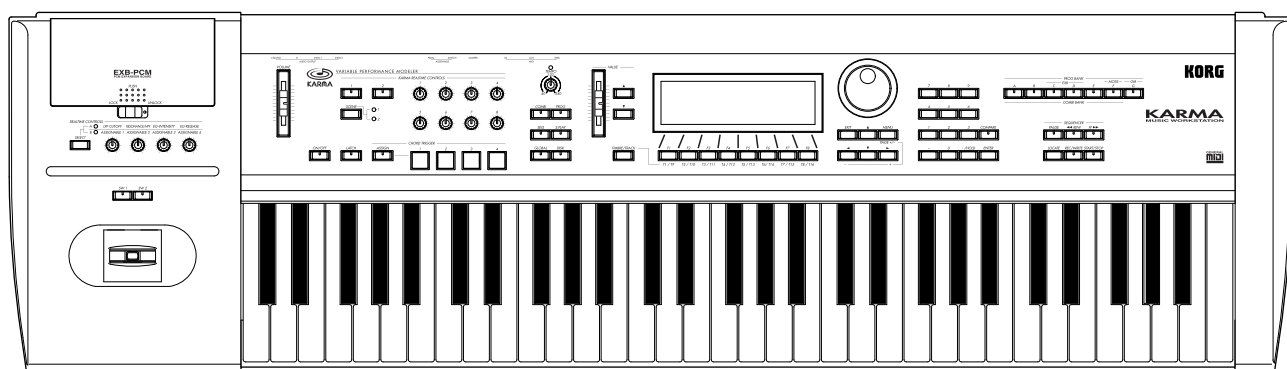


KARMA

MUSIC WORKSTATION

Parameter Guide



KORG

About this manual

This “Parameter Guide” contains explanations and other information regarding the operations of the parameters and settings on this instrument. The explanations are organized by mode, page, and tab. Explanations and other information on the effects and their parameters are also provided for each effect.

Refer to this guide when an unfamiliar parameter appears in the display, or when you need to know more about a particular function.

Conventions in this manual

Abbreviations for the manuals **BG, PG, GE, VNL**

References to the manuals included with the KARMA are abbreviated as follows.

BG: Basic Guide
PG: Parameter Guide
GE: KARMA GE Guide
VNL: Voice Name List

Switches and knobs []

References to the keys, dials, and knobs on the KARMA’s panel are enclosed in square brackets [].

Parameters in the LCD display screen “ ”

Parameters displayed in the LCD screen are enclosed in double quotation marks “ ”.

Boldface type

Parameter values are printed in boldface type. Content that is of particular importance is also printed in boldface type.

Procedure steps ① ② ③ ...

Steps in a procedure are listed as ① ② ③ ...

☞ p.■, ☞ BG p.■, ☞ GE p.■, ☞ ■.■ – ■

From the left, these symbols indicate a reference page in the Parameter Guide, a reference page in the Basic Guide, a reference to the GE Guide, and a parameter number.

Symbols , , , , ,

These symbols respectively indicate cautions, advice, MIDI-related explanations, a parameter that can be selected as an alternate modulation source, a parameter that can be selected as a dynamic modulation source, and a parameter that can use the BPM/MIDI Sync function.

Example screen displays

The values of the parameters shown in the example screens of this manual are only for explanatory purposes, and may not necessary match the values that appear in the LCD screen of your instrument.

MIDI-related explanations

CC# is an abbreviation for Control Change Number.

In explanations of MIDI messages, **numbers in square brackets []** always indicate hexadecimal numbers.

How to read the “Parameter Guide”

(example)

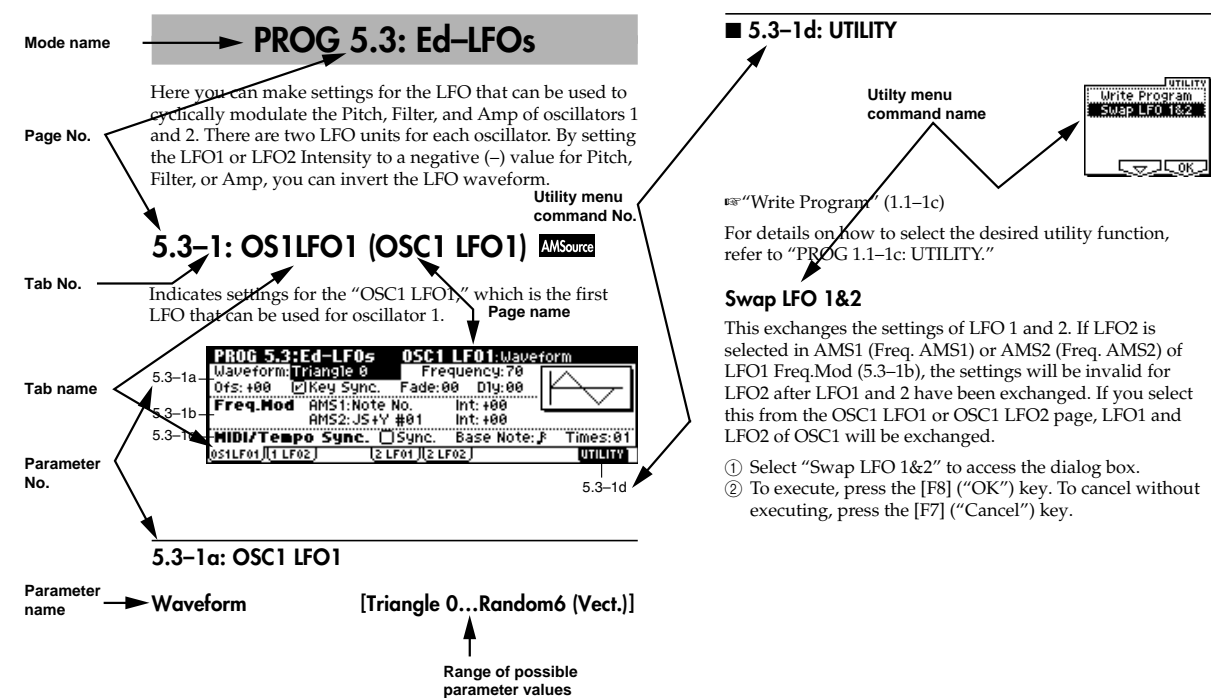


Table of Contents

1. Program mode	1
PROG PAGE MENU	1
PROG 1.1: Play	2
1.1-1: Program	2
1.1-2: P.Edit (Performance Editor)	3
1.1-3: KARMA	5
1.1-4: K.RTC (KARMA RTC)	6
1.1-5: Note (Note Activity)	6
PROG 2.1: Ed-Basic	7
2.1-1: Basic (Prog Basic)	7
2.1-2: OSC1	8
2.1-3: OSC2	10
2.1-4: V.Zone (Velocity Zone)	10
PROG 2.2: Ed-Ctrl.	10
2.2-1: Ctrls (Controls)	10
PROG 2.3: Ed-OSC	11
PROG 3.1: Ed-Pitch	11
3.1-1: OSC1	11
3.1-2: OS1lfo (OSC1 LFO)	12
3.1-3: OSC2	13
3.1-4: OS2lfo (OSC2 LFO)	13
3.1-5: EG (Pitch EG) AMSource	13
PROG 4.1: Ed-Filter1	15
4.1-1: Basic	15
4.1-2: Mod.1 (Filter1 Modulation1)	16
4.1-3: Mod.2 (Filter1 Modulation2)	17
4.1-4: lfoMod (LFO Modulation)	17
4.1-5: EG (Filter1 EG) AMSource	18
PROG 4.2: Ed-Filter2	20
4.2-1: Basic	20
4.2-2: Mod.1 (Filter2 Modulation1)	20
4.2-3: Mod.2 (Filter2 Modulation2)	20
4.2-4: lfoMod (LFO Modulation)	20
4.2-5: EG (Filter2 EG) AMSource	20
PROG 5.1: Ed-Amp1	20
5.1-1: Lvl/Pan (Level/Pan)	20
5.1-2: Mod. (Amp1 Modulation)	20
5.1-3: EG (Amp1 EG) AMSource	22
PROG 5.1: Ed-Amp	23
PROG 5.2: Ed-Amp2	23
5.2-1: Lvl/Pan (Level/Pan)	23
5.2-2: Mod. (Amp2 Modulation)	23
5.2-3: EG (Amp2 EG) AMSource	23
PROG 5.2: Ed-EGs	23
PROG 5.3: Ed-LFOs	24
5.3-1: OS1LFO1 (OSC1 LFO1) AMSource	24
5.3-2: 1LFO2 (OSC1 LFO2)	25
5.3-3: 2LFO1 (OSC2 LFO1)	25
5.3-4: 2LFO2 (OSC2 LFO2)	25
PROG 6.1: Ed-KARMA	26
6.1-1: Setup	26
6.1-2: Key Z/T (KeyZ/Thru)	27
6.1-3: RxFltr (Receive Filter)	28
6.1-4: TxFltr (Transmit Filter)	28
PROG 6.2: Ed-KARMA Mdl	29
6.2-1: Parm1 (Parameter 1)	29
6.2-2: Parm2 (Parameter 2)	31
PROG 6.3: Ed-KARMA GE	32
6.3-1: GE P...4 (GE Parameter 1...4)	32
6.3-1: GE P...8 (GE Parameter 5...8)	32
6.3-1: GE P...12 (GE Parameter 9...12)	32
6.3-1: GE P...16 (GE Parameter 13...16)	32
PROG 6.4: Ed-KARMA RT	34
6.4-1: RTP ..4 (RT Parameter 1...4)	34
6.4-2: RTP ..8 (RT Parameter 5...8)	34
6.4-3: DynMIDI (Dynamic MIDI)	36
6.4-4: Name1	36
6.4-5: Name2	36
PROG 7.1: Ed-BUS	37
7.1-1: BUS	37
7.1-2: Route (Routing)	38
PROG 7.2: Ed-InsertFX	38
7.2-1: Setup	38
7.2-2: IFX 1 (Insert Effect1)	39
7.2-3: IFX 2 (Insert Effect2)	39
7.2-4: IFX 3 (Insert Effect3)	39
7.2-5: IFX 4 (Insert Effect4)	39
7.2-6: IFX 5 (Insert Effect5)	39
7.2-7: Routing (Routing)	40
PROG 7.3: Ed-MasterFX	40
7.3-1: Setup	40
7.3-2: MFX 1 (Master Effect1)	41
7.3-3: MFX 2 (Master Effect2)	41
7.3-4: MEQ (Master EQ)	41

2. Combination mode	43	COMBI 6.1: Ed-KARMA	57
COMBI PAGE MENU	43	6.1-1: Setup	57
COMBI 1.1: Play	43	6.1-2: MIDI I/O	58
1.1-1: Combi (Combination)	43	6.1-3: Key Z (KeyZone)	59
1.1-2: Prog (Timbre Program)	45	6.1-4: Key T (Key Thru)	60
1.1-3: Mix (Mixer)	46	6.1-5: RxFiltr (Receive Filter)	60
1.1-4: KARMA	47	6.1-6: TxFiltr (Transmit Filter)	60
1.1-5: K.RTC (KARMA RTC)	48	COMBI: 6.2 Ed-KARMA Mdl.	61
1.1-6: Note (Note Activity)	48	6.2-1: Parm1 (Parameter 1)	61
COMBI 2.1: Ed-Prog/Mixer	48	6.2-2: Parm2 (Parameter 2)	61
2.1-1: Prog (Timbre Program)	48	COMBI 6.3: Ed-KARMA GE	62
2.1-2: Mix (Mixer)	48	6.3-1: GE P..4 (GE Parameter 1...4)	62
COMBI 2.2: Ed-Ctrl	49	6.3-2: GE P..8 (GE Parameter 5...8)	62
2.2-1: Ctrls (Controls)	49	6.3-3: GE P..12 (GE Parameter 9...2)	62
COMBI 2.3: Ed-MOSS	49	6.3-4: GE P..16 (GE Parameter 13...16)	62
COMBI 3.1: Ed-Param1	49	COMBI 6.4: Ed-KARMA RT	63
3.1-1: MIDI	49	6.4-1: RTP ..4 (RT Parameter 1...4)	63
3.1-2: OSC	50	6.4-2: RTP ..8 (RT Parameter 5...8)	63
3.1-3: Pitch	50	6.4-3: DynMIDI (Dynamic MIDI)	63
COMBI 3.2: Ed-Param2	51	6.4-4: Name1	64
3.2-1: KARMA	51	6.4-5: Name2	64
3.2-2: Other	52	6.4-6: Rndm1 (Random 1)	64
COMBI 3.3: Ed-Key Zone	52	6.4-7: Rndm2 (Random 2)	64
3.3-1: Key (Key Zone)	52	COMBI 7.1: Ed-BUS	65
3.3-2: Slope (Key Slope)	53	7.1-1: BUS (BUS T01...08)	65
3.3-3: Review	53	7.1-2: Route (Routing)	66
COMBI 3.4: Ed-Vel Zone (Velocity Zone)	53	COMBI 7.2: Ed-InsertFX	66
3.4-1: Vel (Velocity Zone)	53	7.2-1: Setup	66
3.4-2: Slope (Velocity Slope)	54	7.2-2: IFX 1 (Insert Effect1)	67
3.4-3: Review	54	7.2-3: IFX 2 (Insert Effect2)	67
COMBI 4.1: Ed-MIDI Filter1	54	7.2-4: IFX 3 (Insert Effect3)	67
4.1-1: MIDI 1-1 (MIDI Filter 1-1)	54	7.2-5: IFX 4 (Insert Effect4)	67
4.1-2: MIDI 1-2 (MIDI Filter 1-2)	55	7.2-6: IFX 5 (Insert Effect5)	67
COMBI 4.2: Ed-MIDI Filter2	55	7.2-7: Route (Routing)	67
4.2-1: MIDI 2-1 (MIDI Filter 2-1)	55	COMBI 7.3: Ed-MasterFX	67
4.2-2: MIDI 2-2 (MIDI Filter 2-2)	55	7.3-1: Setup	67
COMBI 4.3: Ed-MIDI Filter3	55	7.3-2: MFX1 (Master Effect1)	68
4.3-1: MIDI 3-1 (MIDI Filter 3-1)	55	7.3-3: MFX2 (Master Effect2)	68
4.3-2: MIDI 3-2 (MIDI Filter 3-2)	55	7.3-4: MEQ (Master EQ)	68
COMBI 4.4: Ed-MIDI Filter4	56		
4.4-1: MIDI 4-1 (MIDI Filter 4-1)	56		
4.4-2: MIDI 4-2 (MIDI Filter 4-2)	56		

3. Sequencer mode	69	SEQ 4.1: MIDI Filter1	87
SEQ PAGE MENU	69	4.1-1: M1-1..8 (MIDI Filter1-1 T01...08)	87
SEQ 1.1: Play/REC	69	4.1-2: 1-1..16 (MIDI Filter1-1 T09...16)	87
1.1-1: Play.REC (Play/REC)	69	4.1-3: 1-2..8 (MIDI Filter1-2 T01...08)	88
1.1-2: Prog...8 (Program T01...08)	74	4.1-4: 1-2..16 (MIDI Filter1-2 T09...16)	88
1.1-3: Prog...16 (Program T09...16)	74	SEQ 4.2: MIDI Filter2	88
1.1-4: Mix..8 (Mixer T01...08)	75	4.2-1: M2-1..8 (MIDI Filter2-1 T01...08)	88
1.1-5: Mix..16 (Mixer T09...16)	75	4.2-2: 2-1..16 (MIDI Filter2-1 T09...16)	88
1.1-6: Pref. (Preference)	75	4.2-3: 2-2..8 (MIDI Filter2-2 T01...08)	88
1.1-7: K.RTC (KARMA RTC)	77	4.2-4: 2-2..16 (MIDI Filter2-2 T09...16)	88
SEQ 1.2: Loop	77	SEQ 4.3: MIDI Filter3	89
1.2-1: Loop...8 (Track Play Loop T01...08)	77	4.3-1: M3-1..8 (MIDI Filter3-1 T01...08)	89
1.2-2: Loop...16 (Track Play Loop T09...16)	77	4.3-2: 3-1..16 (MIDI Filter3-1 T09...16)	89
SEQ 2.1: Cue List	78	4.3-3: 3-2..8 (MIDI Filter3-2 T01...08)	89
2.1-1: Cue List	78	4.3-4: 3-2..16 (MIDI Filter3-2 T09...16)	89
SEQ 2.2: Controller	81	SEQ 4.4: MIDI Filter4	89
2.2-1: Ctrls (Controls)	81	4.4-1: M4-1..8 (MIDI Filter4-1 T01...08)	89
SEQ 2.3: MOSS	82	4.4-2: 4-2..16 (MIDI Filter4-1 T09...16)	89
SEQ 3.1: Param1	82	4.4-3: 4-2..8 (MIDI Filter4-2 T01...08)	90
3.1-1: MIDI...8 (MIDI T01...08)	82	4.4-4: 4-2..16 (MIDI Filter4-2 T09...16)	90
3.1-2: MIDI...16 (MIDI T09...16)	82	SEQ 5.1: RPPR	90
3.1-3: OSC..8 (OSC T01...08)	83	5.1-1: Pattern	90
3.1-4: OSC..16 (OSC T09...16)	83	5.1-2: RPPR Setup	93
3.1-5: Ptch..8 (Pitch T01...08)	83	SEQ 5.2: Track Edit	95
3.1-6: Ptch..16 (Pitch T09...16)	83	5.2-1: Track Edit	95
SEQ 3.2: Param2	84	SEQ 6.1: KARMA	103
3.2-1: KRM..8 (KARMA T01...08)	84	6.1-1: Setup	103
3.2-2: KRM..16 (KARMA T09...16)	84	6.1-2: MIDI I/O	104
3.2-3: Othr..8 (Other T01...08)	85	6.1-3: KeyZ (Key Zone)	106
3.2-4: Othr..16 (Other T09...16)	85	6.1-4: Key T (KeyThru)	106
SEQ 3.3: Key Zone	85	6.1-5: RxFiltr (Receive Filter)	107
3.3-1: Key..8 (Key T01...08)	85	6.1-6: TxFiltr (Transmit Filter)	107
3.3-2: Key..16 (Key T09...16)	85	6.1-7: Note (Note Activity)	107
3.3-3: Slp..8 (Slope T01...08)	86	SEQ 6.2: KARMA Mdl.	108
3.3-4: Slp..16 (Slope T09...16)	86	6.2-1: Parm1 (Parameter 1)	108
3.3-5: Review	86	6.2-2: Parm2 (Parameter 2)	108
SEQ 3.4: Vel Zone	86	SEQ 6.3: KARMA GE	109
3.4-1: Vel..8 (Vel T01...08)	86	6.3-1: GE P..4 (GE Parameter 1...4)	109
3.4-2: Vel..16 (Vel T09...16)	86	6.3-2: GE P..8 (GE Parameter 5...8)	109
3.4-3: Slp..8 (Slope T01...08)	87	6.3-3: GE P..12 (GE Parameter 9...12)	109
3.4-4: Slp..16 (Slope T09...16)	87	6.3-4: GE P..16 (GE Parameter 13...16)	109
3.4-5: Review	87		

SEQ 6.4: KARMA RT	110	S.PLAY 4.1: Select Directory	121
6.4-1: RTP..4 (RT Parameter 1...4)	110	4.1-1: Select Directory	121
6.4-2: RTP..8 (RT Parameter 5...8)	110	S.PLAY 4.2: Jukebox	121
6.4-3: DynMIDI (Dynamic MIDI)	110	4.2-1: Jukebox	121
6.4-4: Name1	110	S.PLAY 6.1: KARMA	122
6.4-5: Name2	110	6.1-1: Setup	122
6.4-6: Rndm1 (Random 1)	111	6.1-2: MIDI I/O	123
6.4-7: Rndm2 (Random 2)	111	6.1-3: Key Z (KeyZone)	124
SEQ 7.1: BUS	111	6.1-4: Key T (Key Thru)	125
7.1-1: BUS..8 (BUS T01...08)	111	6.1-5: RxFiltr (Receive Filter)	125
7.1-2: BUS..16 (BUS T09...16)	111	6.1-6: TxFiltr (Transmit Filter)	125
7.1-3: Route (Routing)	112	6.1-7: Note Activity	125
SEQ 7.2: Insert FX	112	S.PLAY 6.2: KARMA Mdl	126
7.2-1: Setup	112	6.2-1: Parm1 (Parameter 1)	126
7.2-2: IFX1 (Insert Effect1)	113	6.2-2: Parm2 (Parameter 2)	126
7.2-3: IFX2 (Insert Effect2)	113	S.PLAY 6.3: KARMA GE	127
7.2-4: IFX3 (Insert Effect3)	113	6.3-1: GE P..4 (GE Parameter 1...4)	127
7.2-5: IFX4 (Insert Effect4)	113	6.3-2: GE P..8 (GE Parameter 5...8)	127
7.2-6: IFX5 (Insert Effect5)	113	6.3-3: GE P..12 (GE Parameter 9...12)	127
7.2-7: Route (Routing)	113	6.3-4: GE P..16 (GE Parameter 13...16)	127
SEQ 7.3: Master FX	113	S.PLAY 6.4: KARMA RT	128
7.3-1: Setup	113	6.4-1: RTP..4 (RT Parameter 1...4)	128
7.3-2: MFX1 (Master Effect1)	114	6.4-2: RTP..8 (RT Parameter 5...8)	128
7.3-3: MFX2 (Master Effect2)	114	6.4-3: DynMIDI (Dynamic MIDI)	128
7.3-4: Master EQ (Master EQ)	114	6.4-4: Name1	128
4. Song Play mode	115	6.4-5: Name2	128
S.PLAY PAGE MENU	115	6.4-6: Rndm1 (Random 1)	129
S.PLAY 1.1: Play	115	6.4-7: Rndm2 (Random 2)	129
1.1-1: Play	115	S.PLAY 7.1: BUS	129
1.1-2: Prog..8 (Program T01...08)	117	7.1-1: BUS..8 (BUS T01...08)	129
1.1-3: Prog..16 (Program T09...16)	117	7.1-2: BUS..16 (BUS T09...16)	129
1.1-4: Mix..8 (Mixer T01...08)	117	7.1-3: Route (Routing)	130
1.1-5: Mix..16 (Mixer T09...16)	117	S.PLAY 7.2: Insert FX	130
1.1-6: Preference	118	7.2-1: Setup	130
1.1-7: K.RTC (KARMA RTC)	118	7.2-2: IFX1 (Insert Effect1)	131
S.PLAY 2.2: Controller	119	7.2-3: IFX2 (Insert Effect2)	131
2.2-1: CtrlS (Controls)	119	7.2-4: IFX3 (Insert Effect3)	131
S.PLAY 2.3: MOSS	119	7.2-5: IFX4 (Insert Effect4)	131
2.3-1: MOS..8 (MOSS T01...08)	119	7.2-6: IFX5 (Insert Effect5)	131
2.3-2: MOS..16 (MOSS T09...16)	119	7.2-7: Route (Routing)	131
S.PLAY 3.1: Param	120	S.PLAY 7.3: Master FX	131
3.1-1: Param..8 (Status/Scale T01...08)	120	7.3-1: Setup	131
3.1-2: Prm..16 (Status/Scale T09...16)	120	7.3-2: MFX1 (Master Effect1)	132
3.1-3: KRM..8 (KARMA T01...08)	120	7.3-3: MFX2 (Master Effect2)	132
3.1-4: KRM..16 (KARMA T09...16)	120	7.3-4: MEQ (Master EQ)	132

5. Global mode	133	Master Effects (MFX1, 2)	163
GLOBAL PAGE MENU	133	1. In/Out	163
GLOBAL 1.1: System	133	2. Routing	164
1.1-1: Basic	133	3. Mixer	165
1.1-2: Pref. (System Preference)	136	4. Controlling the Master Effects via MIDI	166
GLOBAL 2.1: MIDI	137	Master EQ	166
2.1-1: MIDI	137	Individual Outputs	166
GLOBAL 3.1: User Scale	140	Filter/Dynamic	168
3.1-1: Octave	140	000: No Effect	168
3.1-2: All Notes	141	001: St.Amp Sim (Stereo Amp Simulation)	168
GLOBAL 4.1: Category Name	141	002: St.Compressor (Stereo Compressor)	168
4.1-1: P.0..7 (Prog.00...07)	141	003: St.Limiter (Stereo Limiter)	168
4.1-2: P.8..15 (Prog.08...15)	141	004: Mltband Limit (Multiband Limiter)	169
4.1-3: C.0..7 (Comb.00...07)	141	005: St.Gate (Stereo Gate)	170
4.1-4: C.8..15 (Comb.08...15)	141	006: OD/HiGain Wah (Overdrive/Hi.Gain Wah)	170
GLOBAL 5.1: DKit (Drum Kit)	142	007: St.Para.4EQ (Stereo Parametric 4-Band EQ)	171
5.1-1: High (High Sample)	142	008: St.Graphic7EQ (Stereo Graphic 7-Band EQ)	172
5.1-2: Low (Low Sample)	144	009: St.Wah/AutoW (Stereo Wah/Auto Wah)	172
5.1-3: Voice (Voice/Mixer)	144	010: St.Random Filter (Stereo Random Filter)	173
GLOBAL 6.1: Controller	145	011: St.Exct/Enhcr (Stereo Exciter/Enhancer)	174
6.1-1: Foot	145	012: St.Sub OSC (Stereo Sub Oscillator)	174
6.1-2: KARMA1	146	013: Talking Mod (Talking Modulator)	175
6.1-3: KARMA2	146	014: St.Decimator (Stereo Decimator)	176
GLOBAL 6.1: Controller	145	015: St.AnalogRecd (Stereo Analog Record)	176
6. Disk mode	149	Pitch/Phase Mod.	177
DISK PAGE MENU	150	016: St.Chorus (Stereo Chorus)	177
1.1-1: Load	150	017: St.HarmonicCho (Stereo Harmonic Chorus)	177
1.1-2: Save	153	018: MltTap ChoDly (Multitap Chorus/Delay)	178
1.1-3: Utility	155	019: Ensemble	178
1.1-4: Media Information	157	020: St.Flanger (Stereo Flanger)	179
7. Effect Guide	159	021: St.Rndm Flang (Stereo Random Flanger)	179
Overview	159	022: St.Env.Flanger (Stereo Envelope Flanger)	180
1. Effects in each mode	159	023: St.Phaser (Stereo Phaser)	180
2. Dynamic modulation (Dmod)	159	024: St.Rndm Phasr (Stereo Random Phaser)	181
3. Effect I/O	159	025: St.Env.Phaser (Stereo Envelope Phaser)	181
Insert Effects (IFX 1, 2, 3, 4, 5)	160	026: St.BiphaseMod (Stereo Biphase Modulation)	182
1. In/Out	160	027: St.Vibrato (Stereo Vibrato)	182
2. Routing	160	028: St.AutoFd Mod (Stereo Auto Fade Modulation)	183
3. Mixer	162	029: 2Voice Reso (2Voice Resonator)	183
4. Controlling the Insert Effects via MIDI	163	030: Doppler	184
		031: Scratch	185

Mod./P.Shift 186

032: St.Tremolo (Stereo Tremolo)	186
033: St.Env. Tremlo (Stereo Envelope Tremolo)	186
034: St.Auto Pan (Stereo Auto Pan)	187
035: St.Phasr+Trml (Stereo Phaser + Tremolo)	187
036: St.Ring Mod (Stereo Ring Modulator)	188
037: Detune	189
038: Pitch Shifter	189
039: PitchShft Mod (Pitch Shift Modulation)	190
040: Rotary SP (Rotary Speaker)	190

ER/Delay 191

041: Early Reflect (Early Reflections)	191
042: Auto Reverse	192
043: LCR Delay (L/C/R Delay)	192
044: St/Cross Dly (Stereo/Cross Delay)	193
045: St.MltTap Dly (Stereo Multitap Delay)	193
046: St.Mod. Delay (Stereo Modulation Delay)	194
047: St.DynamicDly (Stereo Dynamic Delay)	194
048: St.AutoPanDly (Stereo Auto Panning Delay)	195
049: LCR BPM Delay (L/C/R BPM Delay)	195
050: St.BPM Delay (Stereo BPM Delay)	196
051: Sequence Dly (Sequence Delay)	196

Reverb 197

052: Rev Hall (Reverb Hall)	197
053: Rev SmoothHall (Reverb Smooth Hall)	197
054: Rev Wet Plate (Reverb Wet Plate)	197
055: Rev Dry Plate (Reverb Dry Plate)	197
056: Rev Room (Reverb Room)	198
057: Rev BrightRoom (Reverb Bright Room)	198

Mono → Mono Chain 199

058: P4EQ–Exciter (Parametric 4-Band EQ – Exciter)	199
059: P4EQ–Wah (Parametric 4-Band EQ – Wah/Auto Wah)	199
060: P4EQ–Cho/FI (Parametric 4-Band EQ – Chorus/Flanger)	200
061: P4EQ–Phaser (Parametric 4-Band EQ – Phaser)	200
062: P4EQ–M.Dly (Parametric 4-Band EQ – Multitap Delay)	201
063: Comp–Wah(Compressor – Wah/Auto Wah)	201
064: Comp–AmpSim (Compressor – Amp Simulation)	202
065: Comp–OD/HG (Compressor – Overdrive/Hi.Gain)	202
066: Comp–P4EQ (Compressor – Parametric 4-Band EQ)	202
067: Comp–Cho/FI (Compressor – Chorus/Flanger)	203
068: Comp–Phaser (Compressor – Phaser)	203
069: Comp–M.Dly (Compressor – Multitap Delay)	204
070: Limiter–P4EQ (Limiter – Parametric 4-Band EQ)	204

071: Limit–Cho/FI (Limiter – Chorus/Flanger)	205
072: Limit–Phaser	205
073: Limiter–M.Dly (Limiter – Multitap Delay)	206
074: Exct–Comp (Exciter – Compressor)	206
075: Exct–Limiter (Exciter Limiter)	206
076: Exct–Cho/FI (Exciter – Chorus/Flanger)	207
077: Exct–Phaser (Exciter – Phaser)	207
078: Exct–M.Dly (Exciter – Multitap Delay)	207
079: OD/HG–AmpSim (Overdrive/Hi.Gain – Amp Simulation)	208
080: OD/HG–Cho/FI (Overdrive/Hi.Gain – Chorus/Flanger)	208
081: OD/HG–Phaser (Overdrive/Hi.Gain – Phaser)	209
082: OD/HG–M.Dly (Overdrive/Hi.Gain – Multitap Delay)	209
083: Wah–AmpSim (Wah/Auto Wah – Amp Simulation)	210
084: Deci–AmpSim (Decimator – Amp Simulation)	210
085: Deci–Comp (Decimator – Compressor)	210
086: AmpSim–Trml (Amp Simulation – Tremolo)	211
087: Cho/FI–M.Dly (Chorus/Flanger – Multitap Delay)	211
088: Phasr–Cho/FI (Phaser – Chorus/Flanger)	212
089: Reverb–Gate	212

Double Size 213

090: Piano Body (Piano Body/Damper Simulation)	213
091: St.MltbandLmt (Stereo Multiband Limiter)	213
092: OD/HyprG Wah (Overdrive/Hyper Gain Wah)	213
093: Vocoder	214
094: MltTap ChoDly (Multitap Chorus/Delay)	215
095: St.Pitch Shift (Stereo Pitch Shifter)	215
096: Rotary SP OD (Rotary Speaker Overdrive)	216
097: Early Reflect(Early Reflections)	217
098: LCR Long Delay (L/C/R Long Delay)	217
099: St/Cross LDly (Stereo/Cross Long Delay)	217
100: LCR BPM LDly(L/C/R BPM Long Delay)	218
101: St.BPM LDelay (Stereo BPM Long Delay)	218
102: Hold Delay	219

Master EQ 220

Master EQ	220
---------------------	-----

8. Appendices 221

Alternate Modulation Source (AMS) 221

- About Alternate Modulation 221
- About Alternate Modulation Sources 221
- AMS (Alternate Modulation Source) List 222
- Alternate Modulation settings 224
- The effect of alternate modulation on various parameters, and example applications 224

Dynamic Modulation Source (Dmod) 227

- Dynamic Modulation Source List 227
- About the BPM/MIDI SYNC function 229

SW1/2 Assign 230

- SW1, SW2 Assign List 230

Knob 1...4 B Assign 231

- Realtime Control Knobs B Assign List 231

Foot Switch Assign 232

- Foot Switch Assign List 232

Foot Pedal Assign 233

- Foot Pedal Assign List 233

Dynamic MIDI Sources & Destinations 234

- Dynamic MIDI Sources 234
- Dynamic MIDI Destinations 235

MIDI transmission when this instrument's controllers are operated 240

This instrument operations when control changes are transmitted/received 242

MIDI applications 245

- About MIDI 245
- Connecting MIDI devices/computers (MIDI connectors) 245
- Messages transmitted and received by this instrument 246

Various messages 256

Data compatibility 260

MIDI IMPLEMENTATION 261

Option boards/memory 264

- About option boards 264
- Please note when installing an option board 264
- Checking after installation 265
- Installing an EXB-PCM 265
- Installing the EXB-MOSS 267

EXB-MOSS option 269

- Features of the EXB-MOSS 269
- The structure of a MOSS tone generator program 269
- About the oscillators 270
- Loading the preloaded data 270
- Selecting programs/combinations 272
- Editing a program 272
- Editing a combination 272
- Sequencer, Song Play mode 273
- Operation when transmitting/receiving control changes 273
- Parameters 275
- Cautions when using bank F 287
- Affix the Sondius-XG label 287
- Modulation Source List 287
- EXB-MOSS Parameter Index 288

Index 292

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1. Program mode

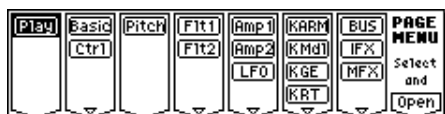
PROG PAGE MENU

Use the following procedure to select the desired page within the mode.

- ① Press the [MENU] key to access the “PAGE MENU.” The “PAGE MENU” will show an abbreviated name for each page.
- ② Use the [F1]–[F7] keys at the bottom of the page to select the desired page. Pressing the same key repeatedly will scroll through the various sub-pages. You can also move by using the cursor keys [▲], [◀], [▼], [▶].
- ③ Press the [F8] (“Open”) key to access the page.
- ④ If the selected page contains two or more tab pages, press the nearest [F1]–[F7] key below the tabs to select the desired page.

note Other ways to select a page

- You can also move to the desired page by holding down the [MENU] key and using numeric keys [0]–[9] to enter a two-digit page number. For example if you wish to access the 5.3: Ed-LFOs page, hold down the [MENU] key and consecutively press numeric keys [5] and then [3].
- By holding down the [MENU] key and using the cursor keys [◀](-) or [▶](+), you can step through the pages forward or backward in the order of 1.1→2.1→2.2→3.1, etc.



Play	1.1: Play	Select and play programs. Use the Performance Editor for easy editing, and to select KARMA GE. (☞p.2)
Basic	2.1: Ed-Basic	Set basic program parameters such as Oscillator and Multisample. (☞p.7)
Ctrl	2.2: Ed-Ctrl	Controller settings. (☞p.10)
OSC	2.3: Ed-OSC	This will be displayed when you select bank F if the optional EXB-MOSS is installed. OSC settings for the MOSS tone generator. (☞p.11)
Pitch	3.1: Ed-Pitch	Pitch settings. Pitch EG settings. (☞p.11)
Flt1	4.1: Ed-Filter1	Filter 1 (tone) settings. Filter EG settings. (☞p.15)
Flt2	4.2: Ed-Filter2	Filter 2 (tone) settings. Filter EG settings. (☞p.20)
Amp1	5.1: Ed-Amp1	Amp 1 and Amp 2 (volume) settings. Amp EG, pan (position) settings. (☞p.20)
Amp2	5.2: Ed-Amp2	
LFO	5.3: Ed-LFOs	Type and speed settings etc. for the two LFOs provided for each oscillator. (Make settings in the pitch, filter, and amp pages to specify the depth of the LFO settings you make here.) (☞p.24)
Amp	5.1: Ed-Amp	This will be displayed when you select bank F if the optional EXB-MOSS is installed. Amp (volume) settings. Amp EG, pan (position) settings. (☞p.23)
EG	5.2: Ed-EGs	
KARM	6.1: Ed-KARMA	KARMA GE selection, key zone parameters, MIDI filter settings. (☞p.26)
K Mdl	6.2: Ed-KARMA Mdl	Module parameter settings (transpose, pitch range of generated phrase, trigger etc.) (☞p.29)
K GE	6.3: Ed-KARMA GE	GE parameter settings and assignments to KARMA real-time controls (☞p.32)
K RT	6.4: Ed-KARMA RT	KARMA RT parameters, Dynamic MIDI settings. (☞p.34)
BUS	7.1: Ed-BUS	Select the BUS and master effect send level for the oscillator output. (☞p.37)
IFX	7.2: Ed-InsertFX	Insert Effect routing, selection and settings. (☞p.38)
MFX	7.3: Ed-MasterFX	Master Effect selection and settings. Master EQ settings. (☞p.40)

PROG 1.1: Play

In this display page you can select and play programs.

MIDI All MIDI data in PROG 1.1: Play is transmitted and received on the Global MIDI Channel (≡GLOBAL 2.1-1a).

1.1-1: Program



1.1-1a: Bank, Program Select, Category, Cat. Hold, 10's Hold, J(Tempo)

Bank [Bank A...F, G, g(1)...g(9), g(d)]

This is the program bank display.

Use the BANK [A]–[G] keys to select the bank.

Bank G will cycle as follows each time you press the BANK [G] key.

G→g(1)→g(2)→g(3)→g(4)→g(5)→g(6)→g(7)→g(8)→g(9)→g(d)→G

note Bank F can be selected if you have installed the separately sold EXB-MOSS option. When installed, the 128 special EXB-MOSS programs will be available.

The KARMA series provides rewritable banks **A**, **B**, **C**, **D**, and **E**, each containing 128 programs (total 640). As for non-rewritable program areas, it provides banks **G** (capital programs for GM2), banks **g(1)–g(9)** (variation programs), and bank **g(d)** (drums). (For a list of the factory-set programs, refer to the separate VNL.)

Bank A, B	for preloaded programs
Bank C, D	for user programs, and EXB-PCM series programs
Bank E	for preloaded programs
Bank F	for EXB-MOSS programs
Bank G	GM2 capital program
Bank g(1)...g(9)	GM2 variation programs*
Bank g(d)	GM2 drums program

* For banks with no variation sounds, the GM basic sounds will be recalled. (An * will be added at the beginning of the program name.)

Program Select

[A...F]0...127: name, [G...g(d)]1...128: name]

Selects a program.

Choose this parameter, and use the VALUE [▲], [▼] keys, numeric keys [0]–[9], and the [VALUE] dial to select a program.

You can select programs by category, or by using “10’s Hold.” (≡“Category,” “Cat. HOLD,” “10’s HOLD”)

MIDI You can transmit MIDI program changes from a connected external MIDI device, or use a foot switch to select programs. (≡p.145 “Foot SW Assign” (GLOBAL 6.1-1a), p.232 “Foot Switch Assign List”)

Category

[00...15: Name]

Selects the program category.

All programs are classified into one of sixteen categories.

You can select the desired category, and then choose programs from that category.

For the procedure of selecting programs from a category, refer to “Cat. HOLD” and “Select by Category.”

note To assign a category to each program, use the “Write Program” (1.1-1c) dialog box. To change the name of a category, use “Category Name Prog. 00–07, 08–15” (≡GLOBAL 4.1-1/2).

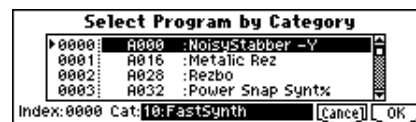
Cat. HOLD (Category Hold)

- Press the [./HOLD] key to display **Cat. HOLD**. The category will be held (fixed).
- Use “Category” to select the desired category.
- Choose “Program Select,” and use the VALUE [▲], [▼] keys or the [VALUE] dial to select programs sequentially within the specified category.
- To cancel, press the [./HOLD] key twice to turn off the **Cat. HOLD** display.

note If you press the [./HOLD] key in PROG 1.1: Play, the selection will cycle in the order of **Cat. HOLD** → **10’s HOLD** → Cancel.

Select by Category

- Press the [F8] (“UTILITY”) key to access the Utility menu.
- Press the [F7] key or the cursor keys [▲], [▼] to choose “Select by Category,” and then press the [F8] key. The Select Program by Category dialog box will appear. The programs in that category will be shown in the framed list.



- Select “Cat,” and use the Value Controller to choose the category that includes the program you wish to select.
- Use the cursor keys [▲], [▼] to select a program from the list. Alternatively, you can use the [◀], [▶] keys to select “Index,” and use the VALUE [▲], [▼] keys or [VALUE] dial to make your selection.
- Press the [F8] (“OK”) key to finalize your selection, or press the [F7] (“Cancel”) key to cancel your selection.

10’s HOLD

- Press the [./HOLD] key to display **10’s HOLD**. The first digit of the program number will be held (fixed).

- ② When you press a numeric key [0]–[9], the second digit of the program number will be input with a single action. You can also use the [VALUE] dial to change the second digit place.
- ③ You can use the VALUE [▲], [▼] keys to change the first digit.
- ④ To cancel, press the [./HOLD] key to turn off the **10'S HOLD** display.

♪ (Tempo) **[040...240, EXT]**

This sets the tempo of the KARMA function. The tempo can also be adjusted by the [TEMPO] knob. A display of **EXT** indicates that the "MIDI Clock" setting (GLOBAL 2.1–1a) has been set to **External**, and that the KARMA function will synchronize to MIDI Clock messages received from an external MIDI device. This parameter is linked with "Tempo" (6.1: Ed-KARMA).

1.1–1b: Program Information

This displays the functions that are assigned to the [SW1] key, [SW2] key, and real-time CONTROLS B mode [ASSIGNABLE 1]–[ASSIGNABLE 4] knobs for the selected program.

■ **1.1–1c: UTILITY**



Use the following procedure to select the desired utility.

- ① Press the [F8] ("UTILITY") key to access the Utility menu.
- ② Press the [F7] key or the cursor keys [▲], [◀], [▼], [▶] to select the desired utility.
- ③ Press the [F8] ("OK") key to access the dialog box.

note Utilities up to number 10 can also be selected by holding down the [ENTER] key and pressing the corresponding numeric key [0]–[9] to access the dialog box.

Write Program

If you wish to keep a program, be sure to write it into memory on this instrument. An edited program cannot be recovered if you fail to write it before turning off the power or selecting another program.

- ① Select "Write Program" to access the dialog box.



- ② The upper line shows the bank name and program name.
- ③ In "Category," specify the category of the program that you are writing. The category selected here can be used to find this program when selecting a program in Program, Combination, Sequencer and Song Play. With the factory settings, the program categories have been given the names of instruments etc., but you can use "Category Name Prog.00–07, 08–15" (GLOBAL 4.1–1/2) to modify these category names.
- ④ Press "To" to specify the writing destination.

note You can also use the Bank [A]–[E] keys to select a bank.

! It is not possible to write to banks G–g(d). If you have edited a program from banks G–g(d) and wish to write it, you must write to banks A–E.

- ⑤ If you wish to change the program name, press the [F5] ("Name") key to move to the text dialog box, and input the name. (ⓄBG p.39)
- ⑥ To write the program, press the [F8] ("OK") key. To cancel without writing, press the [F7] ("Cancel") key.

note When you press the [REC/WRITE] key, the Update Program dialog box will appear. Here too, you can write to the currently selected program.

Select by Category

Here you can select a program by category. (Ⓞp.2)

1.1–2: P.Edit (Performance Editor)



1.1–2c

1.1–2a: Bank, Program Select, ♪ (Tempo)

Select a program. The bank, number, and name of the program will be displayed (Ⓞp.2). "♪" sets the tempo.

1.1–2b: Performance Editor

The Performance Editor lets you edit major program parameters without moving to the PROG 2.1–7.3 Ed (Edit) pages. This edits multiple program parameters within the currently selected program, allowing you to make broad adjustments easily.

You can use the **Performance Editor** when you wish to adjust the depth of effects etc. while you are playing, or to make the initial rough settings to begin the process of creating a new sound.

Editing that you do here will affect the values of the program parameters in the edit buffer.

If you wish to keep the results of your editing, you must write (save) the program (ⓄBG p.38).

! Editing done using the Performance Editor will occur within the range of the corresponding parameter. If after using the Performance Editor to modify a value, you move to another page or mode and then return, the sound will remain in its edited state but the value shown in the LCD screen by the Performance Editor will be +00. You may do further editing from this state if you wish.

Since editing done using the Performance Editor is not as detailed as conventional editing, the balance between parameters may be lost. If this occurs, use 2.1: Ed-Basic–7.3: Ed-MasterFx to make fine adjustments.

MIDI If the "Exclusive" (GLOBAL 2.1–1b) setting is checked, MIDI exclusive parameter changes will be transmitted whenever you operate the Performance Editor. If these messages are received by this instrument whose "Exclusive" setting is checked, the Performance Editor corresponding to that message will be modified.

Octave [-03...+00...+03]

An adjustment of +01 will raise the pitch one octave.
An adjustment of -01 will lower the pitch one octave.
This setting cannot adjust the pitch higher than 4' (feet) or lower than 32' (feet).

Stretch (Pitch Stretch) [-12...+00...+12]

This simultaneously adjusts the Transpose and Tune of the oscillator. This lets you produce a variety of tonal changes and variations without losing the character of the original sound.

At the +00 setting, the value of the program parameters will be unchanged.

An adjustment of +01 will lower the Transpose value by 1, and simultaneously raise the Tune value by 100.

An adjustment of -01 will raise the Transpose value by 1, and simultaneously lower the Tune value by 100.

However, it is not possible for the Transpose value to exceed the range of ±12, nor the Tune value to exceed the range of ±1200.


 This Performance Edit function cannot be used for bank F.

OSC Bal (OSC Balance) [-10...+00...+10]

This adjusts the level balance between oscillators 1 and 2.
At the +00 setting, the value of the program parameters will be unchanged.

Positive (+) settings will lower the oscillator 2 level.
With an adjustment of +10, the oscillator 2 level will be 0.
The oscillator 1 level will not change.

Negative (-) settings will lower the oscillator 1 level.
With an adjustment of -10, the oscillator 1 level will be 0.
The oscillator 2 level will not change.

 For programs whose "Mode (Oscillator Mode)" (2.1-1a) setting is **Single**, oscillator 2 will not sound. Only the level of oscillator 1 will change. For a **Drums** program, this performance editor will have no effect.

Level (Amp Level) [-10...+00...+10]

This adjusts the amp level.
With an adjustment of +00, the value of the program parameters will be unchanged.

Positive (+) settings will increase the amp level above the value that was set.
With an adjustment of +10, the amp level will be 127 (maximum).

Negative (-) settings will lower the amp level below the value that was set.
With an adjustment of -10, the amp level will be 0.


Attack (Attack Time) [-10...+00...+10]

This adjusts the attack times of the filter EG and amp EG.
With an adjustment of +00, the value of the program parameters will be unchanged.

Positive (+) settings will lengthen the attack times beyond the values that were set.

With an adjustment of +10, the attack times will be 90.

Negative (-) settings will shorten the attack times.
With an adjustment of -10, the attack times will be 0.

 When you modify "Attack Time," the EG Start Level, Attack Level, Start Level Modulation, and Attack Time Modulation of the amp EG will also be adjusted simultaneously, to allow the maximum effect to be obtained.

Decay (Decay Time) [-10...+00...+10]

This adjusts the Decay Time and Slope Time of the filter EG and amp EG.

With an adjustment of +00, the value of the program parameters will be unchanged.

Positive (+) settings will lengthen the Decay Time and Slope Time beyond the values that were set. With an adjustment of +10, the times will be 99.

Negative (-) settings will shorten the Decay Time and Slope Time. With an adjustment of -10, the times will be 0.

IFX Bal (IFX Balance) [-10...+00...+10]

This adjusts the "W/D(Wet/Dry)" setting of insertion effects 1-5 as a whole.

With an adjustment of +00, the value of the program parameters will be unchanged.

Positive (+) settings will raise the Wet levels above the program setting, and lower the Dry levels. With an adjustment of +10, the setting will be "Wet."

Negative (-) settings will lower the Wet levels below the program setting, and raise the Dry levels. With an adjustment of -10, the setting will be "Dry."

MFX Bal (MFX Balance) [-10...+00...+10]



This adjusts the master effect "Rtn1 (Return1)" and "Rtn2 (Return2)" (7.3-1a) settings as a whole.

With an adjustment of +00, the value of the program parameters will be unchanged.

Positive (+) settings will raise the return levels above the program setting.
With an adjustment of +10, the setting will be 127 (maximum).

Negative (-) settings will lower the return levels below the program setting.
With an adjustment of -10, the setting will be 0.

Octave	Octave of OSC 1 and 2
Stretch	Transpose and Tune of OSC 1 and 2
OSC Bal	High Level and Low Level of OSC1 and 2
Level	Amp1 Level, Amp2 Level
Attack	Amp EG Attack Time, Start Level, Attack Level, Level Modulation St, Time Modulation At of Amp 1 and 2, and Filter EG Attack Time of Filter 1 and 2
Decay	AmpEG Decay Time, Slope Time of Amp 1 and 2, Filter EG Decay Time and Slope Time of Filter 1 and 2
IFX Bal	W/D(Wet/Dry) balance of the IFX1/2/3/4/5 effects
MFX Bal	Master Effect RTN1, 2(Return1, 2)

 For the **bank F** programs that can be used when the separately sold EXB-MOSS option is installed, different program parameters will be adjusted.
( EXB-MOSS owner's manual & p.269 "EXB-MOSS option")

■ 1.1-2c: UTILITY

 "Write Program," "Select by Category" (1.1-1c)

1.1-3: KARMA

Make KARMA function-related settings that will be used by the program.

Here you can select the **GE (Generated Effect)** used by the KARMA module.

Other settings are made in PROG 6.1, 6.2, 6.3, and 6.4.

To turn KARMA function on/off, use the KARMA real-time controls [ON/OFF] key. The state of the KARMA real-time controls [LATCH], [SCENE] key, switches [1]/[2], and knobs [1]-[8] and the note settings/velocity of the CHORD TRIGGER [1]-[4] keys can be saved independently for each program.



1.1-3b

1.1-3a: KARMA GE Setup

The phrases and patterns produced by a KARMA module are generated by a **GE (Generated Effect)**. Based on input note data from the keyboard, the GE creates phrases and patterns using numerous internal parameter settings to control the development of the note data, the rhythm, the chord structure, the velocity etc. MIDI control changes and pitch bend etc. can also be generated in synchronization with the phrase or pattern. In this way you can produce phrases and patterns in which the GE freely varies the tone or pitch. The GE can be selected independently for each KARMA module.

In Program mode you can use one KARMA module (module [A]). (In Combination, Sequencer, and Song Play modes, you can use four KARMA modules (modules [A], [B], [C], [D]).)

GE Category [00: name...]

This shows the category of the GE selected for the KARMA module.

You can use the utility menu command "Select by Category" to select a GE by category. (☞p.2, 1.1-3b)

GE Select [0000: Arp Model 1 Up/Dn...]

Here you can select a GE.

You can select from over 1000 different types.

♩ (Tempo) [040...240, EXT]

Specifies the tempo at which KARMA will operate. (☞p.3)

Int K.RTC (KARMA Real-time Controls-Use GE's Value) [Off, On]

Specifies whether the settings of the KARMA real-time controls knobs [1]-[8] and switches [1]/[2] will be initialized when you select a GE.

This allows you to hear the original state of the phrase or pattern produced by the GE. Normally you will turn this **On** when selecting a GE.

On (checked): The KARMA real-time controls knobs [1]-[8] and switches [1]/[2] will be initialized when a GE is selected.

Off (unchecked): The KARMA real-time controls knobs [1]-[8] and switches [1]/[2] will not be initialized when a GE is selected. (The state of the knobs and switches will be applied.)

🔧 Knobs [1]-[8] and switches [1]/[2] that are not assigned to GE parameters will not be initialized. (☞PROG 6.3-1a "Asgn")

If you select a GE when "Init K.RTC" is **On**, the KARMA real-time controls knobs [1]-[8] will automatically be set to the **center (12 o'clock)** and switches [1]/[2] will be **off**.

For each **GE**, up to sixteen parameters ideal for controlling the phrase or pattern have been preset.

These parameters can be assigned to KARMA real-time controls knobs [1]-[8] and switches [1]/[2] and controlled. If this is done, the settings of knobs [1]-[8] and switches [1]/[2] will significantly change the phrase or pattern of the GE. This setting will set knobs [1]-[8] to the **center**, and switches [1]/[2] to the **Off** position, ensuring that the GE will function in its original preset state.

note If the GE parameter "Asgn" (6.3-1(2)(3)(4)a) has been set to **Knob1-Knob8SW, SW[1], or SW[2]**, the GE may not operate in its preset state, depending on the GE that is selected. If this occurs, set the GE parameter "Asgn" to "---." Also, all KARMA module parameters including the GE parameter "Asgn" will be initialized when you execute the "Initialize KARMA Module" utility menu command in the 6.1: Ed-KARMA-6.4: Ed-KARMA-RT pages.

1.1-3b: UTILITY



☞ "Write Program" (1.1-1c)

For details on how to select the desired utility, refer to "PROG 1.1-1c: UTILITY."

Select by Category (Select Program by Category/Select by Category: GE)

When "Program Select" (1.1-2a) is selected, you can select programs by category. (☞p.2)

When "GE Select" (1.1-3a) is selected, you can select a GE by category.

For the procedure, refer to "Select by Category" (☞p.2).

1.1-4: K.RTC (KARMA RTC)



1.1-4a: RT Knob/SW Name

This displays the names of KARMA real-time controls knobs [1]–[8] and switches [1]/[2], and the settings of knobs [1]–[8] and switches [1]/[2] that are written in the program. These names can be edited in the PROG 6.4-4/5: Ed-KARMA RT, Name 1/2 page.

Knobs [1]–[8] and switches [1]/[2] can be switched between two types of settings; SCENE 1 and 2.

The settings of the knobs and switches displayed here will also change according to the SCENE 1/2 selection.

(☞ BG p.26 “Performing with the KARMA function”)

Graphic display of knobs [1]–[8] and switches [1]/[2]

When you operate a knob [1]–[8] or switch [1]/[2] to modify the value that is written in the program, the graphic display of that knob or switch will be highlighted in black.

When you return the knob or switch to the value that is written in the program, the graphic display will revert to its prior state.

You can use this feature to return a knob or switch to its original position after operating it.

To restoring the state of knobs [1]–[8] and switches [1]/[2]

You can either restore the setting while watching the graphic display of the knob or switch, or use one of the following methods. (This is possible only in Program and Combination modes.)

[Restoring the entire program]

Press the [COMPARE] key. All settings of the program will be restored to the written state. (☞ BG p.15 “Compare key”)

[Restoring only the SCENE settings]

- ① When you operate knobs [1]–[8] or switches [1]/[2] to modify the values that are written in the program, the LED of the current scene will blink.
- ② At this time, you can hold down the [ENTER] key and press the [SCENE] key to automatically restore all knobs and switches to the values that are written. (The LED will light.)
- ③ If you once again hold down the [ENTER] key and press the [SCENE] key, all knobs and switches will return to the state of step ①. (The LED will blink.)

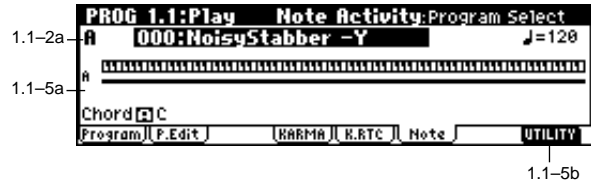
[Restoring only the settings of knobs [1]–[8] and switches [1]/[2]]

- ① When you operate a knob [1]–[8] or switch [1]/[2] to modify the values that are written in the program, the graphic display of that knob or switch will be highlighted in black.
- ② At this time, you can hold down the [ENTER] key and operate the knob or switch you adjusted, and it will automatically return to the value that was written.

1.1-4b: UTILITY

☞ “Write Program,” “Select by Category” (1.1-1c)

1.1-5: Note (Note Activity)



1.1-5a: Note Activity Display, Chord Name

Note Activity Display

This is a real-time display of the note-on/off states generated by the KARMA module (module [A]).

The key zone settings of the KARMA module are displayed as a solid line. (☞ p.27 PROG 6.1-2a: KeyZ/Thru)

Chord Name

This shows the name of the chord detected by the KARMA module.

note Chord detection is affected by the key zone (PROG 6.1-2a: KeyZ/Thru) and “Transpose” (PROG 6.2-1a: Module Parameter) of the KARMA module, and by the “Dynamic MIDI Destination” (PROG 6.4-3a/b/c/d) “Chord Scan” and “Smart Scan” settings.

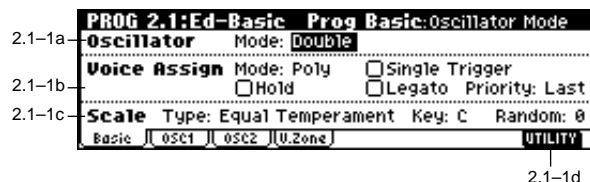
1.1-5b: UTILITY

☞ “Write Program,” “Select by Category” (1.1-1c)

PROG 2.1: Ed-Basic

Here you can make basic settings for the oscillator(s) that will be used.

2.1-1: Basic (Prog Basic)



2.1-1a: Oscillator

Mode (Oscillator Mode) [Single, Double, Drums]

Specifies the basic program type; whether it will use one or two oscillators, or a drum kit.

Single: The program will use **one oscillator** (Oscillator 1, Filter 1, Amplifier 1). In this case the program will have a **maximum of 62-note polyphony**.

Double: The program will use **two oscillators** (Oscillator 1/2, Filter 1/2, Amplifier 1/2). Allowing you to create more complex sounds. In this case the program will have a **maximum of 31-note polyphony**.

Drums: The program will use **one oscillator** (as when **Single** is selected), but Oscillator 1 will be assigned a drum kit instead of a multisample. In this case the program will have a **maximum of 62-note polyphony**.

2.1-1b: Voice Assign

Mode (Voice Assign Mode) [Poly, Mono]

Poly: The program will play polyphonically, allowing you to play chords.

Mono: The program will play monophonically, producing only one note at a time.

Hold [Off, On]

On (checked): Hold is **On**. Even when you take your finger off of the key, the note will continue sounding as if it continued to be held. Unless the "Amp1 EG", "Amp2 EG" (5.1-3a, 5.2-3) "S (Sustain Level)" is set to **0**, the sound will continue playing.

This is ideal for playing drum sounds, If you set "Mode (Oscillator Mode)" (2.1-1a) to **Drums**, you should **normally** turn **Hold On**.

Off (unchecked): Hold is **Off**. Except for drum programs, you should normally set **Hold Off**.

⚠ If you turn "Hold" **On** for a drum program, keys of the selected drum kit whose "Enable Note Off" parameter (GLOBAL 5.1-3a) is unchecked will be set to **Hold On**. Keys that are checked will be set to Hold Off. If you select **Hold Off**, the keys will be set to Hold Off regardless of their "Enable Note Off" setting.

Single Trigger [Off, On]

This is available when the "Mode (Voice Assign Mode)" setting is set to **Poly**.

On (checked): When the same note is played repeatedly, the previous note will be silenced before the next note is sounded, so that the notes do not overlap.

Legato [Off, On]

This is available when the "Mode (Voice Assign Mode)" setting is set to **Mono**.

On (checked): Legato is on. When multiple note-on's occur, the first note-on will retrigger the sound, and the second and subsequent note-on's will not retrigger.

Off (unchecked): Legato is off. Notes will always be retriggered when note-on occurs.

When legato is on, multiple note-on's will not retrigger the voice. If one note is already on and another note is turned on, the first voice will continue sounding. The oscillator sound, envelope, and LFO will not be reset, and only the pitch of the oscillator will be updated. This setting is effective for wind instrument sounds and analog synth-type sounds.

When legato is off, multiple note-on's will retrigger the voice at each note-on. The oscillator sound, envelope, and LFO will be reset (and retriggered) according to the settings of the program.

⚠ If "Legato" is checked, certain multisamples or keyboard locations may produce an incorrect pitch.

Priority [Low, High, Last]

This parameter is valid when "Mode (Voice Assign Mode)" is set to **Mono**.

It specifies which note will be given priority to play when two or more notes are played simultaneously.

Low: Lowest note will take priority.

High: Highest note will take priority.

Last: Last note will take priority.

2.1-1c: Scale

Type (Scale Type)

[Equal Temperament...User Octave 15]

Indicates the basic scale for the internal tone generator.

Equal Temperament: This is the most widely used scale, where each semitone step is spaced at equal pitch intervals.

Pure Major: In this temperament, major chords of the selected tonic will be perfectly in tune.

Pure Minor: In this temperament, minor chords of the selected tonic will be perfectly in tune.

Arabic: This scale includes the quarter-tone scale used in Arabic music.

Pythagoras: This scale is based on ancient Greek musical theory, and is especially effective for playing melodies.

Werkmeister (Werkmeister III): This is an equal tempered scale that was used since the later Baroque period.

Kirnberger (Kirnberger III): This scale was created in the 18th century, and is used mainly to tune harpsichords.

Slendro: This is an Indonesian gamelan scale in which an octave consists of five notes.

When "Key" is set to C, use the C, D, F, G and A notes. (Other keys will sound equal-tempered pitches.)

Pelog: This is an Indonesian gamelan scale in which an octave consists of seven notes.

When "Key" is set to C, use the white keys. (The black keys will sound the equal tempered pitches.)

Stretch: This tuning is used for acoustic pianos.

User All Notes: This is the full-range scale (C-1 - G9) that is specified in "User All Notes Scale" (GLOBAL3.1-2a).

User Octave 00-15: These are the single-octave scales that are specified in "User Octave Scale" (GLOBAL3.1-1a).

Key

[C...B]

Indicates the tonic note of the specified scale.
This setting is not valid for **Equal Temperament**, **Stretch**, and **User All Notes Scale**.

Random

[0...7]

As this **value is increased**, a greater variance will be applied to the pitch when each note is sounded. Normally you will set this to **0**. This parameter is used when simulating instruments that have natural instability in pitch, such as tape-mechanism organs or acoustic instruments.

▲ If a scale other than Equal Temperament is selected, the combination of the selected scale and the “Key” setting may skew the tuning of the base key (for example A=440 Hz). If this occurs, use “Master Tune” (GLOBAL 1.1-1a) to correct the pitch.

■ 2.1-1d: UTILITY



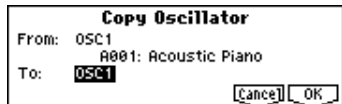
☞ “Write Program” (1.1-1c)

For details on how to select the desired utility function, refer to “PROG 1.1-1c: UTILITY.”

Copy Oscillator

This function copies oscillator settings to the currently selected program.

① Select “Copy Oscillator” to access the dialog box.

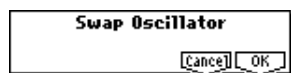


- ② In “From,” select the oscillator that you wish to copy and the copy source program. You can use the Bank [A]–[G] keys to select the bank.
- ③ In “To,” select the copy destination oscillator.
- ④ To execute the Copy Oscillator operation, press [F8] (“OK”) key. To cancel, press the [F7] (“Cancel”) key.

Swap Oscillator

This command exchanges the settings of oscillators 1 and 2.

① Select “Swap Oscillator” to access the dialog box.



- ② To execute the Swap Oscillator operation, press [F8] (“OK”) key. To cancel, press the [F7] (“Cancel”) key.

note This can be selected only if “Mode (Oscillator Mode)” (2.1-1a) is **Double**.

2.1-2: OSC1

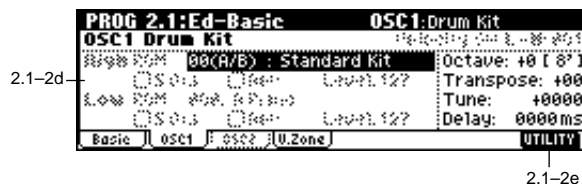
The multisample(s) (waveform) or drum kit on which the program will be based can be selected here for oscillator 1 and/or oscillator 2.

Internal ROM contains **425** different multisamples (preset multisamples) and **73** drum kits. If an EXB-PCM series option has been installed, you will be able to select multisamples from the installed option.

The following illustration shows a LCD screen where “Mode (Oscillator Mode)” (2.1-1a) has been set to **Double**. If this is set to **Single**, the OSC2 page parameter will not appear and cannot be set.



The following illustration shows the display when “Mode (Oscillator Mode)” (2.1-1a) has been set to **Drums**.



2.1-2a: OSC1 Multisample

Velocity SW L→H [001...127]

The oscillator 1 High and Low multisamples that you specify in “High, Low” (2.1-2b) will be switched at the velocity value that you specify here. Notes played with a velocity stronger than this value will be sounded by the High multisample.

2.1-2b: High, Low

Here you can select a multisample.

You can select different multisamples for High and Low, and use velocity to switch between the two multisamples. Start Offset, Reverse, and Level can be adjusted independently for the High and Low multisamples.

High:

High MS Bank [ROM, EXB* ...]
High Multisample [000...424, 000...]

Specifies the bank and multisample number of the High multisample. The multisample you select here will be sounded by velocities greater than the value of the “Velocity SW L→H” (2.1-2a) parameter. If you do not wish to use velocity switching, set the value to **001**, and select only the High multisample.


ROM: Select a preset multisample.


Use “High Multisample” to select from **000–424**.

EXB*: Multisamples from a separately sold EXB-PCM series option board can be selected. “*” will indicate the type of installed option.

The multisample number for “High Multisample” will depend on the options that are installed.

▲ The EXB* display will differ depending on the type of option board.

 If a program that uses a multisample from a separately sold EXB-PCM series board is selected, but the necessary multisample is not available because the corresponding EXB-PCM (expansion board) is not installed, the "High MS Bank" field will indicate "ROM." In this case, the program will not sound. By re-selecting the multisample bank, you can make the program sound.

 Each multisample has an upper limit, and may not produce sound when played above that limit.

S.Ofs (High Start Offset) [Off, On]

This specifies the point at which the multisample will begin sounding. For some multisamples this parameter will have no effect.

On (checked): The sound will start from the start offset location that is pre-determined for each multisample.

Off (unchecked): The sound will start from the beginning of the multisample waveform.

Rev (High Reverse) [Off, On]


The multisample will be played in reverse. In the case of ROM or optional (EXB-PCM series) multisamples that were originally specified to loop, the multisample will be played back in "one-shot" reverse mode. If the multisample was originally set to reverse, it will playback without change.

On (checked): The multisample will playback in reverse.

Off (unchecked): The multisample will playback normally.

Level (High Level) [0...127]

Specifies the level of the multisample.

 Depending on the multisample, high settings of this parameter may cause the sound to distort when a chord is played. If this occurs, lower the level.

Low:

Specifies the OSC1 Low multisample.

The Low multisample will sound when the velocity is less than the "Velocity SW L→H" (2.1-2a) setting.

Low MS Bank [ROM, EXB*...]

Low Multisample [000...424, 000...]

S.Ofs (Low Start Offset) [Off, On]

Rev (Low Reverse) [Off, On]

Level (Low Level) [000...127]

 Refer to the corresponding item in "High."

2.1-2c: Octave, Transpose, Tune, Delay

Octave [-2[32'], -1[16'], +0[8'], +1[4']]

Adjusts the pitch in octave units. The normal octave of the multisample is 8' (feet).

Transpose [-12...+12]

Adjusts the pitch in semitone steps over a range of ±1 octave.

Tune [-1200...+1200]

Adjusts the pitch of the sample in one-cent steps (a semitone is 100 cents) over a range of ±1 octave.

Delay [0ms...5000ms, KeyOff]

Specifies a delay time from note-on until the note will sound.

With a setting of **KeyOff**, the sound will begin when note-off occurs. This is used to create sounds such as the "click" that is heard when a harpsichord note is released. In this case, set the "Amp1 EG", "Amp2 EG" (5.1-3a, 5.2-3) "S (Sustain Level)" parameter to 0.

2.1-2d: OSC1 Drum Kit


Drum Kit [00(A/B)...63(User), 64(GM)...72(GM)]

Select a drum kit.

00 (A/B)–15 (A/B)	Preset drum kits.
16 (C)–31 (C)	for user drum kits, EXB-PCM series drum kits
32 (D)–47 (D)	
48 (User)–63 (User)	for user drum kits
64 (GM)–72 (GM)	ROM preset drum kits compatible with GM2.

Octave [-2[32'], -1[16'], +0[8'], +1[4']]

Adjusts the pitch in octave units. When using a drum kit, set the Octave to 8'.

 When editing a drum program, you must set this parameter to 8'. With other settings, the sounds of the drum kit will be assigned to the wrong notes of the keyboard.

Transpose [-12...+12]

This adjusts the location of the instruments in the selected drum kit. Unless you need to change this, leave it at 0.

Tune [-1200...+1200]

This adjusts the pitch in one-cent units.

The pitch of each drum kit can be adjusted in GLOBAL 5.1: DKit.

Delay [0ms...5000ms, KeyOff]

This specifies a delay time from note-on until the sound will begin.

With a setting of **KeyOff**, the sound will begin when note-off occurs. In this case, set the "Amp1 EG" parameter "S (Sustain Level)" (5.1-3a) to 0.

2.1-2e. UTILITY



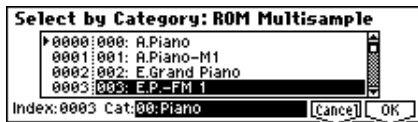
☞ “Write Program” (1.1-1c), “Copy Oscillator,” “Swap Oscillator” (2.1-1d)

For details on how to select the desired utility function, refer to “PROG 1.1-1c: UTILITY.”

Select by Category

Selects multisamples by category.

For the procedure, refer to “Select by Category” (☞p.2).



note This command is valid if “Mode (Oscillator Mode)” (2.1-1a) is **Single** or **Double**, and you are selecting the “High MS Bank,” “High Multisample,” “Low MS Bank,” or “Low Multisample” of OSC1 or OSC2 for which ROM was selected for “High MS Bank” or “Low MS Bank.”

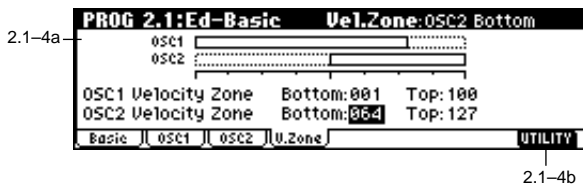
2.1-3: OSC2

This will appear when “Mode (Oscillator Mode)” (2.1-1a) is set to **Double**.

For details on the settings and function of the parameter, refer to “2.1-2: OSC1.”

2.1-4: V.Zone (Velocity Zone)

Specifies the range of velocities that will sound oscillator 1 and 2. By using these settings in conjunction with the “Velocity SW L→H” (2.1-2a) setting of each oscillator, you can specify the velocity ranges for the High and Low multisamples or drum kits.



2.1-4a: OSC 1/2 Velocity Zone

OSC1 Bottom [001...127]

Sets the minimum velocity value that will sound oscillator 1.

OSC1 Top [001...127]

Sets the maximum velocity value that will sound oscillator 1.

OSC2 Bottom [001...127]

Sets the minimum velocity value that will sound oscillator 2.

OSC2 Top [001...127]

Sets the maximum velocity value that will sound oscillator 2.

⚠ It is not possible to set the Bottom Velocity greater than the Top Velocity, nor the Top Velocity less than the Bottom Velocity.

note You can also input a value by playing a note on the keyboard while you hold down the [ENTER] key.

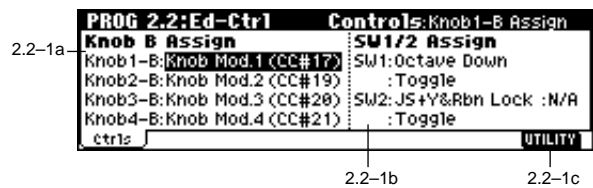
2.1-4b: UTILITY

☞ “Write Program” (1.1-1c), “Copy Oscillator,” “Swap Oscillator” (2.1-1d)

PROG 2.2: Ed-Ctrl

These settings specify the B-mode functions of real-time CONTROLS knobs [1]–[4] in Program mode, and the functions of the [SW1] key, the [SW2] key.

2.2-1: Ctrl's (Controls)



2.2-1a: Knob B Assign

Here you can assign functions (mainly various types of control change) to the B mode of the REAL-TIME CONTROLS knobs [1]–[4] (☞p.231 “Realtime Control Knobs B Assign List”).

The functions you set here will take effect when you operate the REAL-TIME CONTROLS knobs [1]–[4] in B-mode.

Knob1-B (Knob1-B Assign) **AMSource** [Off...MIDI CC#95]

Knob2-B (Knob2-B Assign) **AMSource** [Off...MIDI CC#95]

Knob3-B (Knob3-B Assign) **AMSource** [Off...MIDI CC#95]

Knob4-B (Knob4-B Assign) **AMSource** [Off...MIDI CC#95]

2.2-1b: SW1/2 Assign

These settings assign functions to [SW1] and [SW2] keys (☞p.230 “SW1, SW2 Assign List”).

SW1 Assign **AMSource** [Off, ..., AfterT Lock]

Here you can assign a function to the [SW1] key.

The on/off status of the switch is saved when the program is written. When you change the function, it will be reset to the “off” state.

SW1 Mode [Toggle, Momentary]

Specifies the on/off state that will occur when you press the [SW1] key in 1.1:Play.

Toggle: The key will alternate on/off each time you press [SW1] key).

Momentary: The key will be on only while you continue holding [SW1] key).

SW2 Assign AMSource [Off, ..., AfterT Lock]

SW2 Mode [Toggle, Momentary]

Here you can assign a function to [SW2] key. The functions that can be assigned to [SW2] key are the same as for [SW1] key, with the exception of **SW2 Mod.** (CC#81) instead of **SW1 Mod.** (CC#80).

note Although the following values can be selected for “SW1 Assign” and “SW2 Assign,” they will have no effect in actuality.

Data is compatible between this instrument and the TRITON/TRITONpro/TRITONproX (keyboard models of the TRITON and the TRITON-Rack). Programs created on this instrument can be used by a TRITON keyboard model, and vice versa.

In order to maintain compatibility, you are able to set these “invalid” parameters on this instrument.

N/A indicates Not Available.

- Ribbon Lock : N/A
- JS X&Rbn Lock : N/A
- JS+Y&Rbn Lock : N/A
- JS-Y&Rbn Lock : N/A

■ **2.2-1c: UTILITY**

☞ “Write Program” (1.1-1c), “Copy Oscillator,” “Swap Oscillator” (2.1-1d)

PROG 2.3: Ed-OSC

This page will be displayed when you select bank F if the separately sold EXB-MOSS option is installed. (☞ EXB-MOSS owner’s manual & p.269 “EXB-MOSS option”)

PROG 3.1: Ed-Pitch

Here you can make pitch modulation settings for oscillators 1 and 2.

3.1-1: OSC1

Specifies how the keyboard location will affect the pitch of oscillator 1, and select the controller that will modify the pitch and the depth of this effect. Here you can also specify the amount of pitch change caused by the pitch EG, and set the portamento on/off and mode settings.

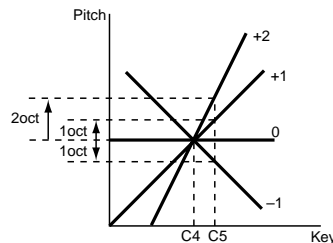


3.1-1a: Pitch

Pitch Slope [-1.0...+2.0]

Normally you will leave this at +1.0. **Positive (+) values** will cause the pitch to rise as you play higher on the keyboard, and **negative (-) values** will cause the pitch to fall as you play higher on the keyboard. With a value of 0, there will be no change in pitch, and the C4 pitch will sound regardless of the keyboard location you play.

How the Pitch Slope and pitch are related



Ribbon (#16) [-12...+12]

Specifies in semitone units how the pitch will change when CC#16 is received (or when the ribbon controller is pressed on this instrument or other instrument connected to MIDI IN connector).

12 half-steps equal one octave. With positive (+) values, the pitch will rise when you press the right half of a ribbon controller. With negative (-) values, the pitch will fall.

For example, with a setting of +12, pressing the far right edge of the ribbon controller will raise the pitch one octave. With a setting of -12, pressing the far right edge of the ribbon controller will lower the pitch one octave.

At the center of the ribbon controller, the original pitch will remain, so you can use this in conjunction with pressing the ribbon at its right edge to simulate the “hammering-on” techniques used by guitarists.

JS (+X) [-60...+12]

Specifies how the pitch will change when the joystick is moved all the way to the right.

A setting of 12 produces 1 octave of change.

For example, if you set this to +12 and move the joystick all the way to the right, the pitch will rise one octave above the original pitch.

JS (-X) [-60...+12]

Specifies how the pitch will change when the joystick is moved all the way to the left. (p.224)

A setting of 12 produces 1 octave of change.

For example, if you set this to -60 and move the joystick all the way to the left, the pitch will fall five octaves below the original pitch. This can be used to simulate the downward swoops that a guitarist produces using the tremolo arm.

AMS (Pitch AMS) [Off, (FEG, AEG, EXT)]

Selects the source that will modulate the pitch of oscillator 1 (p.222 "AMS List").

Intensity (AMS Intensity) [-12.00...+12.00]

Specifies the depth and direction of the effect produced by "AMS (Pitch AMS)."

With a setting of 0, no modulation will be applied. With a setting of 12.00, the pitch will change up to one octave.

For example if you set "AMS" to AfterT and apply pressure to the keyboard, the pitch will rise if this parameter is set to a positive (+) value, or fall if this parameter is set to a negative (-) value. The range is a maximum of one octave. (p.224)

3.1-1b: Pitch EG

Intensity [-12.00...+12.00]

Specifies the depth and direction of the modulation that the pitch EG specified in "EG (Pitch EG)" (3.1-5) page will apply to the pitch.

With a setting of 12.00, the pitch will change a maximum of ±1 octave.

AMS (Pitch EG AMS) [Off, (KT, EXT)]

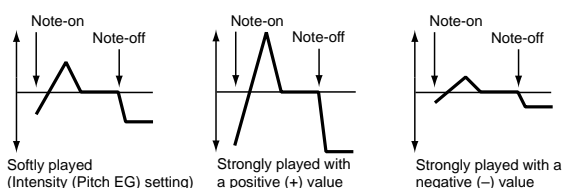
Selects the source that will control the pitch modulation applied by the pitch EG (p.222 "AMS List").

Intensity (AMS Intensity) [-12.00...+12.00]

Specifies the depth and direction of the effect that "AMS (Pitch EG AMS)" will have.

For example, if you set "AMS (Pitch EG AMS)" to Velocity and set this value to +12.00, the velocity will control the range of pitch change produced by the pitch EG in a range of ±1 octave (p.224). As you play more softly, the pitch change will draw closer to the pitch EG levels.

Pitch change (level)



note "Intensity" and "AMS (Pitch EG AMS)" will be added to determine the depth and direction of the pitch modulation applied by the pitch EG.

3.1-1c: Portamento

This turns the portamento effect (smooth change in pitch from one note to the next) on/off, and specifies how it will be applied. If [SW 1] or [SW2] are set to Porta.SW(CC#65), turning SW1 or SW2 on/off will apply portamento (p.222 "AMS List" SW1 CC#80, SW2 CC#81, Prta.SWCC#65).

MIDI Portamento will also be switched when CC#65 (Portamento SW) is received.

Enable (Porta. Enable) [Off, On]

On (checked): Portamento will be applied.

Off (unchecked): Portamento will not be applied.

Fingered (Porta. Fingered) [Off, On]

This parameter is available when "Enable (Porta. Enable)" is checked.

On (checked): Portamento will be applied when you continue holding the previous note as you press the next note (legato playing).

Off (unchecked): Portamento will always be applied, regardless of how you play.

Time (Porta. Time) [000...127]

This parameter is available when "Enable (Porta. Enable)" is checked.

This sets the portamento time. Increasing the value will produce a slower change in pitch.

3.1-1d: UTILITY

Write Program" (1.1-1c), "Copy Oscillator," "Swap Oscillator" (2.1-1d)

3.1-2: OS1lfo (OSC1 LFO)

Specifies the amount of pitch change produced by LFO1 and LFO2 for oscillator 1.

PROG 3.1:Ed-Pitch		OSC1 LFO:LFO1 Intensity	
Pitch LFO1/2 Modulation			
LF01 Intensity: +00.00	AMS: AfterT		
JS+Y Int: +00.00	Intensity: +00.00		
LF02 Intensity: +00.00	AMS: Off		
JS+Y Int: +00.00	Intensity: +00.00		
OSC1	OSC2	EG	UTILITY

3.1-2a

3.1-2b

3.1-2a: Pitch LFO1/2 Modulation

LFO1:

Intensity (LFO1 Intensity) [-12.00...+12.00]

Specifies the depth and direction of the pitch modulation applied by the OSC 1 LFO1 settings you made in "OS1LFO1" page (5.3-1).

With a setting of 12.00, a maximum of ±1 octave of pitch modulation will be applied. Negative (-) values will invert the LFO waveform.

JS+Y Int. (LFO1 JS+Y Int.) [-12.00...+12.00]

Specifies the depth and direction of the effect that joystick movement in the +Y direction (away from yourself) will have on the pitch modulation applied by the OSC1 LFO1.

As this **value is increased**, moving the joystick in the +Y direction will cause the OSC1 LFO1 to produce deeper pitch modulation. With a setting of **12.00** a maximum of ±1 octave of pitch modulation will be applied. **Negative (-) values** will invert the LFO waveform.

AMS (LFO1 AMS) [Off, (PEG, FEG, AEG, KT, EXT)]

Indicates the source that will control the depth of pitch modulation produced by the OSC1 LFO1 (see p.222 "AMS List").

Intensity (AMS Intensity) [-12.00...+12.00]

Specifies the depth and direction of the effect that "AMS (LFO1 AMS)" will have.

With a setting of **0**, modulation will not be applied. With a setting of **12.00**, the OSC1 LFO1 will apply a maximum of ±1 octave of pitch modulation. **Negative (-) settings** will invert the LFO waveform.

For example if "AMS" is set to **AfterT** and you apply pressure to the keyboard, a **positive (+)** setting of this parameter will cause the pitch modulation created by OSC1 LFO1 to be applied with the normal phase, and a **negative (-)** setting will cause the LFO to be applied with inverted phase.

The "Intensity (LFO1 Intensity)," "JS+Y Int. (LFO1 JS+Y Int.);" and "AMS (LFO1 AMS)" settings will be added to determine the depth and direction of the pitch modulation applied by OSC1 LFO1 (see p.224).

LFO2:

Intensity (LFO2 Intensity) [-12.00...+12.00]

JS+Y Int. (LFO2 JS+Y Int.) [-12.00...+12.00]

AMS (LFO2 AMS) [Off, (PEG, FEG, AEG, KT, EXT)]

Intensity (AMS Intensity) [-12.00...+12.00]

Refer to the preceding section "LFO1."

3.1-2b: UTILITY

Write Program" (1.1-1c), "Copy Oscillator," "Swap Oscillator" (2.1-1d)

3.1-3: OSC2

Specifies how the keyboard location will affect the pitch of oscillator 2, and select the controller that will affect the pitch and specify the depth of control. Here you can also specify the amount of pitch change produced by the pitch EG, and set the portamento on/off status and mode. For details on each parameter, refer to the preceding "3.1-1: OSC1."

3.1-4: OS2lfo (OSC2 LFO)

Specifies the amount of pitch change produced by LFO1 and LFO2 for oscillator 1. For an explanation of each parameter, refer to the preceding "3.1-2: OS1lfo."

3.1-5: EG (Pitch EG) AMSource

Here you can make settings for the pitch EG, which creates time-variant changes in the pitch of oscillators 1 and 2. The depth of pitch change produced by these EG settings on oscillator 1 (2) is adjusted by "Pitch EG" (3.1-1b, 3.1-3).

The screenshot shows the 'Pitch EG: Start Level' menu. It includes a graph of pitch change over time. Parameters listed include: L: +99, A: +99, R: +99; T: +99, D: +99, R: +99; Level Mod; AMS1: Off, L: +00, S: 0, A: 0; AMS2: Off, L: +00, S: 0, A: 0; OSC1, OSC2, and Utility.

3.1-5a: Pitch EG

These settings specify how the pitch will change over time.

L (Level):

These parameters specify the amount of pitch change. The actual amount of pitch change will depend on the "Pitch EG" (3.1-1b, 3.1-3) parameter "Intensity." For example with an "Intensity" setting of **+12.00**, a "Level" setting of **+99** would raise the pitch one octave, and a "Level" setting of **-99** would lower the pitch one octave.

S (Start Level) [-99...+99]

Specifies the amount of pitch change at note-on.

A (Attack Level) [-99...+99]

Specifies the amount of pitch change when the attack time has elapsed.

R (Release Level) [-99...+99]

Specifies the amount of pitch change when the release time has elapsed.

T (Time):

These parameters specify the time over which the pitch change will occur.

A (Attack Time) [0...99]

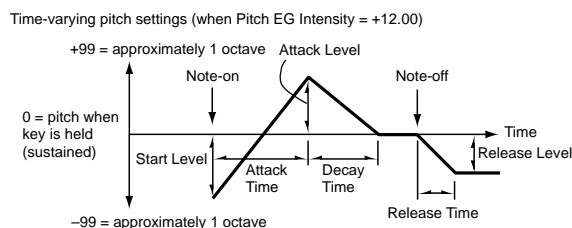
Specifies the time over which the pitch will change from note-on until it reaches the pitch specified as the attack level.

D (Decay Time) [0...99]

Specifies the time over which the pitch will change after reaching the attack level until it reaches the normal pitch.

R (Release Time) [0...99]

Specifies the time over which the pitch will change from note-off until it reaches the pitch specified as the release level.



3.1–5b: Level Mod. (Level Modulation)

These settings allow the pitch EG “L (Level)” parameters to be controlled by alternate modulation.

AMS1 (Level Mod. AMS1) [Off, (KT, EXT)]

Selects the source that will control the pitch EG “L (Level)” parameters (see p.222 “AMS List”).

I (AMS1 Intensity) [–99...+99]

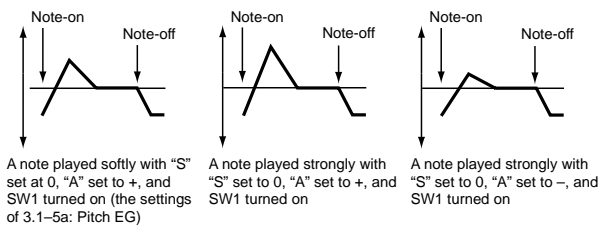
Specifies the depth and direction of the effect applied by “AMS1 (Level Mod. AMS1).”

With a setting of 0, the levels specified by “Pitch EG” (3.1–5a) will be used.

For example, if “AMS1 (Level Mod. AMS1)” is **SW1 #80**, pressing the [SW1] key to turn it on will change the “Level” parameters of the Pitch EG. (“SW1/2 Assign”: 2.2–1b) to **SW1 Mod. (CC#80)**. As the absolute value of “I (AMS1 Intensity)” is increased, the pitch EG levels will change more greatly when the [SW1] key is turned on. The direction of the change is specified by “S (AMS1 SW Start)” and “A (AMS1 SW Attack).” When the [SW1] key is turned off, the pitch EG levels will return to their own settings.

If “AMS1” is set to **Velocity**, increasing the absolute value of “Intensity” will produce increasingly wider change in pitch EG levels for strongly-played notes. The direction of the change is specified by “S (AMS1 SW Start)” and “A (AMS1 SW Attack).” As you play more softly, the pitch change will draw closer to the pitch EG levels.

Pitch EG change (level) (AMS=SW1/Velocity, Intensity= positive (+) value)



S (AMS1 SW Start) [–, 0, +]

Specifies the direction of change in “S (Start Level)” caused by “AMS1 (Level Mod. AMS1).” If “I (AMS1 Intensity)” is a **positive (+)** value, a setting of + will raise the EG level, and a setting of – will decrease it. With a setting of 0 there will be no change.

A (AMS1 SW Attack) [–, 0, +]

Specifies the direction of change in “A (Attack Level)” caused by “AMS1 (Level Mod. AMS1).” If “I (AMS1 Intensity)” is a **positive (+)** value, a setting of + will raise the EG level, and a setting of – will decrease it. With a setting of 0 there will be no change.

AMS2 (Level Mod. AMS2) [Off, (KT, EXT)]

I (AMS2 Intensity) [–99...+99]

S (AMS2 SW Start) [–, 0, +]

A (AMS2 SW Attack) [–, 0, +]

Refer to the preceding paragraphs “AMS1 (Level Mod. AMS1)”–“A (AMS1 SW Attack).”

3.1–5c: Time Mod. (Time Modulation)

These parameters let you use alternate modulation to control the “T (Time)” parameters of the pitch EG.

AMS (Time Mod. AMS) [Off, (KT, EXT)]

Indicates the source that will control the “T (Time)” parameters of the pitch EG (see p.222 “AMS List”).

I (AMS Intensity) [–99...+99]

Specifies the depth and direction of the effect that “AMS (Time Mod. AMS)” will have.

With a setting of 0, the pitch EG times will be just as specified by the “Pitch EG” (3.1–5a) settings.

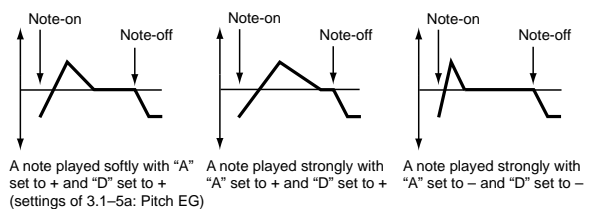
The alternate modulation value at the moment that the EG reaches each point will determine the actual value of the EG time that comes next.

For example, the decay time will be determined by the alternate modulation value at the moment that the attack level is reached.

When this parameter is set to values of **16, 33, 49, 66, 82, or 99**, the specified EG times will speed up as much as 2, 4, 8, 16, 32, or 64 times respectively (or slowed down to 1/2, 1/4, 1/8, 1/16, 1/32, or 1/64 of the original time).

For example if “AMS (Time Mod. AMS)” is set to **Velocity**, increasing the absolute value of “I (AMS Intensity)” will allow strongly-played notes to increase the changes in pitch EG “T (Time)” values. The direction of the change is specified by “A (AMS SW Attack)” and “D (AMS SW Decay).” As you play more softly, the pitch EG times will more closely approach the actual settings of the pitch EG.

Pitch EG changes (Time) (AMS = Velocity, Intensity = positive (+) value)



A (AMS SW Attack) [–, 0, +]

Specifies the direction in which “AMS (Time Mod. AMS)” will affect the “A (Attack Time).” With **positive (+)** values of “I (AMS Intensity),” a setting of + will cause the time to be lengthened, and a setting of – will cause the time to be shortened. With a setting of 0 there will be no change.

D (AMS SW Decay) [–, 0, +]

Specifies the direction in which “AMS (Time Mod. AMS)” will affect the “D (Decay Time).” With **positive (+)** values of “I (AMS Intensity),” a setting of + will cause the time to be lengthened, and a setting of – will cause the time to be shortened. With a setting of 0 there will be no change.

■ 3.1–5d: UTILITY

✎ “Write Program” (1.1–1c), “Copy Oscillator,” “Swap Oscillator” (2.1–1d)

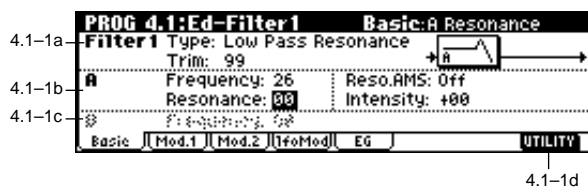
PROG 4.1: Ed-Filter 1

Indicates settings for filter 1 that controls the tone of oscillator 1. You can select either a 24 dB/oct low pass filter with resonance, or a 12 dB/oct low pass filter and 12 dB/oct high pass filter connected in series.

When "Mode (Oscillator Mode)" (2.1-1a) is **Single, Drums** you can use filter 1. When it is **Double**, you can use filters 1 and 2. In the case of **Single, Drums** the filter 2 pages cannot be selected.

4.1-1: Basic

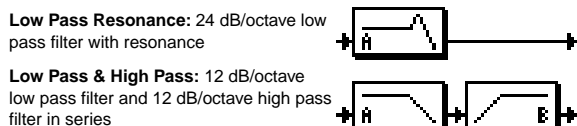
Here you can specify the basic type for filter 1 (used by oscillator 1), and set the cutoff frequency and resonance.



4.1-1a: Filter 1

Type (Filter 1 Type)
[Low Pass Resonance, Low Pass & High Pass]

Indicates the type for filter 1.



Trim [00...99]

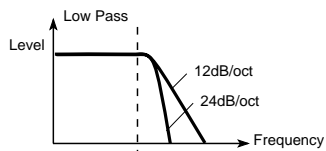
Adjusts the level at which the audio signal output from OSC1 is input to filter 1A.

If this value is raised, the sound may be distorted if Resonance is set to a high value or when you play a chord.

4.1-1b: A (Filter A)

This filter cuts the high-frequency range above the cutoff frequency. This is the most common type of filter, which cuts the overtone structure to make a bright (sharp) tone darker (mellow).

When "Type (Filter 1 Type)" is **Low Pass Resonance**, the cut will have a steeper curve.



Frequency (A Frequency) [00...99]

Specifies the cutoff frequency of filter 1A.

Resonance (A Resonance) [00...99]

This emphasizes the overtone components that lie in the region of the cutoff frequency specified by "Frequency (A Frequency)," producing a more distinctive sound. Increasing this value will produce a stronger effect.

Reso.AMS (Resonance AMS)
[Off, (PEG, FEG, AEG, LFO, KT, EXT)]

Indicates the source that will control the "Resonance (A Resonance)" level (see p.222 "AMS List").

Intensity (AMS Intensity) [-99...+99]

Specifies the depth and direction of the effect that "Reso.AMS (Resonance AMS)" will have on the resonance level specified by "Resonance (A Resonance)."

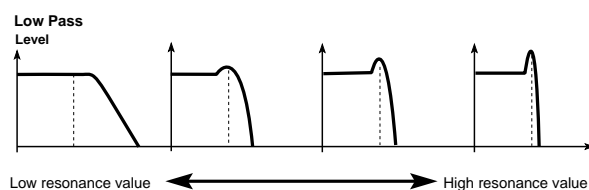
For example, if **Velocity** has been selected, changes in keyboard velocity will affect the resonance.

With **positive (+) values**, the resonance will increase as you play more strongly, and as you play more softly the resonance will approach the level specified by the "Resonance (A Resonance)" setting.

With **negative (-) values**, the resonance will decrease as you play more strongly, and as you play more softly the resonance will approach the level specified by the "Resonance (A Resonance)" setting.

The resonance level is determined by adding the "Resonance (A Resonance)" and "Intensity (AMS Intensity)" values.

The effect of resonance

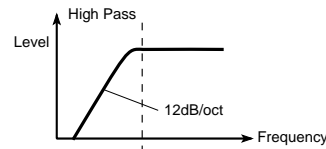


4.1-1c: B (Filter B)

This will be displayed if "Type (Filter 1 Type)" (4.1-1a) is **Low Pass & High Pass**.

This filter cuts the low-frequency range that lies below the cutoff frequency.

By cutting the lower overtones, it lightens the tone.



Frequency (B Frequency) [00...99]

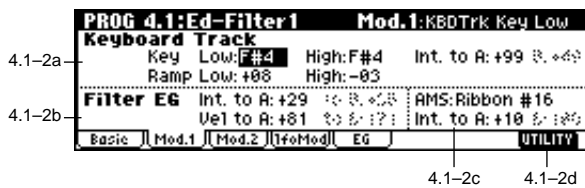
Specifies the cutoff frequency of filter 1B.

4.1-1d: UTILITY

"Write Program" (1.1-1c), "Copy Oscillator," "Swap Oscillator" (2.1-1d)

4.1-2: Mod.1 (Filter1 Modulation1)

Indicates settings for keyboard tracking which modifies the tone by modulating the filter 1 cutoff frequency "Frequency (A/B Frequency)," and intensity settings for the filter 1 EG, etc.



4.1-2a: Keyboard Track AMSOURCE

These settings specify keyboard tracking for the cutoff frequency of filter 1. The way in which the cutoff frequency is affected by the Key: "Low" and "High," Ramp: "Low" and "High" parameters.

Key:

Specifies the note numbers at which keyboard tracking will begin to apply, and set the "Int. to A" and "Int. to B" parameters to specify the depth and direction of the change applied to filter 1 A and B.

For the range of notes between "Low (KBDTrk Key Low)" and "High (KBDTrk Key High)," the cutoff frequency will change according to the keyboard location (pitch).

note You can also input a value by playing a note on the keyboard while you hold down the [ENTER] key.

Low (KBDTrk Key Low) [C-1...G9]

Keyboard tracking will apply to the range below the specified note number.

High (KBDTrk Key High) [C-1...G9]

Keyboard tracking will apply to the range above the specified note number.

Ramp (Ramp Setting):

Specifies the angle of keyboard tracking.

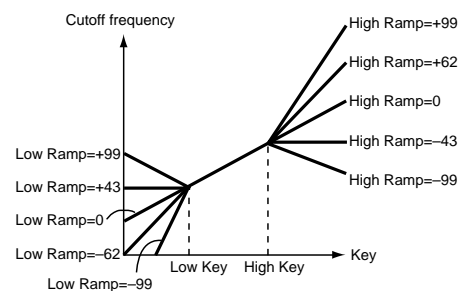
Low (KBDTrk Ramp Low) [-99...+99]

High (KBDTrk Ramp High) [-99...+99]

If "Int. to A (KBDTrk Int. to A)" and "Int. to B (KBDTrk Int. to B)" are set to +50, "Low (KBDTrk Ramp Low)" is set to -62 and "High (KBDTrk Ramp High)" is set to +62, the angle of the change in cutoff frequency will correspond to the keyboard location (pitch). This means that the oscillation that occurs when you increase the "Resonance (A Resonance)" (4.1-1b) will correspond to the keyboard location.

If you set "Low (KBDTrk Ramp Low)" to +43 and "High (KBDTrk Ramp High)" to -43, the cutoff frequency will not be affected by keyboard location. Use this setting when you do not want the cutoff frequency to change for each note.

How cutoff frequency is affected by keyboard location and the Ramp setting ("Int. to A," "Int. to B" = +50)



Int. to A (KBDTrk Int. to A) [-99...+99]

Specifies the depth and direction of the effect on filter 1A produced by keyboard tracking settings "Low (KBDTrk Key Low)," "High (KBDTrk Key High)," "Low (KBDTrk Ramp Low)," and "High (KBDTrk Ramp High)."

With **positive (+)** settings, the effect will be in the same direction as the keyboard tracking settings. With **negative (-)** settings, the effect will be in the opposite direction.

Int. to B (KBDTrk Int. to B) [-99...+99]

Specifies the depth and direction of the effect on filter 1B produced by keyboard tracking. (☞ "Int. to A")

4.1-2b: Filter EG

Int. to A (Intensity to A) [-99...+99]

Specifies the depth and direction of the effect that the time-varying changes created by the filter 1 EG will have on the filter 1A cutoff frequency.

With **positive (+)** settings, the sound will become brighter when the EG levels set by Filter 1 EG "L (Level)" and "T (Time)" parameters (4.1-5a) are in the "+" area, and darker when they are in the "-" area.

With **negative (-)** settings, the sound will become darker when the EG levels set by Filter 1 EG "L (Level)" and "T (Time)" parameters are in the "+" area, and brighter when they are in the "-" area.

Int. to B (Intensity to B) [-99...+99]

Specifies the depth and direction of the effect that the time-varying changes created by the filter 1 EG will have on the filter 1B cutoff frequency.

☞ ("Int. to A" Intensity to A)

Vel to A (Velocity to A) [-99...+99]

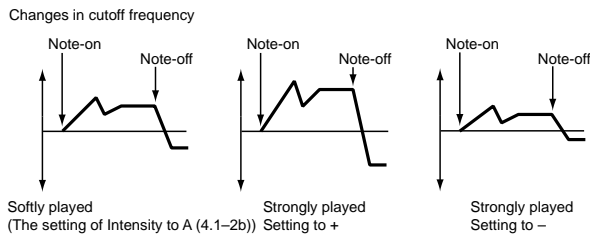
This parameter specifies the depth and direction of the effect that velocity will have on the time-varying changes created by the filter 1 EG (as set by "Filter 1 EG" 4.1-5) to control the filter 1A cutoff frequency.

With **positive (+) values**, playing more strongly will cause the filter 1 EG to produce greater changes in cutoff frequency. With **negative (-) values**, playing more strongly will also cause the filter 1 EG to produce greater changes in cutoff frequency, but with the polarity of the EG inverted.

Vel to B (Velocity to B) [-99...+99]

This parameter specifies the depth and direction of the effect that velocity will have on the time-varying changes created by the filter 1 EG to control the filter 1B cutoff frequency.

☞ ("Vel to A" Velocity to A).



■ 4.1-2c: AMS, Into to A, Int to B

AMS (Filter EG AMS) [Off, (EXT)]

Indicates the source that will control the depth and direction of the effect that the time-varying changes produced by the filter 1 EG will have on the cutoff frequency of filters 1A and 1B (see p.222 "AMS List").

Int. to A (AMS Int. to A) [-99...+99]

Specifies the depth and direction of the effect that "AMS (Filter EG AMS)" will have on filter 1A. For details on how this will apply, refer to "Int. to A (Intensity to A)."

Int. to B (AMS Int. to B) [-99...+99]

Specifies the depth and direction of the effect that "AMS (Filter EG AMS)" will have on filter 1B. For details on how this will apply, refer to "Int. to A (Intensity to A)."

MDI The sum of the settings for "Int. to A (B)," "Vel to A (B)," and "Int. to A (B) (AMS Int. to A/B)" will determine the depth and direction of the effect produced by the filter EG.

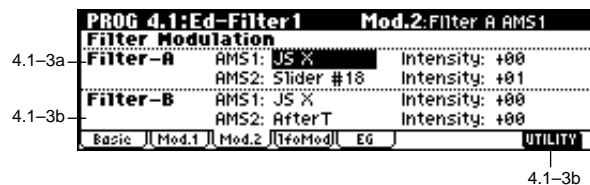
■ 4.1-2d: UTILITY

see "Write Program" (1.1-1c), "Copy Oscillator," "Swap Oscillator" (2.1-1d)

4.1-3: Mod.2 (Filter1 Modulation2)

Indicates settings for the controller that will modify the tone by applying modulation to the filter 1 cutoff frequency "Frequency (A/B Frequency)."

If "Type (Filter Type)" (4.1-1a) is **Low Pass Resonance**, the filter B parameters will not be displayed.



4.1-3a: Filter-A Modulation

AMS1 (Filter A AMS1) [Off, (PEG, AEG, EXT)]

Indicates the source that will control modulation of the filter 1A cutoff frequency (see p.222 "AMS List").

Intensity (A AMS1 Intensity) [-99...+99]

Specifies the depth and direction of the effect that "AMS1 (Filter A AMS1)" will have. When "AMS1 (Filter A AMS1)" is JS X, a **positive (+) value** for this parameter will cause the cutoff frequency to rise when the joystick is moved toward the right, and fall when the joystick is moved toward the left. With a **negative (-)**

value for this parameter, the opposite will occur. This value is added to the setting of the Filter A "Frequency (A Frequency)"(4.1-1b).

AMS2 (Filter A AMS2) [Off, (PEG, AEG, EXT)]

Intensity (A AMS2 Intensity) [-99...+99]

Selects "AMS2 (Filter A AMS2)," and specify the depth and direction of the effect that the selected source will have (see "AMS1," "Intensity").

■ 4.1-3b: Filter-B Modulation

This will be displayed when "Type (Filter Type)" (4.1-1a) is **Low Pass & High Pass**.

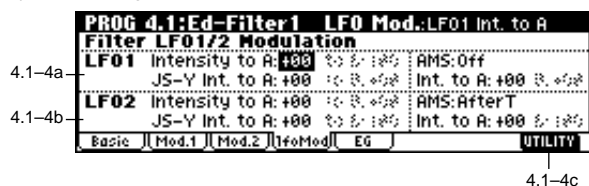
Two alternate modulation sources can be used to modulate the cutoff frequency of filter 1B (see "Filter-A Modulation").

■ 4.1-3c: UTILITY

see "Write Program" (1.1-1c), "Copy Oscillator," "Swap Oscillator" (2.1-1d)

4.1-4: LfoMod (LFO Modulation)

Here you can use the filter 1 LFO to apply cyclic modulation to the cutoff frequency of filter 1 (for oscillator 1) to create cyclical changes in tone.



4.1-4a: Filter LFO1 Modulation

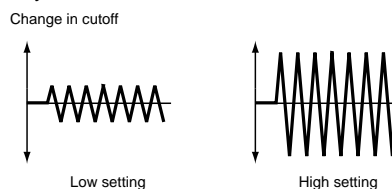
Intensity to A (LFO1 Int. to A) [-99...+99]

Specifies the depth and direction of the modulation that OSC1 LFO1 (set by "OSC1 LFO1" 5.3-1a) will have on the cutoff frequency of filter 1A.

Negative (-) settings will invert the phase.

Intensity to B (LFO1 Int. to B) [-99...+99]

Specifies the depth and direction of the modulation that OSC1 LFO1 will have on the cutoff frequency of filter 1B (see "Intensity to A").



JS-Y Int. to A (LFO1 JS-Y Int. to A) [-99...+99]

By moving the joystick in the Y direction (toward yourself), you can control the depth at which OSC1 LFO1 modulates the cutoff frequency of filter 1A. This parameter specifies the depth and direction of the control.

For example, as this **value is raised**, OSC1 LFO1 will have a correspondingly greater effect on filter 1 when the joystick is moved in the -Y direction.

JS-Y Int. to B (LFO1 JS-Y Int. to B) [-99...+99]

By moving the joystick in the Y direction (toward yourself), you can control the depth at which OSC1 LFO1 modulates the cutoff frequency of filter 1B. This parameter specifies the depth and direction of the control. (☞“JS-Y Int. to A”)

AMS (LFO1 AMS) [Off, (PEG, FEG, AEG, KT, EXT)]

Selects a source that will control the depth and direction of cutoff frequency change for both filters 1A and 1B (☞p.222 “AMS List”).

Int. to A (LFO1 AMS Int. to A) [-99...+99]

Specifies the depth and direction of the effect that “AMS (LFO1 AMS)” will have on filter 1A. For example, if “AMS” is **AfterT**, higher settings of this parameter will allow greater change to be applied to OSC1 LFO1 when you apply pressure to the keyboard.

Int. to B (LFO1 AMS Int. to B) [-99...+99]

Specifies the depth and direction of the effect that “AMS (LFO1 AMS)” will have on filter 1B (☞“Int. to A”).

4.1-4b: Filter LFO2 Modulation

Adjusts the depth of the cyclic modulation applied by OSC1 LFO2 (set by “OSC1 LFO 2” 5.3-2) to the cutoff frequency of filters 1A and 1B (☞“Filter LFO 1 Modulation” 4.1-4a).

Intensity to A (LFO2 Int. to A) [-99...+99]

Intensity to B (LFO2 Int. to B) [-99...+99]

JS-Y Int. to A (LFO2 JS-Y Int. to A) [-99...+99]

JS-Y Int. to B (LFO2 JS-Y Int. to B) [-99...+99]

AMS (LFO2 AMS) [Off, (PEG, FEG, AEG, KT, EXT)]

Int. to A (LFO2 AMS Int. to A) [-99...+99]

Int. to B (LFO2 AMS Int. to B) [-99...+99]

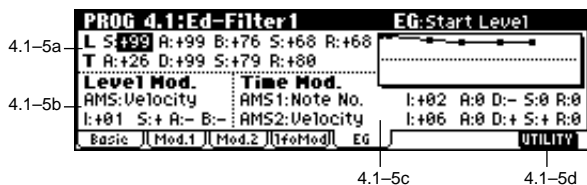
■ 4.1-4c: UTILITY

☞“Write Program” (1.1-1c), “Copy Oscillator,” “Swap Oscillator” (2.1-1d)

4.1-5: EG (Filter1 EG) AMSSource

Here you can make settings for the EG that will produce time-varying changes in the cutoff frequency of filters 1A and 1B.

The depth of the effect that these settings will have on the filter 1 cutoff frequency is determined by “Filter EG” (4.1-2b).



4.1-5a: Filter1 EG

Specifies the time-varying change produced by the filter 1 EG.

L (Level):

The result will depend on the filter that was selected in “Type (Filter Type)” (4.1-1a). For example with the **Low Pass Resonance** filter, **positive (+)** values of “Int. to A” (4.1-2b) will cause the tone to be brightened by **positive (+) levels**, and darkened by **negative (-) levels**.

S (Start Level) [-99...+99]

Specifies the change in cutoff frequency at the time of note-on.

A (Attack Level) [-99...+99]

Specifies the change in cutoff frequency after the attack time has elapsed.

B (Break Point Level) [-99...+99]

Specifies the change in cutoff frequency after the decay time has elapsed.

S (Sustain Level) [-99...+99]

Specifies the change in cutoff frequency that will be maintained from after the slope time has elapsed until note-off occurs.

R (Release Level) [-99...+99]

Specifies the change in cutoff frequency that will occur when the release time has elapsed.

T (Time):

These parameters specify the time over which each change will occur.

A (Attack Time) [00...99]

Specifies the time over which the level will change from note-on until the attack level is reached.

D (Decay Time) [00...99]

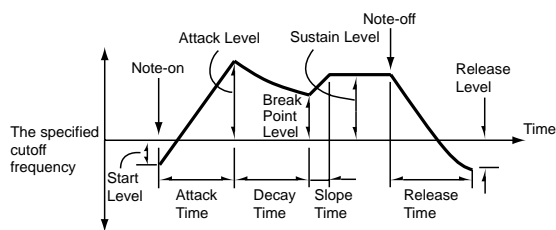
Specifies the time over which the level will change from the attack level to the break point level.

S (Slope Time) [00...99]

Specifies the time over which the level will change after the decay time has elapsed until the sustain level is reached.

R (Release Time) [00...99]

Specifies the time over which the level will change after note-on occurs until the release level is reached.



4.1-5b: Level Mod. (Level Modulation)

These settings let you use alternate modulation to control the “L (Level)” parameters of the filter 1 EG.

AMS (Level Mod. AMS) [Off, (KT, EXT)]

Indicates the source that will control the “L (Level)” parameters of the filter 1 EG (☞p.222 “AMS List”).

I (AMS Intensity) [-99...+99]

Specifies the depth and direction of the effect that “AMS (Level Mod. AMS)” will have.

For example, if “AMS (Level Mod. AMS)” is **Velocity**, and you set “S (AMS SW Start),” “A (AMS SW Attack)” and “B (AMS SW Break)” to + and set “I (AMS Intensity)” to a **positive (+) value**, the EG levels will rise as you play more strongly. If “Intensity” is set to a **negative (-) values**, the EG levels will fall as you play more strongly.

With a setting of 0, the levels specified by “Filter 1 EG” (4.1-5a) will be used.

S (AMS SW Start) [-, 0, +]

Specifies the direction in which "AMS (Level Mod. AMS)" will affect "S (Start Level)." When "I (AMS Intensity)" has a **positive (+)** value, a setting of + for this parameter will allow "AMS" to raise the EG level, and a setting of - will allow "AMS" to lower the EG level. With a setting of 0 there will be no change.

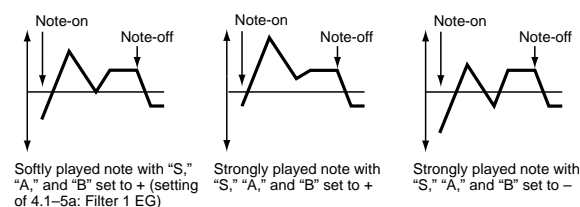
A (AMS SW Attack) [-, 0, +]

Specifies the direction in which "AMS (Level Mod. AMS)" will affect "A(Attack Level)." When "I (AMS Intensity)" has a **positive (+)** value, a setting of + for this parameter will allow "AMS" to raise the EG level, and a setting of - will allow "AMS" to lower the EG level. With a setting of 0 there will be no change.

B (AMS SW Break) [-, 0, +]

Specifies the direction in which "AMS (Level Mod. AMS)" will affect "B (Break Point Level)." When "I (AMS Intensity)" has a **positive (+)** value, a setting of + for this parameter will allow "AMS" to raise the EG level, and a setting of - will allow "AMS" to lower the EG level. With a setting of 0 there will be no change.

Filter 1 EG changes (level) (AMS = Velocity, Intensity = a positive (+) value)



4.1-5c: Time Mod. (Time Modulation)

These settings let you use alternate modulation to control the "T (Time)" parameters of the filter 1 EG.

AMS1 (Time Mod. AMS1) [Off, (KT, EXT)]

Indicates the source that will control the "T (Time)" parameters of the filter 1 EG (see p.222 "AMS List").

I (AMS1 Intensity) [-99...+99]

Specifies the depth and direction of the effect that "AMS1 (Time Mod. AMS1)" will have.

For example, if "AMS1 (Time Mod. AMS1)" is set to Flt KTr +/-, the EG "T (Time)" parameters will be controlled by the Keyboard Track (4.1-2a) settings. With **positive (+)** values of this parameter, **positive (+)** values of "Ramp (Ramp Setting)" (4.1-2a) will lengthen the EG times, and **negative (-)** values of "Ramp (Ramp Setting)" will shorten the EG times. The direction of change is specified by "A (AMS1 SW Attack)," "D (AMS1 SW Decay)," "S (AMS1 SW Slope)," and "R (AMS1 SW Release)."

With a setting of 0, the times specified by "Filter1 EG" (4.1-5a) will be used.

If "AMS1 (Time Mod. AMS1)" is set to **Velocity**, **positive (+)** values of this parameter will cause EG times to lengthen as you play more strongly, and **negative (-)** values will cause EG times to shorten as you play more strongly.

With a setting of 0, the times specified by "Filter1 EG" will be used.

A (AMS1 SW Attack) [-, 0, +]

Specifies the direction in which "AMS1 (Time Mod. AMS1)" will affect the attack time. With **positive (+)** values of "I (AMS1 Intensity)," setting this parameter to + will allow AMS1 to lengthen the time, and setting this parameter to - will allow AMS1 to shorten the time. With a setting of 0 there will be no change.

D (AMS1 SW Decay) [-, 0, +]

Specifies the direction in which "AMS1 (Time Mod. AMS1)" will affect the decay time. With **positive (+)** values of "I (AMS1 Intensity)," setting this parameter to + will allow AMS1 to lengthen the time, and setting this parameter to - will allow AMS1 to shorten the time. With a setting of 0 there will be no change.

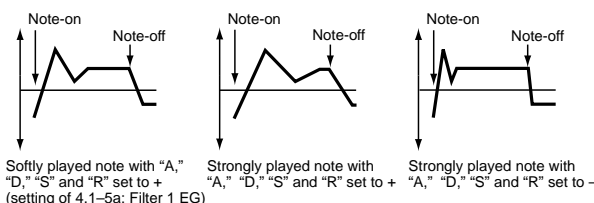
S (AMS1 SW Slope) [-, 0, +]

Specifies the direction in which "AMS1 (Time Mod. AMS1)" will affect the slope time. With **positive (+)** values of "I (AMS1 Intensity)," setting this parameter to + will allow AMS1 to lengthen the time, and setting this parameter to - will allow AMS1 to shorten the time. With a setting of 0 there will be no change.

R (AMS1 SW Release) [-, 0, +]

Specifies the direction in which "AMS1 (Time Mod. AMS1)" will affect the release time. With **positive (+)** values of "I (AMS1 Intensity)," setting this parameter to + will allow AMS1 to lengthen the time, and setting this parameter to - will allow AMS1 to shorten the time. With a setting of 0 there will be no change.

Filter 1 EG changes (Time) (AMS = Velocity, Intensity = a positive (+) value)



AMS2 (Time Mod. AMS2) [Off, (KT, EXT)]

I (AMS2 Intensity) [-99...+99]

A (AMS2 SW Attack) [-, 0, +]

D (AMS2 SW Decay) [-, 0, +]

S (AMS2 SW Slope) [-, 0, +]

R (AMS2 SW Release) [-, 0, +]

These parameters are the settings for "AMS2" to control the "Time" parameters of the filter 1 EG (see "AMS1 (Time Mod. AMS1)"-"R (AMS1 SW Release)").

4.1-5d: UTILITY



Write Program" (1.1-1c), "Copy Oscillator," "Swap Oscillator" (2.1-1d)

For details on how to select the desired utility function, refer to "PROG 1.1-1c: UTILITY."

Sync Both EGs

If you select “Sync Both EGs” from the Utility menu and press the [F8] key, a check mark will appear at the left of “Sync Both EGs.” In this state, the filter 1 EG and the filter 2 EG can be edited simultaneously. (Editing either one will cause the other to change.)

note “Sync Both EGs” cannot sync the filter EG and amp EG independently. For example if you sync in 5.1–3d, it will be synced here as well.

note This can be selected only if “Mode (Oscillator Mode)” (2.1–1a) is **Double**.

PROG 4.2: Ed-Filter2

4.2–1: Basic

4.2–2: Mod.1 (Filter2 Modulation1)

4.2–3: Mod.2 (Filter2 Modulation2)

4.2–4: lfoMod (LFO Modulation)

4.2–5: EG (Filter2 EG) AMSOURCE

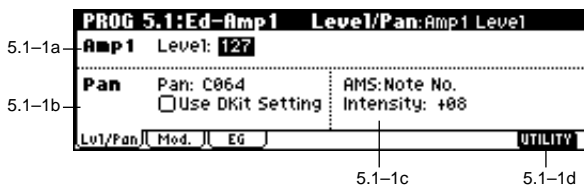
Indicates settings for filter 2, which controls the tone of oscillator 2. You can select either a 24 dB/oct low pass filter with resonance, or a 12 dB/oct low pass filter and 12 dB/oct high pass filter connected in series. Filter 2 can be used when “Mode (Oscillator Mode)” (2.1–1a) is **Double**. (☞“PROG 4.1: Ed-Filter 1”)

PROG 5.1: Ed-Amp1

Indicates settings for amp 1 which controls the volume of oscillator 1. Pan settings are also made here.

5.1–1: Lvl/Pan (Level/Pan)

These parameters control the volume and pan of oscillator 1.



5.1–1a: Amp1 Level

Level (Amp1 Level) [0...127]

Sets the volume of oscillator 1.

MIDI The volume of a program can be controlled by CC#7 (volume) and CC#11 (expression). The resulting level is determined by multiplying the values of CC#7 and CC#11. The Global MIDI channel “MIDI Channel” (GLOBAL 2.1–1a) is used for control.

5.1–1b: Pan

Pan (Amp1 Pan) [Random, L001...C064...R127]

Sets the pan (stereo location) of oscillator 1.

A setting of **L001** places the sound at far left, **C064** in the center, and **R127** to far right.

Random: The sound will be heard from a different location at each note-on.

MIDI This can be controlled by CC#10 (panpot). A CC#10 value of **0** or **1** will place the sound at the far left, a value of **64** will place the sound at the location specified by the “Pan” setting for each oscillator, and a value of **127** will place the sound at the far right. This is controlled on the global MIDI channel “MIDI Channel” (GLOBAL 2.1–1a).

Use DKit Setting [Off, On]

This is valid when “Mode (Oscillator Mode)” (2.1–1a) is set to **Drums**.

On (checked): The sound will be output at the “Pan” setting that has been made for each key of the drum kit (GLOBAL 5.1–3a). When “Mode (Oscillator Mode)” is **Drums**, you will normally use this setting.

Off (unchecked): All notes will be output as specified by the “Pan (Amp1 Pan)” setting.

5.1–1c: AMS, Intensity

AMS (Pan AMS) [Off, (PEG, FEG, AEG, LFO, KT, EXT)]

Indicates the source that will modify pan (☞p.222 “AMS List”). This change will be relative to the “Pan (Amp1 Pan)” setting.

Intensity [–99...+99]

Specifies the depth of the effect produced by “AMS (Pan AMS).”

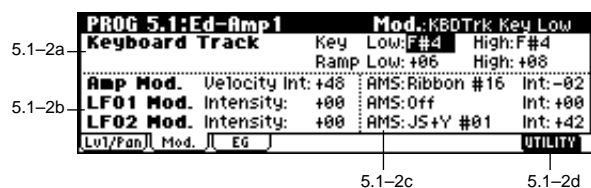
For example, if “Pan (Amp1 Pan)” is set to **C064** and “AMS (Pan AMS)” is **Note Number**, **positive (+) values** of this parameter will cause the sound to move toward the right as the note numbers increase beyond the C4 note (i.e., as you play higher), and toward the left as the note numbers decrease (i.e., as you play lower). **Negative (–) values** of this parameter will have the opposite effect.

■ 5.1–1d: UTILITY

☞ “Write Program” (1.1–1c), “Copy Oscillator,” “Swap Oscillator” (2.1–1d)

5.1–2: Mod. (Amp1 Modulation)

These settings allow you to apply modulation to amp 1 (for oscillator 1) to modulate the volume.



5.1-2a: Keyboard Track

These parameters let you use keyboard tracking to adjust the volume of oscillator 1. Use the “Key” and “Ramp” parameters to specify how the volume will be affected by the keyboard location that you play.

Key (Keyboard Track Key):

Specifies the note number at which keyboard tracking will begin to apply.

The volume will not change between “Low (KBDTrk Key Low)” and “High (KBDTrk Key High).”

note You can also input a value by playing a note on the keyboard while you hold down the [ENTER] key.

Low (KBDTrk Key Low) [-99...+99]

Keyboard tracking will apply to the range of notes below the note number you specify here.

High (KBDTrk Key High) [-99...+99]

Keyboard tracking will apply to the range of notes above the note number you specify here.

Ramp (Ramp Setting):

Specifies the angle of the keyboard tracking.

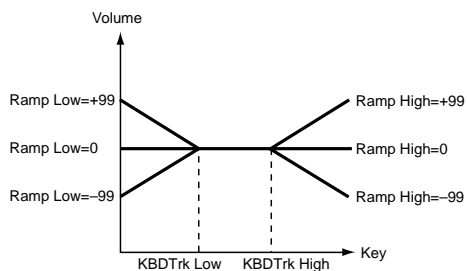
Low (KBDTrk Ramp Low) [-99...+99]

With **positive (+) values** of this parameter, the volume will increase as you play notes below the “Low (KBDTrk Key Low)” note number. With **negative (-) values**, the volume will decrease.

High (KBDTrk Ramp High) [-99...+99]

With **positive (+) values** of this parameter, the volume will increase as you play notes above the “High (KBDTrk Key High)” note number. With **negative (-) values**, the volume will decrease.

Volume change produced by keyboard location and Ramp settings



5.1-2b: Amp Mod., LFO1 Mod., LFO2 Mod.

Indicates settings to specify how the volume of oscillator 1 will be controlled by velocity, OSC1 LFO1, and OSC1 LFO2.

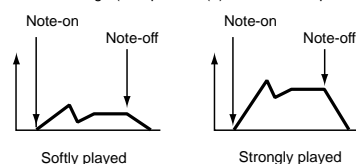
Amp Mod. (Amp Modulation):

Velocity Int. (Amp Velocity Int.) [-99...+99]

With **positive (+) values**, the volume will increase as you play more strongly.

With **negative (-) values**, the volume will decrease as you play more strongly.

Volume change (with positive (+) values of this parameter)



LFO1 Mod. (LFO1 Modulation):

Intensity (LFO1 Intensity) [-99...+99]

These parameters let you use “OSC1 LFO1” (5.3-1) to control the oscillator 1 volume.

Negative (-) values will invert the LFO waveform.

LFO2 Mod. (LFO2 Modulation):

Intensity (LFO2 Intensity) [-99...+99]

Specifies the depth and direction of the effect that “OSC1 LFO2” (5.3-2) will have on the volume of oscillator 1. Refer to the preceding sections “LFO1 Mod. (LFO1 Modulation).”

5.1-2c: AMS, Int.

AMS (Amp AMS) [Off, (PEG, FEG, EXT)]

Indicates the source that will control the volume of amp 1 (see p.222 “AMS List”) (EXT) **Velocity** cannot be selected.

Int. (AMS Intensity) [-99...+99]

Specifies the depth and direction of the effect that “AMS (Amp AMS)” will have.

The actual volume will be determined by multiplying the value of the changes produced by the amp EG with the values of Alternate Modulation etc., and if the levels of the amp EG are low, the modulation applied by Alternate Modulation will also be less.

For example, if you set “AMS (Amp AMS)” to **AfterT** and press down on the keyboard, the volume will increase if you have set this parameter to a **positive (+) value**. However if the volume is already at maximum due to the EG settings etc., it will not be possible to increase the volume any further. If you have set this parameter to a **negative (-) value**, pressing down on the keyboard will decrease the volume.

AMS (LFO1 AMS) [Off, (PEG, FEG, AEG, KT, EXT)]

Indicates a source that will control the depth by which “OSC1 LFO1” will modulate the volume of oscillator 1 (see p.222 “AMS List”).

Int. (AMS Intensity) [-99...+99]

Specifies the depth and direction of the effect that “OSC1 LFO1” will have on the volume of oscillator 1. **Negative (-) values** will invert the LFO waveform.

AMS (LFO2 AMS) [Off, (PEG, FEG, AEG, KT, EXT)]

Indicates a source that will control the depth by which “OSC1 LFO2” will modulate the volume of oscillator 1 (see p.222 “AMS List”).

Int. (AMS Intensity) [-99...+99]

Specifies the depth and direction of the effect that “OSC1 LFO2” will have on the volume of oscillator 1. **Negative (-) values** will invert the LFO waveform.

■ 5.1-2d: UTILITY

“Write Program” (1.1-1c), “Copy Oscillator,” “Swap Oscillator” (2.1-1d)

5.1-3: EG (Amp 1 EG) AMSSource

Indicates settings to specify how Amp 1 will cause the volume of oscillator 1 to change over time.

5.1-3a

5.1-3b

PROG 5.1:Ed-Amp1 EG:Start Level

L 5:499 A:+99 B:+85 S:+00

T A:+38 D:+85 S:+83 R:+44

Level Mod.	Time Mod.				
AMS:Velocity	AMS1:Note No.	I:+03	A:0	D:-	S:0 R:0
I:+02 S:- A:+ B:+	AMS2:Velocity	I:+03	A:0	D:+	S:+ B:0

5.1-3c 5.1-3d

5.1-3a: Amp 1 EG

These parameters specify how the amp 1 EG will change over time.

L (Level):

S (Start Level) [00...99]

Specifies the volume level at note-on. If you want the note to begin at a loud level, set this to a high value.

A (Attack Level) [00...99]

Specifies the volume level that will be reached after the attack time has elapsed.

B (Break Point Level) [00...99]

Specifies the volume level that will be reached after the decay time has elapsed.

S (Sustain Level) [00...99]

Specifies the volume level that will be maintained from after the slope time has elapsed until note-off occurs.

Time:

A (Attack Time) [00...99]

Specifies the time over which the volume will change after note-on until it reaches the attack level. If the start level is 0, this will be the rise time of the sound.

D (Decay Time) [00...99]

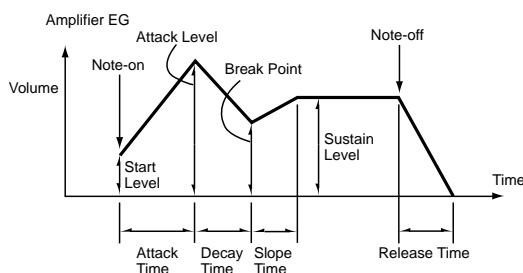
Specifies the time over which the volume will change from when it reaches the attack level until it reaches the break point level.

S (Slope Time) [00...99]

Specifies the time over which the volume will change from when it reaches the break point level until it reaches the sustain level.

R (Release Time) [00...99]

Specifies the time over which the volume will change after note-off until it reaches 0.



5.1-3b: Level Mod. (Level Modulation)

These parameters let you use AMS to control the amp 1 EG levels that were specified in "Amp 1 EG" (5.1-3a).

AMS (Level Mod. AMS) [Off, (KT, EXT)]

Selects the source that will control the "Level" parameters of the amp 1 EG (see p.222 "AMS List").

I (AMS Intensity) [-99...+99]

Specifies the depth and direction of the effect that "AMS (Level Mod. AMS)" will have. For example, if "AMS (Level Mod. AMS)" is **Velocity**, setting "S (AMS SW Start)," "A (AMS SW Attack)," and "B (AMS SW Break)" to + and setting "Intensity" to a **positive (+) value** will cause the amp 1 EG volume levels to increase as you play more strongly. Setting "Intensity" to a **negative (-) value** will cause the amp 1 EG volume levels to decrease as you play more strongly. With a setting of 0, the levels will be as specified in "Amp 1 EG" (5.1-3a).

S (AMS SW Start) [-, 0, +]

Specifies the direction in which "AMS (Level Mod. AMS)" will change "S (Start Level)." If "I (AMS Intensity)" is set to a **positive (+) value**, setting this parameter to + will allow AMS to increase the EG level, and setting this parameter to - will allow AMS to decrease the EG level. With a setting of 0, no change will occur.

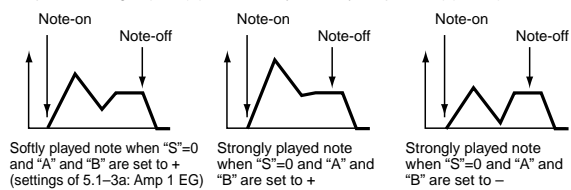
A (AMS SW Attack) [-, 0, +]

Specifies the direction in which "AMS (Level Mod. AMS)" will change "A (Attack Level)." If "I (AMS Intensity)" is set to a **positive (+) value**, setting this parameter to + will allow AMS to increase the EG level, and setting this parameter to - will allow AMS to decrease the EG level. With a setting of 0, no change will occur.

B (AMS SW Break) [-, 0, +]

Specifies the direction in which "AMS (Level Mod. AMS)" will change "B (Break Point Level)." If "I (AMS Intensity)" is set to a **positive (+) value**, setting this parameter to + will allow AMS to increase the EG level, and setting this parameter to - will allow AMS to decrease the EG level. With a setting of 0, no change will occur.

Amp 1 EG changes (Level) (AMS=Velocity, Intensity = a positive (+) value)



5.1-3c: Time Mod. (Time Modulation)

You can use two AMS sources to control the Amp 1 EG times that were specified in "Amp 1 EG" (5.1-3a).

AMS1 (Time Mod. AMS1) [Off, (EXT, KT)]

Selects the source that will control the "Time" parameters of Amp 1 EG. (see p.222 "AMS List")

I (AMS1 Intensity) [-99...+99]

Specifies the depth and direction of the effect that "AMS1 (Time Mod. AMS1)" will have. For example, if "AMS1 (Time Mod. AMS1)" is **Amp KT +/-**, the (Amp) "Keyboard Track" settings (5.1-2a) will control the EG "Time" parameters. With **positive (+) values** of this parameter, **positive (+) values** of "Ramp (Ramp Setting)" will cause EG times to be lengthened, and **negative (-) values** of "Ramp (Ramp Setting)" will cause EG times to be shortened. The direction of the change is specified by "A (AMS1 SW Attack)," "D (AMS1 SW Decay)," "S (AMS1 SW Slope)," and "R (AMS1 SW Release)." When "AMS1 (Time Mod. AMS1)" is **Velocity**, **positive (+) values** will cause EG times to lengthen as you play more strongly, and **negative (-) values** will cause EG times to shorten as you play more strongly. With a setting of **0**, the EG times will be as specified in "Amp1 EG" (5.1-3a).

A (AMS1 SW Attack) [-, 0, +]

Specifies the direction of the effect that "AMS1 (Time Mod. AMS1)" will have on "A (Attack Time)." With **positive (+) values** of "I (AMS1 Intensity)," setting this parameter to + will allow AMS1 to lengthen the time, and setting it to - will allow AMS1 to shorten the time. With a setting of **0** there will be no effect.

D (AMS1 SW Decay) [-, 0, +]

Specifies the direction of the effect that "AMS1 (Time Mod. AMS1)" will have on "D (Decay Time)." With **positive (+) values** of "I (AMS1 Intensity)," setting this parameter to + will allow AMS1 to lengthen the time, and setting it to - will allow AMS1 to shorten the time. With a setting of **0** there will be no effect.

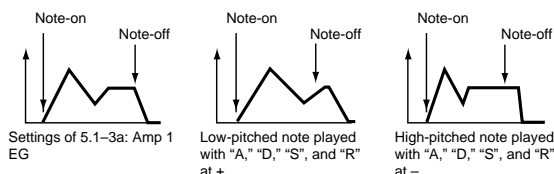
S (AMS1 SW Slope) [-, 0, +]

Specifies the direction of the effect that "AMS1 (Time Mod. AMS1)" will have on "S (Slope Time)." With **positive (+) values** of "I (AMS1 Intensity)," setting this parameter to + will allow AMS1 to lengthen the time, and setting it to - will allow AMS1 to shorten the time. With a setting of **0** there will be no effect.

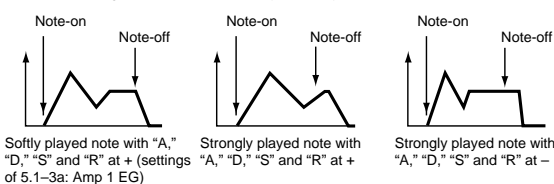
R (AMS1 SW Release) [-, 0, +]

Specifies the direction of the effect that "AMS1 (Time Mod. AMS1)" will have on "R (Release Time)." With **positive (+) values** of "I (AMS1 Intensity)," setting this parameter to + will allow AMS1 to lengthen the time, and setting it to - will allow AMS1 to shorten the time. With a setting of **0** there will be no effect.

Amp 1 EG changes (Time)
(AMS=Amp KTrk +/-, Intensity = a positive (+) value)
(When Amp Keyboard Track (5.1-2a) Low Ramp = a positive (+) value, and High Ramp = a positive (+) value)



Amp 1 EG changes (Time) (AMS=Velocity, Intensity= a positive (+) value)



AMS2 (Time Mod. AMS2) [Off, (EXT, KT)]

I (AMS2 Intensity) [-99...+99]

A (AMS2 SW Attack) [-, 0, +]

D (AMS2 SW Decay) [-, 0, +]

S (AMS2 SW Slope) [-, 0, +]

R (AMS2 SW Release) [-, 0, +]

These parameters specify how "AMS2 (Time Mod. AMS2)" will control the amp 1 EG "Time" parameters (see "AMS1 (Time Mod. AMS1)" - "R(AMS1 SW Release)").

■ **5.1-3d: UTILITY**



see "Write Program" (1.1-1c), "Copy Oscillator," "Swap Oscillator" (2.1-1d)

For details on how to select the desired utility function, refer to "PROG 1.1-1c: UTILITY."

Sync Both EGs

If you select "Sync Both EGs" from the Utility menu and press the [F8] key, a check mark will appear at the left of "Sync Both EGs." In this state, the amp 1 EG and the amp 2 EG can be edited simultaneously. (Editing either one will cause the other to change.) (see 4.1-5d **note**)

PROG 5.1: Ed-Amp

This page is displayed if the separately sold EXB-MOSS option is installed.
(see EXB-MOSS owner's manual & p.269 "EXB-MOSS option")

PROG 5.2: Ed-Amp2

Indicates settings for amp 2 which controls the volume of oscillator 2. Pan settings are also made here.

5.2-1: Lvl/Pan (Level/Pan)

5.2-2: Mod. (Amp2 Modulation)

5.2-3: EG (Amp2 EG) **AMSource**

These will appear when "Mode (Oscillator Mode)" (2.1-1a) is **Double**. (see "5.1: Ed-Amp1")

PROG 5.2: Ed-EGs

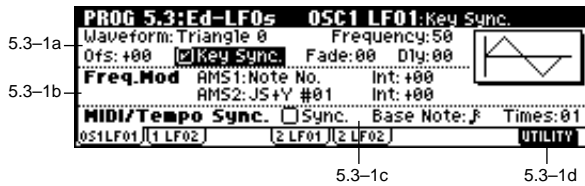
This page is displayed if the separately sold EXB-MOSS option is installed.
(see EXB-MOSS owner's manual & p.269 "EXB-MOSS option")

PROG 5.3: Ed-LFOs

Here you can make settings for the LFO that can be used to cyclically modulate the Pitch, Filter, and Amp of oscillators 1 and 2. There are two LFO units for each oscillator. By setting the LFO1 or LFO2 Intensity to a **negative (-) value** for Pitch, Filter, or Amp, you can invert the LFO waveform.

5.3-1: OSC1 LFO1 (OSC1 LFO1) AMSource

Indicates settings for the “OSC1 LFO1,” which is the first LFO that can be used for oscillator 1.



5.3-1a: OSC1 LFO1

Waveform [Triangle 0...Random6 (Vect.)]

Selects the LFO waveform.

The numbers that appear at the right of some of the LFO waveforms indicate the phase at which the waveform will begin.

Triangle 0		Step Triangle - 4	
Triangle 90		Step Triangle - 6	
Triangle Random		Step Saw - 4	
Saw 0		Step Saw - 6	
Saw 180			
Square			
Sine			
Guitar			
Exp. Triangle			
Exp. Saw Down			
Exp. Saw Up			

Phase will change randomly at each key-in

Sawtooth down ↓

Random1 (S/H):
Conventional sample & hold (S/H) in which the level changes randomly at fixed intervals of time

Random2 (S/H):
Both the levels and the time intervals will change randomly.

Random3 (S/H):
The maximum level and minimum level will alternate at random intervals of time (i.e., a square wave with random period).

Random4 (Vect.)
Random5 (Vect.)
Random6 (Vect.)
These types cause Random 1-3 to change smoothly. They can be used to simulate the instability of acoustic instruments etc.

Frequency [00...99]

Sets the LFO frequency. A setting of 99 is the fastest.

Ofs (Offset) [-99...+99]

Specifies the central value of the LFO waveform. For example, with a setting of 0 as shown in the following diagram, the vibrato that is applied will be centered on the note-on pitch. With a setting of +99, the vibrato will only raise the pitch above the note-on pitch, in the way in which vibrato is applied on a guitar.

When “Waveform” is set to **Guitar**, the modulation will occur only in the positive (+) direction even if you set “Offset” to 0.

Offset settings and pitch change produced by vibrato



Key Sync. [Off, On]

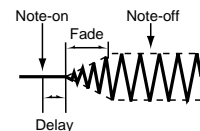
On (checked): Key Sync. will be **On**. The LFO will start each time you play a note, and an independent LFO will operate for each note.

Off (unchecked): Key Sync. will be **Off**, and the LFO effect that was started by the first-played note will continue to be applied to each newly-played note. (In this case, Delay and Fade will be applied only to the LFO when it is first started.)

Fade [00...99]

Specifies the time from when the LFO begins to apply until it reaches the maximum amplitude. When “Key Sync.” is **Off**, the fade will apply only when the LFO is first started.

How “Fade” affects the LFO (when “Key Sync.” is **On**)



Dly (Delay) [0...99]

Specifies the time from note-on until the LFO effect begins to apply.

When “Key Sync.” is **Off**, the delay will apply only when the LFO is first started.

5.3-1b: Freq.Mod (Frequency Modulation)

You can use two alternate modulation sources to adjust the speed of the OSC1 LFO1.

AMS1 (Freq. AMS1) [Off, (PEG, FEG, AEG, LFO2, KT, EXT)]

Indicates the source that will adjust the frequency of the oscillator 1 LFO1 (see p.222 “AMS List”). OSC1 LFO1 can be modulated by OSC1 LFO2.

Int (AMS1 Intensity) [-99...+99]

Specifies the depth and direction of the effect that “AMS1 (Freq. AMS1)” will have.

When this parameter is set to a value of 16, 33, 49, 66, 82, or 99, the LFO frequency being can be increased by a maximum of 2, 4, 8, 16, 32, or 64 times respectively (or decreased by 1/2, 1/4, 1/8, 1/16, 1/32, or 1/64 respectively).

For example, if “AMS1 (Freq. AMS1)” is **Note No., positive (+) values** of this parameter will cause the oscillator 1 LFO to speed up as you play higher notes. **Negative (-) values** will cause the oscillator 1 LFO to slow down as you play higher notes. This change will be centered on the C4 note. If “AMS1 (Freq. AMS1)” is set to **JS +Y #01**, raising the value of this parameter will cause the oscillator 1 LFO1 speed to increase as the joystick is moved away from yourself. With a setting of +99, moving the joystick all the way away from yourself will increase the LFO speed by approximately 64 times.

AMS2 (Freq. AMS2) [Off, (PEG, FEG, AEG, LFO2, KT, EXT)]

Int (AMS2 Intensity) [-99...+99]

Indicates settings for a second alternate modulation source that will adjust the frequency of the oscillator 1 LFO1.

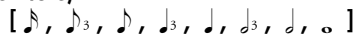
see “AMS1 (Freq. AMS1),” “Int. (AMS1 Intensity)”

5.3-1c: MIDI/Tempo Sync. (Frequency MIDI/Tempo Sync.)

Sync. (MIDI/Tempo Sync.) [Off, On]

On (checked): The LFO frequency will synchronize to the tempo (MIDI Clock). In this case, the values you specified for “Frequency” (5.3-1a) and “Freq.Mod” (5.3-1b) will be ignored.

Base Note (Sync. Base Note)



Times (Sync. Times) [01...16]

When “Sync. (MIDI/Tempo Sync.)” is checked, these parameters specify a note length “Base Note (Sync. Base Note)” relative to “♩ (Tempo)” and the multiple “Times (Sync. Times)” that will be applied to it. These parameters will determine the frequency of the OSC1 LFO1. For example if “Base Note (Sync. Base Note)” is ♩ (quarter note) and “Times (Sync. Times)” is 04, the LFO will perform one cycle every four beats.

Even if you change the “♩ (Tempo)” setting of the KARMA function, the LFO will always perform one cycle every four beats.

5.3-2: 1LFO2 (OSC1 LFO2)

Here you can make settings for the OSC1 LFO2, which is the second LFO that can be applied to oscillator 1. (☞ “5.3-1: OS1LFO1 (OSC1 LFO1)”) However, it is not possible to use the LFO to apply modulation in “AMS1 (Freq. AMS1)” or “AMS2 (Freq. AMS2)” of Freq. Mod.

5.3-3: 2LFO1 (OSC2 LFO1)

This can be used when “Mode (Oscillator Mode)” (2.1-1a) is set to **Double**. Here you can make settings for the OSC2 LFO1, which is the first LFO that can be applied to oscillator 2 (☞ “5.3-1: OS1LFO1 (OSC1 LFO1)”).

5.3-4: 2LFO2 (OSC2 LFO2)

This can be used when “Mode (Oscillator Mode)” (2.1-1a) is set to **Double**. Here you can make settings for the OSC2 LFO2, which is the second LFO that can be applied to oscillator 2 (☞ “5.3-1: OS1LFO1 (OSC1 LFO1)” and “5.3-2: OS1LFO2 (OSC1 LFO2)”).

■ 5.3-1d: UTILITY



☞ “Write Program” (1.1-1c)

For details on how to select the desired utility function, refer to “PROG 1.1-1c: UTILITY.”

Swap LFO 1&2

This exchanges the settings of LFO 1 and 2. If LFO2 is selected in AMS1 (Freq. AMS1) or AMS2 (Freq. AMS2) of LFO1 Freq.Mod (5.3-1b), the settings will be invalid for LFO2 after LFO1 and 2 have been exchanged. If you select this from the OSC1 LFO1 or OSC1 LFO2 page, LFO1 and LFO2 of OSC1 will be exchanged.

- ① Select “Swap LFO 1&2” to access the dialog box.
- ② To execute, press the [F8] (“OK”) key. To cancel without executing, press the [F7] (“Cancel”) key.

PROG 6.1: Ed-KARMA

Here you can make KARMA function settings for use by the program. In Program mode you can use one KARMA module (module [A]).

When you switch programs, these settings will automatically be rewritten to the KARMA settings stored in that program. (☞ GLOBAL 1.1-1c: System Basic, Auto KARMA "Program": On)

The KARMA function can be turned on/off by the KARMA real-time controls [ON/OFF] key.

The state of the KARMA real-time controls [LATCH] [SCENE] keys, switches [1]/[2], and knobs [1]-[8], and the note settings/velocity of the CHORD TRIGGER [1]-[4] keys can be saved in each program.

⚠ In order for these settings to be valid, GLOBAL 1.1-1c: System Basic, Auto KARMA "Program" must be On.

note The PROG 6.1-1: Setup page parameters can also be set from the PROG 1.1-3: KARMA page.

6.1-1: Setup

Here you can select the GE used by the KARMA module, and make key zone and MIDI filter settings for the KARMA module.



6.1-1a: ♩ (Tempo)

Specifies the tempo at which the KARMA function will operate. (☞ p.3)

6.1-1b: GE Setup

GE Category [00: name ...]

This displays the category of the currently selected GE. (☞ p.5)

GE Select [0000: Arp Model 1 Up/Dn...]

Indicates the GE. (☞ p.3)

Init K.RTC (KARMA Real-time Controls-Use GE's Value) [Off, On]

Specifies whether the settings of the KARMA real-time controls knobs [1]-[8] and switches [1]/[2] will be initialized when you select a GE.

This allows you to hear the original state of the phrase or pattern produced by the GE. Normally you will turn this On when selecting a GE. (☞ p.5)

6.1-1c: UTILITY



☞ "Write Program" (1.1-1c), "Select by Category" (1.1-3b)

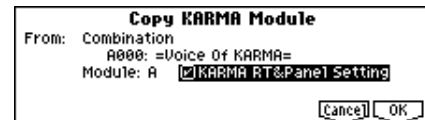
For details on how to select the desired utility, refer to "PROG 1.1-1c: UTILITY."

Copy KARMA Module

This command copies the settings of the KARMA module used by a specified program, combination, song, or song play.

⚠ The "Input Channel" and "Output Channel" (6.2-1a) settings of combination, song, or song play will not be copied.

① Select "Copy KARMA Module" to access the dialog box.



② In "From," select the copy source mode, bank, and number.

You can press a Bank [A]-[G] key to select the bank.

③ If the copy source is a combination, song, or song play, you can also select the module that will be copied.

④ If you wish to copy KARMA RT parameters and KARMA real-time CONTROLS settings as well, check "KARMA RT&Panel Setting."

Settings copied by "KARMA RT&Panel Setting"

- [ON/OFF] key setting
- [LATCH] key setting
- CHORD TRIGGER [1]-[4] key settings
- SCENE [1], [2] key settings
- KARMA real-time CONTROLS knobs [1]-[8], switches [1]/[2] settings
- PROG 6.4: Ed-KARMA RT settings (RTParm, DynMIDI, Name)

⑤ To execute the copy, press the [F8] ("OK") key. To cancel without executing press the [F7] ("Cancel") key.

Init KARMA Module (Initialize KARMA Module)

This command initializes the settings of the KARMA module.

⚠ The GE selection will not be initialized. The GE parameter "Values" will be set to the default values that are preset for the selected GE.

① Select "Init KARMA Module" to access the dialog box.



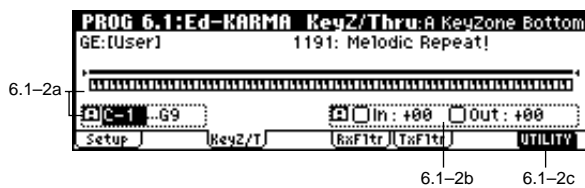
② If you also wish to initialize the KARMA RT parameters and KARMA real-time Controls settings, check "KARMA RT&Panel Setting."

Settings that are initialized by "KARMA RT&Panel Setting"

- 6.4: Ed-KARMA RT settings (RTParm, DynMIDI, Name)
- KARMA real-time Controls knobs [1]-[8], switches [1]/[2], [SCENE] key, [LATCH] key settings
- CHORD TRIGGER [1]-[4] key settings

③ To initialize the settings, press the [F8] ("OK") key. To cancel without initializing, press the [F7] ("Cancel") key.

6.1-2: Key Z/T (KeyZ/Thru)



6.1-2a: Zone Map, KeyZone Bottom, KeyZone Top

The KARMA module is controlled by note data in numerous ways, including the variation of phrase or pattern produced by the GE, by trigger, and by chord detection. Here you can specify the range of note data (key zone) that will control the KARMA module.

MIDI In Program mode, all MIDI data for the KARMA module is transmitted and received on the Global MIDI channel "MIDI Channel" (GLOBAL 2.1-1a).

Zone Map



A solid line indicates the specified key zone. Notes and messages from the MIDI IN connector within this zone will be input to the KARMA module.

KeyZone Bottom [C-1...G9]

Specifies the bottom key (lower limit) of the key zone.

KeyZone Top [C-1...G9]

Specifies the top key (upper limit) of the key zone.

note These parameters can also be set by holding down the [Enter] key and pressing a note.

6.1-2b: Thru In Zone, Transpose InZ, Thru Out Zone, Transpose OutZ

Specifies whether note data from the keyboard within or outside of the key zone (6.1-2a) will be played while the KARMA module plays phrases or patterns.

Thru In Zone [Off, On]

On (checked): Note data from keys within the key zone will be input to the KARMA module, and will also be input directly to the tone generator. When you play a key within the key zone, the phrase or pattern generated by the KARMA module will sound, as will the note itself.

Off (unchecked): Only the phrase or pattern generated by KARMA will sound. Keys played within the key zone will not sound.

Transpose InZ [-36...+36]

Specifies the transpose setting applied to note data from within the key zone. Make this setting if you wish to apply a transposition in semitone steps to the pitch of notes played from the keyboard when "Thru In Zone" is **On**.

Thru Out Zone [Off, On]

On (checked): Note data from keys outside the key zone will be input directly to the tone generator. (They will not be input to the KARMA module, since they are outside the key zone.) When you play keys outside the key zone, the tone generator will sound.

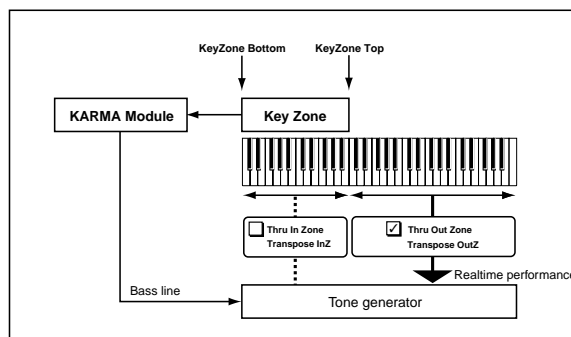
Off (unchecked): The tone generator will not sound even if you play keys outside the key zone.

Transpose OutZ [-36...+36]

Specifies the transpose setting applied to note data from keys outside the key zone. Make this setting if you wish to apply a transposition in semitone steps to the pitch of notes played from conventionally from the keyboard when "Thru Out Zone" is **On**. You could select a bass program and make the settings shown below.

Example

Using the KARMA module to control the bass line in the lower range of the keyboard, and playing in real-time in the upper range.



6.1-2c: UTILITY

☞ "Write Program" (1.1-1c), "Copy KARMA Module," "Init KARMA Module" (6.1-1c), "Select by Category" (1.1-3b)

6.1-3: RxFltr (Receive Filter)

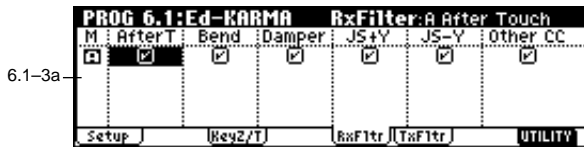
Specifies whether filters will be applied to the MIDI control data received by the KARMA module before it is passed on (echoed) to the tone generator.

On (checked): The corresponding MIDI data will be echoed to the tone generator.

Off (unchecked): The corresponding MIDI data will not be echoed to the tone generator.

When the KARMA module is **on**, the MIDI control data received by the KARMA module will be transmitted to the tone generator without change. Depending on these settings, you can (for example) make settings so that the damper pedal is enabled when the KARMA module is **off**, and disabled when it is **on**. (See the diagram below, "KARMA Rx/Tx Filter.")

⚡ These settings do not affect the Dynamic MIDI (PROG 6.4-3) settings. If you have specified MIDI control data as the Dynamic MIDI source, it will be valid regardless of these settings.



6.1-3b

6.1-3a: Rx Filter

AfterT (After Touch) [Off, On]

Specifies whether MIDI aftertouch messages will be echoed to the tone generator.

Bend (Pitch Bend) [Off, On]

Specifies whether MIDI pitch bend messages will be echoed to the tone generator.

Damper (Damper CC#64) [Off, On]

Specifies whether MIDI control change message #64 Hold (damper pedal) will be echoed to the tone generator.

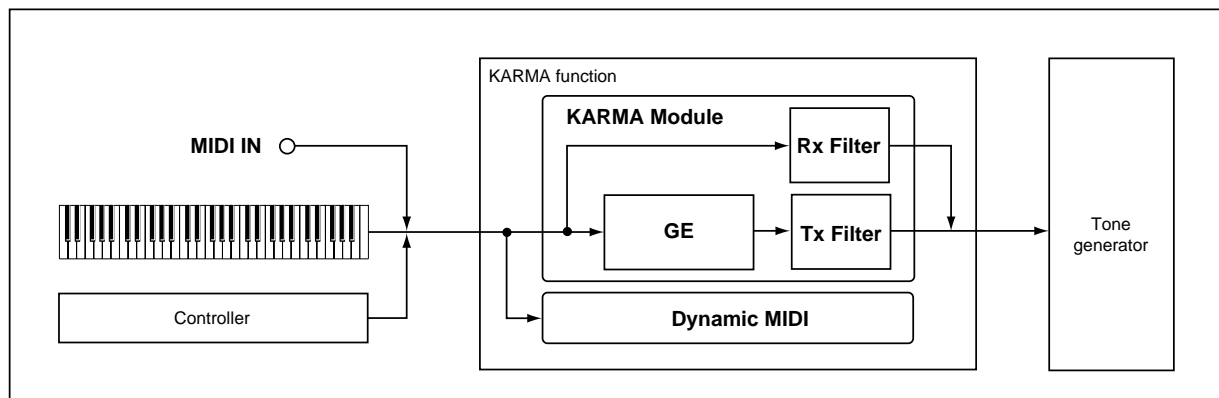
JS+Y (JS+Y CC#01) [Off, On]

Specifies whether MIDI control change message #1 (internal joystick +Y direction, or specified as the B-assignment of a real-time control knob) will be echoed to the tone generator.

JS-Y (JS-Y CC#02) [Off, On]

Specifies whether MIDI control change message #2 (internal joystick -Y direction, or specified as the B-assignment of a real-time control knob) will be echoed to the tone generator.

KARMA Rx/Tx Filter



Other CC

[Off, On]

Specifies whether MIDI control change messages other than the above will be echoed to the tone generator.

6.1-3b: UTILITY

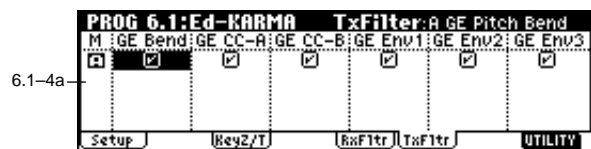
⚡ "Write Combination" (1.1-1c), "Copy KARMA Module," "Init KARMA Module" (6.1-1c), "Select by Category" (1.1-3b)

6.1-4: TxFltr (Transmit Filter)

Specifies whether filtering will be applied to the MIDI control data produced by the GE selected for the KARMA module. (See the diagram below, "KARMA Rx/Tx Filter.")

On (checked): The corresponding MIDI data will be transmitted from the KARMA module.

Off (unchecked): The corresponding MIDI data will not be transmitted from the KARMA module.



6.1-4b

6.1-4a: Tx Filter

The GE can also automatically produce pitch bend and various types of control change data in addition to note data. Three envelope generators can also be used to apply time-variant change to velocity, tempo, duration, and various control changes such as pitch bend, JS +Y (CC#1) etc.

GE parameter group: (⚡GE Guide)

Bend: Automatically generate pitch bend data in synchronization with the phrase or pattern.

CCs: Automatically generate the two control changes specified by CC-A and CC-B.

Envelopes: Use Envelope 1, Envelope 2, and Envelope 3 to automatically generate velocity, tempo, duration, or control changes such as pitch bend, JS +Y (CC#1) etc.

The data that is output will depend on the settings of the parameters for the selected GE. For example, transmitting/filtering pitch bend will produce no result if the GE has not been designed to produce pitch bend data.

GE Bend (GE Pitch Bend) [Off, On]

Specifies whether to transmit the MIDI pitch bend messages produced by the GE selected for the KARMA module.

note This setting also applies to the pitch bend messages produced by CC-A, CC-B, Envelope 1, Envelope 2, and Envelope 3.

! When KARMA function is **on** and the KARMA module is producing pitch bend data, the pitch bend range of the program will be controlled as follows.

The pitch bend range specified within KARMA GE will automatically be transmitted from the KARMA module, and set within the program. This ensures that the pitch bend data produced by the GE of the KARMA will function correctly. At this time, in most cases the pitch bend data, the pitch bend data produced when you operate the joystick will automatically be optimized so that it will produce the same bend effect as if KARMA were off. (In the case of a program whose "OSC Mode" is **Double**, and whose OSC 1 and 2 "Pitch JS (+X) and JS (-X)" settings differ, the pitch bend will be adjusted for OSC 1.)

GE CC-A/GE CC-B [Off, On]

Specifies whether to transmit the various MIDI messages produced by CC-A/CC-B of the GE selected by the KARMA module.

However if CC-A/CC-B are producing pitch bend messages, these settings will be ignored, and the "GE Bend" setting will be used.

GE Env.1/GE Env.2/GE Env.3 [Off, On]

Specifies whether to transmit the various MIDI messages produced by Envelope 1, Envelope 2, and Envelope 3 of the GE selected by the KARMA module. However if Envelope 1, Envelope 2, or Envelope 3 are producing pitch bend messages, these settings will be ignored, and the "GE Bend" setting will be used.

6.1-4b: UTILITY

! "Write Program" (1.1-1c), "Copy KARMA Module," "Init KARMA Module" (6.1-1c), "Select by Category" (1.1-3b)

PROG 6.2: Ed-KARMA Mdl

Here you can set KARMA module parameters. In Program mode, you can use one KARMA module (module [A]).

6.2-1: Parm 1 (Parameter 1)

PROG 6.2:Ed-KARMA Mdl Parm1:Transpose		Tx.CC	Value
Module Parameters		021	127
Transpose: 127	<input checked="" type="checkbox"/> Quantize Trig	Off	000
Force Range: Off	<input type="checkbox"/> Root Position	Off	000
Delay Start: Off		Off	000

6.2-1a 6.2-1b 6.2-1c 6.2-1d

6.2-1a: Module Parameters

Transpose [-36...+36]

Controls the pitch of the phrases or chords produced by the KARMA module, in semitone steps.

The note data from the keyboard or the MIDI IN connector will be input to the KARMA module. ("KeyZone Bottom," "KeyZone Top" (6.1-2a)). Here you can transpose the pitch (in semitone steps) of the note data that is input to the KARMA module.

Force Range

[Off, Lowest, Highest, C3-B3[1], C3-B3[2]]

Control the pitch range of the phrases or chords produced by the KARMA module.

Note data from the keyboard or the MIDI IN connector will be input to the KARMA module ("KeyZone Bottom," "KeyZone Top" (6.1-2a), "Transpose" (6.2-1a)). Here you can make settings so that the note data input to the KARMA module is forcibly restricted to a specific range.

Off: The input notes will be sent to the KARMA module as played, with no further alteration.

Lowest: The input notes will be forcibly restricted to be within one octave of the lowest note.

If you play a chord of E2, E4, G#4, B4, and D#5 (i.e., E Maj7) on the keyboard, the input notes will all be transposed to be within an octave of the lowest note (E2): E2, G#2, B3, and D#3.

Highest: The input notes will be forcibly restricted to be within one octave of the highest note.

If you play a chord of E2, E4, G#4, B4, and D#5 (i.e., E Maj7) on the keyboard, the input notes will all be transposed to be within an octave of the highest note (D#5): E4, G#4, B4, and D#5.

Played on keyboard:

E2 E4 G#4 B4 D#5 (play an EMaj7 chord)



Lowest: input notes transposed to E2 G#2 B3 D#3

Highest: input notes transposed to E4 G#4 B4 D#5

C3-B3[1]: The input notes will be forcibly restricted to be near the middle octave (C3-B3). The lowest note will have the pitch of the lowest note played, and the other input notes will be transposed as far as possible so as to maintain the chord inversion. This is effective when you wish to produce phrases or patterns having a similar inversion to what was played, but in a fixed range regardless of where you are playing on the keyboard.

C3-B3[2]: The input notes will be forcibly restricted to be within the center octave (C3-B3). Since all notes will be forced into the center octave (C3-B3), the chord inversion will change significantly; for example the bass note may change. This is effective when you want to absolutely limit the input notes to a specific octave.

Played on keyboard:

- Play chords in the order of
- E4 G#4 B4 D#5 (EMaj7 first inversion)
- G#4 B4 D#5 E5 (EMaj7 second inversion)
- B4 D#5 E5 G#5 (EMaj7 third inversion)
- D#5 E5 G#5 B5 (EMaj7 fourth inversion)



C3-B3[1]:

- Transpose the input notes to:
- E3 G#3 B3 D#4 (EMaj7 first inversion)
- G#2 B2 D#3 E3 (EMaj7 second inversion)
- B2 D#3 E3 G#3 (EMaj7 third inversion)
- D#3 E3 G#3 B3 (EMaj7 fourth inversion)

C3-B3[2]

- D#3 E3 G#3 B3 (EMaj7/D#)
- D#3 E3 G#3 B3 (EMaj7/D#)
- D#3 E3 G#3 B3 (EMaj7/D#)
- D#3 E3 G#3 B3 (EMaj7/D#)
- (all identical)

Delay Start [Off, Fixed, 4x...

Specify the delay from when the trigger (by note data) is input, until the phrase or pattern starts.

4x... Specify the delay time as a note value interval relative to the tempo.

Fixed: The delay time will be specified in time units (ms). Set the time in "Delay Start Fixed."

Delay Start Fixed [0000 ms ... 5000 ms]

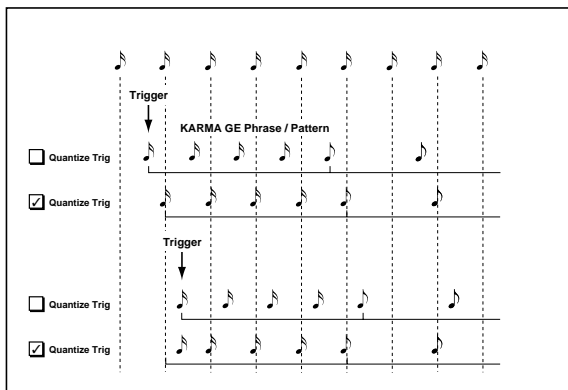
This is valid if "Delay Start" is set to **Fixed**. Set "Delay Start" in ms units.

Quantize Trig [Off, On]

Quantize (correct) the timing of the triggering caused by the note data or Dynamic MIDI.

On (checked): Trigger timing will be quantized in 16th note units relative to the basic tempo.

Off (unchecked): Triggering will occur at the moment you play the keyboard or activate a trigger through Dynamic MIDI.



note When this is **On**, triggering at a timing that is within a 32nd note of the 16th note base value will cause the playback to begin simultaneously (lower row of the preceding diagram). If the trigger is later than this, playback will start at the next 16th note (upper row of the diagram above).

Root Position [Off, On]

The phrases and patterns produced by a KARMA module are generated by a GE (Generated Effect). In most cases, this is done based on a Note Series. When "Root Position" is **On (Checked)**, any "Note Type" (GE parameter: VNL) except

Regular (i.e. Scalic, Scalic 2, etc.), will cause the Note Series to be created in root position, regardless of the inversion of the Chord. In other words, when this is **Off (Unchecked)**, if you play CMaj/E, the Note Series will start from E and continue up, or if you play CMaj/G, the Note Series will start with G. By using "Root Position" **On (Checked)**, you can make sure that any inversion of a chord ends up the same. For example, CMaj/E and CMaj/G will both be the same as CMaj, and the Note Series will start from a C. This can allow a GE to behave more predictably with all inversions of a chord. (GE Guide "Note Series")

note When the GE-Type is **Generated-Drum**, the notes come from Drum Patterns and not the Note Series. The drum patterns can be used to generate melodies, in addition to drum and percussion grooves. "Root Position" also has a similar effect on how the Drum Patterns are transposed, but only if "Drum-Track Keyboard" is **on**. (GE Guide "Drum"). Also when the GE-Type is **Generated-Drum**, if using arpeggiated pitch-bending (based on the Note Series), the resulting pitch bend data will be affected also (GE Guide "Bend"). When the GE-Type is **Real-time**, this parameter has no effect unless you are using Dynamic MIDI to Direct Index the Note Series (p.234 "Dynamic MIDI Sources & Destinations").

6.2-1b: Tx CC (Transmit CC)

When KARMA function is **turned on**, MIDI control change messages are transmitted to the tone generator. Make these settings when you wish to control the program sound or effects etc. when KARMA function is **turned on**.

- Tx CC1 Number** [Off, 000...095]
- Tx CC2 Number** [Off, 000...095]
- Tx CC3 Number** [Off, 000...095]
- Tx CC4 Number** [Off, 000...095]

Selects the MIDI control change message that will be transmitted.

The value of the transmitted message is specified by "Value (Tx CC Value)" (6.2-1c).

If the KARMA [ON/OFF] key is **on**, the specified MIDI control change message will be transmitted when you select a program whose KARMA [ON/OFF] key is **turned on**. If the selected GE produces the control change specified here, the effect of the control change produced by GE will be given priority.

note The MIDI control change messages specified here for transmission and the MIDI control change messages produced by the selected GE when the KARMA [ON/OFF] key is **on** will be reset automatically when the KARMA [ON/OFF] key is **turned off**.

6.2-1c: Value (Tx CC Value)

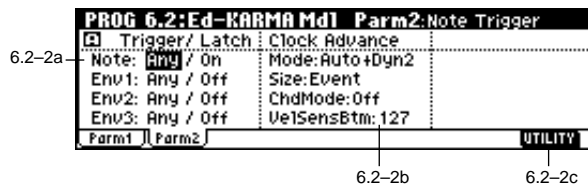
- Value (Tx CC1 Value)** [000...127]
- Value (Tx CC2 Value)** [000...127]
- Value (Tx CC3 Value)** [000...127]
- Value (Tx CC4 Value)** [000...127]

Specifies the value of the message that will be transmitted. This will have no effect if "Tx CC Number" is **Off**.

■ 6.2-1d: UTILITY

☞ “Write Program” (1.1-1c), “Copy KARMA Module,” “Init KARMA Module” (6.1-1c), “Select by Category” (1.1-3b)

6.2-2: Parm2 (Parameter 2)



6.2-2a: Trigger/Latch

Set trigger conditions and latch on/off for the GE selected for the KARMA module. Settings are made independently for Note, Env.1, Env.2, and Env.3.

Note:

Specifies the trigger conditions for the phrase or pattern produced by the GE, and set latch on/off.

Note Trigger [Any, AKR, 1st, Dyn]

note With any of these settings, the trigger will be applied by operations of the controller specified for Dynamic MIDI (6.4-3) (if “Destination” is set to **Trig Nt&Env, Trig Env1...Trig Env3**).
Notes. ☞ p.234 “Dynamic MIDI Sources & Destinations”

Any (Any Note + Dynamic MIDI): Every note-on will cause triggering; i.e., each note-on will cause the phrase or pattern to restart from the beginning.

AKR (1st Note After Key Release + Dynamic MIDI): Triggering will occur when the first note-on occurs from a state in which no keys are “on.” Triggering will not occur if even one note is being pressed. By changing the chord you play on the keyboard while holding at least one note, you can control the phrase or pattern without triggering.

1st (1st Only Until Module Stops + Dynamic MIDI): After KARMA function is turned on, only the first note-on will cause triggering. Subsequent note-ons will not cause triggering.

Dyn (Dynamic MIDI): Triggering will be produced by operating the controller specified by Dynamic MIDI (6.4-3). In this case, note-ons will not cause triggering.

Note Latch [Off, On]

Specifies whether the phrase or pattern will continue when you release your hand from the keyboard (**latch on**) or whether the phrase or pattern will stop (**latch off**). In Program mode, turn this **On** and use the [LATCH] key to control latch on/off.

Off (unchecked): Latch will be off regardless of the [LATCH] key on/off status.

On (checked): The [LATCH] key will control latch on/off. When the [LATCH] key is **off** (LED dark), **latch is off**. When the [LATCH] key is **on** (LED lit), **latch is on**.

note In Combination, Sequencer, and Song Play mode, up to four KARMA modules can be used. In these modes, you can turn “Note Latch” on/off independently for each KARMA module. If you use “Copy KARMA Module” to copy KARMA module settings from these modes to a program, there may be cases in which the setting here will be **off**, so that latch-on will not occur even if you turn **on** the [LATCH] key. In such cases, turn this **on**.

Env1: Env2: Env3:

Each GE provides three Envelopes. They can produce time-variant control of velocity, tempo, duration, pitch bend, and various control changes.

You can specify triggering conditions and latch conditions for each of the three Envelopes of the GE.

⚠ If the selected GE does not use Envelopes, these settings will have no effect.

Env1 Trigger/Env2 Trigger/Env3 Trigger [Any, AKR, 1st, Dyn]

note For any of these settings, triggering will be applied by operations of the controller specified for Dynamic MIDI (6.4-3) (if “Destination” is set to **Trig Nt&Env, Trig Env1...Trig Env3**).

Any (Any Note + Dynamic MIDI): Every note-on will cause triggering; i.e., each note-on will cause the envelope to start from the beginning.

AKR (1st Note After Key Release + Dynamic MIDI): Triggering will occur when the first note-on occurs from a state in which no keys are “on.” Retriggering will not occur if even one note is being pressed.

1st (1st Only Until Module Stops + Dynamic MIDI): After KARMA is turned on, only the first note-on will cause triggering. Subsequent note-ons will not cause triggering.

Dyn (Dynamic MIDI): Triggering will be produced by operating the controller specified by Dynamic MIDI (6.4-3). In this case, note-ons will not cause triggering.

Env1 Latch/Env2 Latch/Env3 Latch [Off, Sus1, Rel1, Sus2, Rel2]

Off: The envelope will not be latched. When all keys are released or a Dynamic MIDI trigger is released (note-off), the envelope will move to the release segment.

Sus1: Once the envelope is started, it will proceed through attack → decay → sustain → release. If note-off occurs before the envelope reaches the sustain level, the envelope will not begin the release immediately but wait until after reaching the sustain level. Even in the case of a note for which the note-on/off interval is short, the envelope will proceed through attack → decay → sustain → release as if the key was being held for a longer time. If the envelope reaches the sustain level before receiving note-off, it will stop at the sustain level (the same operation as for the Off setting). If the note-off occurs after the envelope reaches the sustain level, the envelope will begin the release when note-off occurs (the same operation as for the Off setting).

If the note-off occurs after the envelope reaches the sustain level, the envelope will begin the release when note-off occurs (the same operation as for the Off setting).

Rel1: Once the envelope has started, it will proceed through attack → decay → release, regardless of when the note-off occurs. Even if a key is being pressed, the envelope will ignore sustain, and will proceed immediately to the release.

Sus2: The envelope will ignore note-off, and will proceed through attack → decay → sustain. Therefore, this setting will never reach the release portion. Other operation is the same as for **Sus1**.

Rel2: The same operation as **Rel1**, except will ignore note-off for the purpose of looping, as explained below.

The envelope can be set to repeat as a loop as part of the GE. A looped envelope will be controlled as follows.

For Sus1 and Rel1, the envelope will continue repeating as long as the key is held.

For Sus2 and Rel2, the envelope will continue repeating even if the key is released.

6.2-2b: Clock Advance

Here you can make settings for the clock that will operate the KARMA module. By using these settings in conjunction with the Dynamic MIDI (6.4-3) function, you can use **Manual Advance** by operating controllers such as the joystick to trigger the clock that operates KARMA module, causing the phrase or pattern to advance.

Mode (Clk Adv. Mode) [Auto...Auto+Dyn2]

Auto: The KARMA module will operate according to the "Tempo" (1.1-1a) setting. If "MIDI Clock" (Global 2.1-2a) is External, the KARMA module will operate in synchronization with the MIDI clock from the **External** MIDI device.

Normally you will select **Auto**.

Dyn: The clock by which the KARMA module will operate can be triggered by operating the joystick or other controller according to the Dynamic MIDI (6.4-3) setting, causing the phrase or pattern to advance. (Set Dynamic MIDI (6.4-3a/b/c/d) "Destination" to **Clock Adv.**)

You can input a chord from the keyboard, and use the joystick to "strum" guitar chords, or use note-on/off to advance through the arpeggio pattern.

Auto+Dyn1: The KARMA module will operate according to both **Auto** and **Dyn**.

Auto + Dyn2: The KARMA module will operate according to both **Auto + Dyn**, except that a trigger received from Dynamic MIDI will momentarily stop the automatic advancement until the KARMA module playback is restarted.

Size (Clk Adv. Size) [♩3...♩, Event]

This is valid when "Mode" is **Dyn**, **Auto + Dyn1** or **Auto + Dyn2**. It specifies the unit by which the phrase or pattern will be advanced when the controller is operated.

♩3...♩: The phrase or pattern will be advanced by the specified note value, synchronized to the rhythm of the phrase or pattern.

Event: The phrase or pattern will be advanced by one note or one chord, ignoring the rhythm of the phrase or pattern.

ChdMode (Chord Mode) [Off, 1st,Chrd1, Chrd2, Chrd3]

This is valid when "Mode" is **Dyn**, **Auto + Dyn1** or **Auto + Dyn2**. It specifies how a chord will be sounded when that chord is input from the keyboard.

Off: There will be no sound when you input a chord from the keyboard. This is analogous to a guitarist changing chords in the left hand. The phrase or pattern will sound from the first step when you operate the controller.

1st: When you input a chord from the keyboard, the first step of the phrase or pattern will sound. When you operate the controller, the phrase or pattern will continue advancing.

Chrd1: When you input a chord from the keyboard, the first several steps of the phrase or pattern will sound, according to the number of notes that you input. When you operate the controller, the phrase or pattern will continue advancing.

Chrd2: When you input a chord from the keyboard, it will sound in the same way as for Chrd1. However, the phrase or pattern will play from the beginning of the pattern when you operate the controller.

Chrd3: When you input a chord from the keyboard, it will sound in the same way as for Chrd1. However, the phrase or pattern will start from the second step when you operate the controller. When simulating acoustic guitar finger picking, this allows you to create a natural connection between the played chord and the finger picking sounded by the controller.

VelSensBtm (Vel Sens Bottom) [001...127]

This is valid when "Mode" is **Dyn**, **Auto + Dyn1** or **Auto + Dyn2**. If the Dynamic MIDI "Source" is **Note** or **Velocity**, the phrase will be produced by applying the velocity of each Manual Advance trigger that is input to the KARMA module to the notes as they are generated. This parameter specifies the lower limit of a scaled range that the velocity is adjusted by before being applied.

With a setting of **001**, the velocity data will be input to the KARMA module with an unmodified range of 1-127.

With a setting of **064**, velocity data in the range of 1-127 will be scaled to the range of 64-127 before it is input to the KARMA module.

6.2-2c: UTILITY

☞ "Write Program" (1.1-1c), "Copy KARMA Module," "Init KARMA Module" (6.1-1c), "Select by Category" (1.1-3d)

PROG 6.3: Ed-KARMA GE

Here you can edit the parameters of the GE selected for the KARMA module. By assigning GE parameters to KARMA real-time CONTROLS, you can control the phrase or pattern in real-time while you play.

6.3-1: GE P...4 (GE Parameter 1...4)

6.3-1: GE P...8 (GE Parameter 5...8)

6.3-1: GE P...12 (GE Parameter 9...12)

6.3-1: GE P...16 (GE Parameter 13...16)

PROG 6.3:Ed-KARMA GE		Parm:Parm01 Value	
GE Parameter	Value	Asgn	Pol
01.Rhythm: Swing %	+0000	---	+
02.Rhythm: Template [B]	+0007	⊙1	+
03.Velocity: Pools-Random Factor [E]	+0050	⊙1	-
04.Repeat: Decay	-0006	⊙4	+

6.3-1a

6.3-1b

6.3-1(2)(3)(4)a: GE Parameter, Value, Asgn (Assign), Pol (Polarity)

GE Parameter (GE real-time Parameter)

This shows the GE parameters selected for the KARMA module.

Each GE has up to 16 preset parameters that are suitable for controlling the phrase or pattern. The GE parameters displayed will depend on the selected GE.

For details on the GE parameters, refer to GE Guide.

Value (GE real-time Parameter Value)

Sets the value of each GE parameter.



If you use GE Select (1.1-3a, 6.1-1b) to select a GE, the default values that are preset for each GE will be specified. The range of the values are also preset for each GE.

The value you specify here will be the center value when the KARMA real-time CONTROLS knobs etc. are used to control these parameters.

Asgn (GE real-time Parameter Assign) [---, 1...Dyn4]



Here you can assign the controller for the GE parameter. By assigning GE parameters to KARMA real-time CONTROLS, they can be controlled in real-time while you play.

---: No assignment.



 1... 8 (Knob 1...8): Assigns the parameter to KARMA real-time CONTROLS knobs [1]–[8]. The knob will continuously control the “value.”

For example, let’s assume that the “Rhythm Swing%” parameter of the selected GE has a Value range of +0000–+0100.

- If you set “Value”: +0050, “Asgn (Assign)”: **Knob 1**, and [Pol (Polarity)]:+
Knob 1 at the center position (12 o’clock) will produce a value of +0050. At far left the value will be +0000, and at far right the value will be +0100. Turning the knob from center toward the left will control the value from +0050...+0000, and turning it from center toward the right will control the value from +0050...+0100.
- If you set “Value”: +0080, “Asgn (Assign)”: **Knob1**, and “Pol (Polarity)”:+
Knob 1 at the center position (12 o’clock) will produce a value of +0080. At far left the value will be +0000, and at far right the value will be +0100. Turning the knob from center toward the left will control the value from +0080...+0000, and turning it from center toward the right will control the value from +0080...+0100.

 1SW... 8SW (Knob 1...8SW): Assign the parameter to KARMA real-time CONTROLS knobs [1]–[8]. The knob will switch the value between minimum and maximum only, in a key (on/off) operation. The left range of the knob is off, and the center and right is on.

- If you set “Value”: +0050, “Asgn (Assign)”: **Knob 1SW**, and [Pol (Polarity)]:+
Turning the knob toward the left will produce a value of +0000. Turning it to center or right will produce a value of +0100.

 1 ...  2: The parameter will be assigned to switch [1]/[2]. The “Value” will be controlled between the minimum and maximum values.

note The maximum and minimum values controlled by **Knob1–8SW** and **SW1/2** will depend on the “Value” setting.

[Example]

GE parameter Value range: in the case of 0...100

“Value” setting: +0050

Minimum value controlled by Knob1–8SW, SW1/2: 0

Maximum value controlled by Knob1–8SW, SW1/2: 100

“Value” setting: +0025

Minimum value controlled by Knob1–8SW, SW1/2: 0

Maximum value controlled by Knob1–8SW, SW1/2: 50

“Value” setting: +0075

Minimum value controlled by Knob1–8SW, SW1/2: 50

Maximum value controlled by Knob1–8SW, SW1/2: 100

MIDI The correspondence between the KARMA real-time CONTROLS and MIDI control change messages can be specified in Global mode 6.1–2. In this case, a MIDI control change message value of less than 64 will be “off,” and 64 or greater will be “on.”

Dyn 1...4: This corresponds to Dynamic MIDI 1...4.


Select this if you wish to control a GE parameter using the controller selected for “Source” in Dynamic MIDI (6.4–3a/b/c/d). (Set the Dynamic MIDI (6.4–3a/b/c/d) “Destination” to **RTParm Ctrl.**)

Pol (GE real-time Parameter Polarity) [+ , -]

Specifies the polarity used when you operate the KARMA real-time CONTROLS that you selected for “Asgn.”

- + : In the case of **Knob1...8**, rotating to the left of center will lower the “Value,” and rotating to the right will raise it. In the case of **Knob1...8SW**, the left side will be **off**, and the center and right side will be **on**. In the case of **SW1/2**, the parameter will be **on** when the LED is lit.
- : In the case of **Knob1...8**, rotating to the left of center will raise the “Value,” and rotating to the right will lower it. In the case of **Knob1...8SW**, the left side will be **on**, and the center and right side will be **off**. In the case of **SW1/2**, the parameter will be **on** when the LED is dark.

■ 6.3–1 (2)(3)(4)b: UTILITY

 “Write Program” (1.1–1c), “Copy KARMA Module,” “Init KARMA Module” (6.1–1c), “Select by Category” (1.1–3d)

PROG 6.4: Ed-KARMA RT

6.4-1: RTP ..4 (RT Parameter 1...4)

6.4-2: RTP ..8 (RT Parameter 5...8)

Here you can assign controllers for 29 different KARMA parameters (RT Parm) other than the GE parameters such as the KARMA key zone parameters (6.1-2a, 6.1-2b) and KARMA module parameters (6.2-1a, 6.2-2a, 6.2-2b).

By assigning these to KARMA real-time CONTROLS, you can control them in real-time while you play.

🔍 In RT Parm 1-8, if you select a parameter by "Grp" and "Parameter" and check "Module A," that parameter can no longer be edited as a KARMA key zone parameter (6.1-2a, 6.1-2b) or KARMA module parameter (6.2-1a, 6.2-2a, 6.2-2b).

PROG 6.4:Ed-KARMA RT RTPrm:Parm1 Group								
	Grp	Parameter	Min	Max	Val	Asgn		
6.4-1a	1	Mix	Transpose	-0036	+0036	+0000	☑	⊙1
6.4-1b	2	Ctrl	Quantize Trig	+0000	+0001	+0000	☑	⊙2
6.4-1c	3	Trig	Dly Start	+0000	+0025	+0025	☑	⊙3
6.4-1d	4	Off	----	+0000	+0000	+0000	☐	

6.4-1e

6.4-1(2)a/b/c/d: RT Parm 1...4, RT Parm 5...8

Grp (Parm Group) [Off, Mix, Ctrl, Trig, Zone]

Indicates the group of parameters that you wish to assign. The 29 KARMA parameters are divided into four groups, and the parameters that can be assigned in "Parameter" will differ according to the group.

Parameter [---, Transpose ... Tr.Oct/5 OutZ]

Indicates the parameter that you wish to assign. The parameters that can be selected will differ according to the group you selected in "Grp."

🔍 Each of the parameters you select here corresponds to a KARMA key zone parameter or module parameter that can be set in 6.1 or 6.2. If you select "Grp" and "Parameter" in RT Param 1-8 and check "Module A," that parameter can no longer be edited as the corresponding parameter of 6.1 or 6.2.

Group: Mix

Transpose [-36...+36]

Assigns the "Transpose" (6.2-1a) function. Control the transposition in semitone steps.

Trnsp.Oct [-36...+36]

Assigns the "Transpose" (6.2-1a) function. Control the transposition in octave steps.

Trnsp.Oct/5 [-36...+36]

Assigns the "Transpose" (6.2-1a) function. Control the transposition in steps of an octave and a fifth.

Group: Ctrl

Quantize Trig [0...+1]

Assigns the "Quantize Trig" (6.2-1a) function.

0: Off

1: On

☞ p.30 "Quantize Trig" (6.2-1a)

Root Position [0...+1]

Assigns the "Root Position" (6.2-1a) function.

0: Off

1: On

☞ p.30 "Root Position" (6.2-1a)

Force Range [0...+4]

Assigns the "Force Range" (6.2-1a) function.

0: Off

1: Lowest

2: Highest

3: C3-B3[1]

4: C3-B3[2]

☞ p.29 "Force Range" (6.2-1a)

ClkAdv Mode [0...+3]

Assigns the "Mode (Clk Adv. Mode)" (6.2-2b) function.

0: Auto

1: Dyn

2: Auto+Dyn1

3: Auto+Dyn2

☞ p.32 "Mode (Clk Adv. Mode)" (6.2-2b)

ClkAdv Size [0...+11]

Assigns the "Size (Clk Adv. Size)" (6.2-2b) function.

0...10: 🎵...🎵

11: Event

☞ p.32 "Size (Clk Adv. Size)" (6.2-2b)

ClkAdv Vel [001...127]

Assigns the "VelSensBtm" (6.2-2b) function.

☞ p.32 "VelSensBtm" (6.2-2b)

ClkAdv Chord [0...+4]

Assigns the "ChdMode" (6.2-2b) function.

0: Off

1: 1st

2: Chrd1

3: Chrd2

4: Chrd3

☞ p.32 "ChdMode" (6.2-2b)

Group: Trig

Dly Start [0...+25]

Assigns the "Delay Start" (6.2-1a) function.

0: Off

1: Fixed

2...25: 🎵...4x 🎵

☞ p.30 "Delay Start" (6.2-1a)

Dly Start ms [0...+5000]

Assigns the "Delay Start Fixed" (6.2-1a) function.

☞ p.30 "Delay Start Fixed" (6.2-1a)

Note Trigger [0...+3]

Assigns the "Note Trigger" (6.2-2a) function.

0: Any

1: AKR

2: 1st

3: Dyn

☞ p.31 "Note Trigger" (6.2-2a)

Note Latch	[0, +1]	Tr.Oct/5 OutZ	[-36...+36]
Assigns the "Note Latch" (6.2-2a) function.		Assigns the "Transpose OutZ" (6.1-2b) function.	
0: Off		This controls the transposition of note data from the key-	
1: On		board outside the key zone, in units of an octave and a fifth.	
☞ p.31 "Note Latch" (6.2-2a)			
Env1 Trigger/Env2 Trigger/Env3 Trigger	[0...+3]	Min (Parm Min Value)	[---, -0036...+5000]
Assigns the "Env1 Trigger"/"Env2 Trigger"/"Env3 Trigger" (6.2-2a) functions.		Specifies the minimum value that will be operated by the controller.	
0: Any		The available values will depend on the selected parameter.	
1: AKR		When the parameter is selected, the minimum parameter value will be set as the default.	
2: 1st			
3: Dyn		Max (Parm Max Value)	[---, -0036...+5000]
☞ p.31 "Env1 Trigger"/"Env2 Trigger"/"Env3 Trigger" (6.2-2a)		Specifies the maximum value that will be operated by the controller.	
Env1 Latch/Env2 Latch/Env3 Latch	[0...+4]	The available values will depend on the selected parameter.	
Assigns the "Env1 Latch"/"Env2 Latch"/"Env3 Latch" (6.2-2a)		Val (Parm Value)	[---, -0036...+5000]
0: Off		Specifies the value of the selected KARMA parameter.	
1: Sus1		If you check "A (Parm Module A)" and select "Parameter," this will be set as the current value of the parameter (set in 6.1 and 6.2).	
2: Rel1		The value you specify here will be the center value when you use "Asgn" to control the parameter from the KARMA real-time CONTROLS knobs, etc.	
3: Sus2			
4: Rel2			
☞ p.31 "Env1 Latch"/"Env2 Latch"/"Env3 Latch" (6.2-2a)			
Group: Zone		A (Parm Module A)	[Off, On]
Thru InZone	[0, +1]	Specifies the module to which the settings of RT Parm 1-8 will apply.	
Assigns the "Thru In Zone" (6.1-2b) function.		In Program mode, only one KARMA module (module [A]) can be used. Thus in Program mode, you can turn the RT Parm 1-8 settings on/off.	
0: Off		On (checked): RT Parm settings will be valid.	
1: On		Off (unchecked): RT Parm settings will be ignored.	
☞ p.27 "Thru In Zone" (6.1-2b)			
Thru OutZone	[0...+1]	Asgn (Parm Assign)	[---, ☉ 1...Dyn4]
Assigns the "Thru Out Zone" (6.1-2b) function.		Assigns the selected parameter to a controller.	
0: Off		If you assign a parameter to KARMA real-time CONTROLS, you can control it in real-time while you play.	
1: On		☞ 6.3-1a: "Asgn" (GE real-time Parameter Assign)	
☞ p.27 "Thru Out Zone" (6.1-2b)			
Key Zone Btm	[0...+127]		
Assigns the "KeyZone Bottom" (6.1-2a) function.			
0...127: C-1-G9 (corresponds to note numbers)			
☞ p.27 "KeyZone Bottom" (6.1-2a)			
Key Zone Top	[0...+127]		
Assigns the "KeyZone Top" (6.1-2a) function.			
0...127: C-1-G9 (corresponds to note numbers)			
☞ p.27 "KeyZone Top" (6.1-2a)			
Trnsp. InZ	[-36...+36]		
Assigns the "Transpose InZ" (6.1-2b) function.			
This controls transposition of the note data from the key-			
board within the key zone, in semitone steps.			
☞ p.27 "Transpose InZ" (6.1-2b)			
Trnsp. OutZ	[-36...+36]		
Assigns the "Transpose OutZ" (6.1-2b) function.			
This controls the transposition of note data from the key-			
board outside the key zone, in semitone units.			
☞ p.27 "Transpose OutZ" (6.1-2b)			
Tr.Oct InZ	[-36...+36]		
Assigns the "Transpose InZ" (6.1-2b) function.			
This controls the transposition of note data from the key-			
board within the key zone, in octave units.			
Tr.Oct OutZ	[-36...+36]		
Assigns the "Transpose OutZ" (6.1-2b) function.			
This controls the transposition of note data from the key-			
board outside the key zone, in octave units.			
Tr.Oct/5 InZ	[-36...+36]		
Assigns the "Transpose InZ" (6.1-2b) function.			
This controls the transposition of note data from the key-			
board within the key zone, in units of an octave and a fifth.			

■ 6.4-1 (2)e: UTILITY

☞ "Write Program" (1.1-1c), "Copy KARMA Module," "Init KARMA Module" (6.1-1c)

6.4-3: DynMIDI (Dynamic MIDI)

Dynamic MIDI is a function that lets you use this instrument's controllers and MIDI control messages to control specific KARMA functions.

You can take advantage of this to control KARMA in various ways while you play. For example, **Manual Advance** (6.2-2b) lets you use joystick or note-on to advance the KARMA clock. Or you can use a foot switch to control **Auto Transpose**, or a damper pedal to control the KARMA latch.

	Input/Source	Btm/Top	Act	Destination	Pol
6.4-3a	A/ Note	000/127	C	Smart Scan	+
6.4-3b	A/ JS-Y #02	000/127	M	Repeat Stop	+
6.4-3c	A/ Off	000/127	C	Off	+
6.4-3d	A/ Off	000/127	C	Off	+

6.4-3e

6.4-3a/b/c/d: Dyn MIDI1...4

Input (Dyn 1...4 Input Module)

In Program mode this is fixed at A.

This is because only KARMA module [A] is used. This setting cannot be changed.

Source (Dyn 1...4 Source) [Off, JS+Y #01...Vel Out Z]

Indicates the controller etc. that will be the Dynamic MIDI source.

([esp.234](#) "Dynamic MIDI Source and Distnation")

Btm (Dyn 1...4 Range-Btm) [000...127]

Specifies the lower limit for the value controlled by "Source."

If "Source" is **Short Note**, **Note No.**, **White Note**, or **Black Note**, the numeric value corresponds to the note numbers C-1-G9.

Top (Dyn 1...4 Range-Top) [000...127]

Specifies the upper limit for the value controlled by "Source."

If "Source" is **Short Note**, **Note No.**, **White Note**, or **Black Note**, the numeric value corresponds to the note numbers C-1-G9.

Act (Dyn 1...4 Src Action) [M, T, C]

Specifies the operation mode for Dynamic MIDI.

M (Momentary): The parameter will be controlled as a switch. For example if "Source" is **JS+Y #01**, the parameter will normally be **off**, and will be **on** when you move the joystick.

MIDI If "Pol" (Dyn1...4 Polarity) is "+" and the source controller value is "Btm (Dyn1...4 Range-Btm)" this will be **off**. If the controller value is "Top (Dyn1...4 Range-Top)," it will be **on**.

[Example]

When "Btm (Dyn1...4 Range-Btm)": 000 and "Top (Dyn1...4 Range-Top)": 127

The controller value and the on/off status are related as follows.

000 → 127: **on** at 127

127 → 000: **off** at 000

T (Toggle): The parameter will be controlled as a switch. For example if "Source" is **JS+Y #01**, the parameter will alternate between **on/off** each time you move the joystick.

MIDI If "Pol" (Dyn1...4 Polarity) is "+," on and off will alternate each time the source controller value exceeds the "Top (Dyn1...4 Range-Top)" value after having passed through the "Btm (Dyn1...4 Range-Btm)" value.

[Example]

When "Btm (Dyn1...4 Range-Btm)": 0 and "Top (Dyn1...4 Range-Top)": 127

The controller value and the on/off status are related as follows.

000 → 127: **on** → **off** at 127

127 → 000 → 127: **on** → **off** at 127

(127 → 001 → 127: no change)

C (Continuous): The parameter will be controlled continuously.

MIDI The operating modes that can be selected are limited by the "Destination." ([esp.234](#) "Dynamic MIDI Sources & Destinations")

Destination (Dyn 1...4 Destination)

[Off, RTParm Ctrl...Buffer Latch]

Select the Dynamic MIDI control destination function.

([esp.235](#) "Dynamic MIDI Destinations")

Pol (Dyn 1...4 Polarity) [+ , - , +/- , -/+]

Specifies the Dynamic MIDI polarity.

For example if you set "Pol" to + and the Source is **K.Knob1**, moving the knob1 from left to right will change the value from 0 → 127. If you set "Pol" to -, the same knob1 movement will change the value from 127 → 0.

([esp.234](#) Dynamic MIDI Destination "JS X")

6.4-3e: UTILITY

[esp.](#) "Write Program" (1.1-1c), "Copy KARMA Module," "Init KARMA Module" (6.1-1c)

6.4-4: Name 1

6.4-5: Name 2

	Prog 6.4:Ed-KARMA RT	Name 1:Knob 1
6.4-4a	01:058: Rhythm Pattern	
	02:008: Note Range Bottom	
	03:194: Repeat Initial Volume	
	04:195: Repeat Decay	
	05:197: Repeat Transpose	

6.4-4b

6.4-4(5)a: Knob, Switch

Knob1...8 [000: no name...]

Switch1, 2 [000: no name...]

Indicates the name for the KARMA real-time CONTROLS knobs and keys.

Appropriate names for the functions of the KARMA real-time CONTROLS knobs and keys have been preset.

6.4-4(5)b: UTILITY

[esp.](#) "Write Program" (1.1-1c), "Copy KARMA Module," "Init KARMA Module" (6.1-1c)

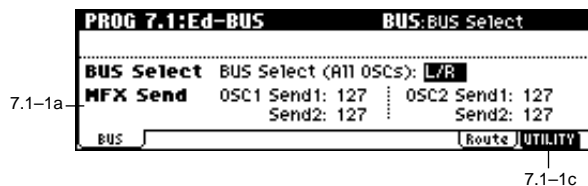
PROG 7.1: Ed-BUS

These settings specify the bus on which the output of the oscillator will be sent, and adjust the send levels to the master effects.

☞ For details on insertion effects, refer to p.159 “7. Effect Guide.”

7.1-1: BUS

The following diagram shows the LCD screen when “Mode (Oscillator Mode)” (2.1-1a) is set to **Single** or **Double**.

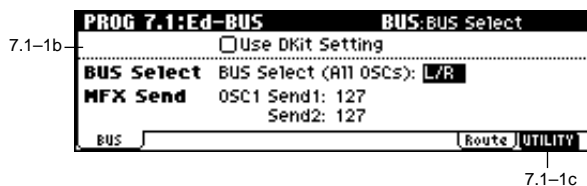


MIDI CC#93 will control the Send 1 level for OSC 1 and 2, and control change #91 will control the Send 2 level for OSC 1 and 2. These are controlled on the global MIDI channel “MIDI Channel” (GLOBAL 2.1-1a).

The actual send level is determined by multiplying these values with the send level setting of each oscillator.

7.1-1b: Use DKit Setting

The LCD screen shown below is for when “Mode (Oscillator Mode)” (2.1-1a) is set to **Drums**.



7.1-1a: BUS

BUS Select:

BUS Select (All OSCs) [L/R, IFX1...5, 1, 2, 1/2, Off]

Specifies the bus to which oscillators 1 and 2 will be sent.

⚠ If this is set to **1/2**, the oscillator pan settings (5.1-1b, 5.2-1) will be used to output the sound in stereo from AUDIO OUTPUT (INDIVIDUAL) 1/2. When the oscillator pan is controlled by CC#10 (pan) or AMS (Alternate Modulation Source), the sound will be output with the pan setting that is in effect at note-on. Unlike the case when this is set to **L/R** to output the sound from (MAIN) L/MONO and R, the pan of a sounding note will not change in real-time.

If you wish to adjust the pan in real-time while playing a note and output the sound from AUDIO OUTPUT (INDIVIDUAL) 1/2, set “BUS Select” to **IFX1** (or **IFX2-IFX5**), set “IFX1” (or **IFX2-IFX5** (7.2-1a)) to **000: No Effect**, and set the “BUS Select” (7.2-1a) after passing through IFX to **1/2**.

MFX Send:

OSC1 Send1 [000...127]

Sets the volume (send level) at which the output of OSC1 will be sent to master effect 1. This is valid when “BUS Select” is set to **L/R** or **Off**.

If “BUS Select” is set to **IFX1, IFX2, IFX3, IFX4** or **IFX5**, the send levels to master effect 1 and 2 are set by “S1 (Send1(MFX1))” and “S2 (Send2(MFX2))” (7.2-1a) after passing through IFX 1/2/3/4/5 of the Ed-InsertFX Setup pages.

OSC1 Send2 [000...127]

Sets the volume (send level) at which the output of OSC1 will be sent to master effect 2 (☞ “OSC1 Send1”).

OSC2 Send1 [000...127]

OSC2 Send2 [000...127]

Sets the volume (send level) at which the output of OSC2 will be sent to master effects 1 and 2. These parameters will be valid when “Mode (Oscillator Mode)” (2.1-1a) is set to **Double** and “BUS Select” is set to **L/R** or **Off** (☞ “OSC1 Send1”).

Use DKit Setting

[Off, On]

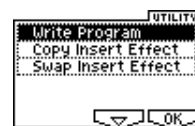
This will be available when “Mode (Oscillator Mode)” is set to **Drums**.

On (checked): The “BUS (BUS Select)” (GLOBAL 5.1-3a) setting for each key of the selected drum kit will be used. Check this when you want to apply an insert effect to an individual drum instrument, or to output an individual drum instrument to one of the AUDIO OUTPUT (INDIVIDUAL) jacks.

If the “Mode (Oscillator Mode)” is **Single** or **Double**, this setting has no effect.

Off (unchecked): The setting of the “BUS Select,” “MFX Send” (7.1-1a) parameter described below will be used. All drum instruments will be sent to the specified bus.

7.1-1c: UTILITY



☞ “Write Program” (1.1-1c)

For details on how to select the desired utility function, refer to “PROG 1.1-1c: UTILITY.”

Copy Insert Effect

This command copies effect settings from Program, Combination, Song, or Song Play mode.

- 1 Select "Copy Insert Effect" to access the dialog box.



- 2 In "From" select the copy source mode, bank, and number.

You can use the Bank [A]–[G] keys to select the bank.

- 3 Select the effect that you wish to copy. You can also copy from a master effect. If "All" is checked, all effect settings will be copied (i.e., the contents of the Setup page and the effect parameters of IFX 1–5, but not "Ctrl Ch").

⚠ If you are copying from a master effect, the result may not be identical, due to differences in the routing and level settings of a master effect.

- 4 In "To," select the copy destination insert effect. If you check "Post IFX Mixer Setting," the "Chain," "Pan (CC#8)," "BUS Select," "S1 (Send 1 (MFX1))" and "S2 (Send 2 (MFX2))" settings that follow the copy source insert effect will also be copied. If you **do not check** this, only the effect type and its parameters will be copied.
- 5 To execute the Copy Insert Effect command, press the [F8] ("OK") key. To cancel, press the [F7] ("Cancel") key.

Swap Insert Effect

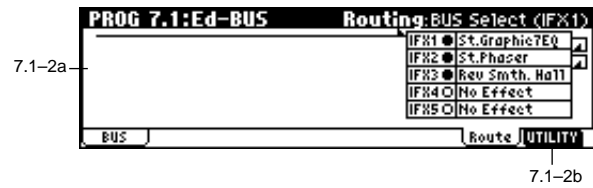
This command swaps (exchanges) insert effect settings.

- 1 Select "Swap Insert Effect" to access the dialog box.



- 2 In "Source 1" and "Source 2," select each of the insert effects that you wish to swap.
- 3 To execute the Swap Insert Effect command, press the [F8] ("OK") key. To cancel, press the [F7] ("Cancel") key.

7.1–2: Route (Routing)



7.1–2a: Routing

This displays the setting status of the insert effects.



This shows the insert effect routing, the names of the selected effects, their on/off setting, and chain status. The insert effect type, on/off, and chain settings can be made in the Setup page of 7.2: Ed-InsertFx.

You can use the Value Controller to set "BUS Select" (7.1–1a).

7.1–2b: UTILITY

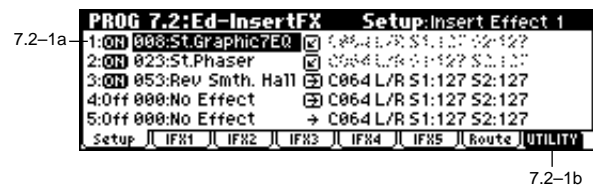
⚠ "Write Program" (1.1–1c), "Copy Insert Effect," "Swap Insert Effect" (7.1–1c)

PROG 7.2: Ed-InsertFX

7.2–1: Setup

Here you can select the type of each insert effect, turn it on/off, and make chain settings.

The direct sound (Dry) of an insert effect is always stereo input and output. The input/output of the effect sound (Wet) will depend on the effect type (p.160).



7.2–1a: InsertFX Setup

IFX1 — IFX5 On/Off [Off, ON]

Selects the insert effect on/off.

When this is **Off**, the input will be output without change. (For 000: No Effect, on/off will produce the same result.)

MIDI Separately from this setting, you can use control change #92 to turn off all insert effects together. A value of 0 will be off, and a value of 1-127 will be the original setting. This message is received on the global MIDI channel specified by "MIDI Channel" (GLOBAL 2.1-1a).

Insert Effect 1, 5 [000...089: name]
Insert Effect 2, 3, 4 [000...102: name]

Indicates the type of each insert effect. For "Insert Effect 1" and "Insert Effect 5" you can select from 90 types of effect: 000: No Effect - 089: Reverb-Gate. Double-size effects cannot be used. For "Insert Effect 2," "Insert Effect 3" and "Insert Effect 4" you can select from 103 types of effect: 000: No Effect - 102: Hold Delay.

If you select a double-size effect, the next insert effect will be unavailable for use. For example if you select a double-size effect for IFX2, IFX3 cannot be used. A maximum of two double-size effects can be used (normal size for IFX1, double size for IFX2 and IFX4) (p.160).

These effects can also be selected by category in Utility "Select by Category" (7.2-1b).

Chain [(Off), (On)]

Indicates "chain" on/off for each insert effect. For example if "Chain" for IFX1 is set to (On), IFX1 and IFX2 will be connected in series. If "BUS Select" (7.1-1a) is set to **IFX1**, IFX1 and IFX2 will be inserted in series. A maximum of five insert effects (IFX1-IFX5) can be inserted in series. When effects are chained, the "Pan (CC#8)," "BUS Select," "S1 (Send1(MFX1))" and "S2 (Send2(MFX2))" settings that follow the last IFX in the chain will be used.

Pan(CC#8) (Post IFX Pan CC#8) [L000...C064...R127]

Sets the pan after the sound has passed through the insert effect. This setting is valid only when the following "BUS Select" is set to L/R (p.162).

MIDI CC#8 will control.

BUS Select [L/R, 1, 2, 1/2, Off]

Specifies the bus to which the sound will be sent after passing through the insert effect. Normally you will set this to L/R. If you wish to output to AUDIO OUTPUT (INDIVIDUAL), set this to 1, 2 or 1/2. The Off setting is used when you wish to use "S1 (Send1(MFX1))" and "S2 (Send2(MFX2))" and in addition connect to the master effects in series.

S1 (Send1 (MFX1)) [000...127]
S2 (Send2 (MFX2)) [000...127]

Sets the send levels to the master effects 1 and 2 for the sound that has passed through the insert effect. These settings are valid when "BUS Select" (7.1-1a) has been set to L/R or Off.

MIDI Control change CC#93 will control the Send 1 level, and control change CC#91 will control the Send 2 level. These messages are received on the global MIDI channel specified by "MIDI Channel" (GLOBAL 2.1-1a).

■ 7.2-1b: UTILITY



☞ "Write Program" (1.1-1c), "Copy Insert Effect," "Swap Insert Effect" (7.1-1c)

Select by Category

Indicates insert effects by category. For the procedure, refer to "Select by Category" (p.2).



note This command can be used when selecting "Insert Effect 1"-"Insert Effect 5."

7.2-2: IFX 1 (Insert Effect1)

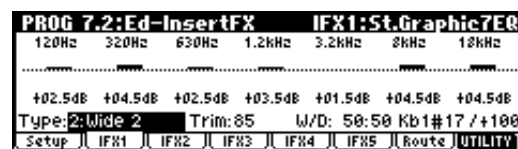
7.2-3: IFX 2 (Insert Effect2)

7.2-4: IFX 3 (Insert Effect3)

7.2-5: IFX 4 (Insert Effect4)

7.2-6: IFX 5 (Insert Effect5)

Here you can set the effect parameters for the IFX 1/2/3/4/5 that were selected in the Setup page (p.168).



7.2-2a

MIDI Effect dynamic modulation (Dmod) is controlled on the global MIDI channel "MIDI Channel" (GLOBAL 2.1-1a). (p.227 "Dynamic Modulation Source (D.mod)")

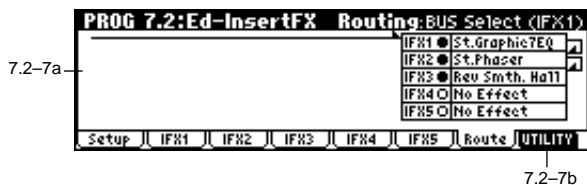
■ 7.2-2(...6)a: UTILITY

☞ “Write Program” (1.1-1c)

7.2-7: Routing (Routing)

7.2-7a: Routing

This shows the status of the insert effect settings. (☞7.1-2a)



7.2-7b

■ 7.2-1b: UTILITY

☞ “Write Program” (1.1-1c), “Copy Insert Effect,” “Swap Insert Effect” (7.1-1c)

PROG 7.3: Ed-MasterFX

☞ For details on insertion effects, refer to p.159 “7. Effect Guide.”

7.3-1: Setup

Here you can select the master effect types, switch them on/off, specify chaining, and set the master EQ.



7.3-1c 7.3-1d

7.3-1a: Master Effect Setup

The master effects do not output the direct sound (Dry). The return level (“Rtn 1, 2”) sends the effect sound (Wet) to the L and R bus, and this is mixed with the direct sound (“BUS Select” L/R: 7.1-1a, 7.2-1a).

The master effects are mono-in stereo-out. The sound that is panned to L and R after passing through the oscillator and insert effects is mixed to a mono signal as adjusted by the “S1 (Send1 (MFX1))” and “S2 (Send2 (MFX2))” levels, and input to the master effects.

🔊 The master effects are **mono-in stereo-out**. Even when a stereo-input type effect is selected, the input will be monoaural.

MFX1 On/Off, MFX2 On/Off [Off, ON]

Switches master effect 1, 2 on/off. When off, the output will be muted.

🎹 Separately from this setting, you can use CC#94 to switch master effect 1 on/off, CC#95 to switch master effect 2 on/off. A value of 0 will be off, and a value of 1-127 will be the original setting. This is controlled on the global MIDI channel “MIDI Channel” (GLOBAL 2.1-1a).

Master Effect 1, 2 [000...089: name]

Indicates the effect type for master effect 1, 2. You can select from 90 types of effect: 000: No Effect-089: Reverb-Gate. (Double-size effects cannot be selected.) If 000: No Effect is selected, the output from the master effect will be muted.

Rtn 1, 2 (Return 1, 2) [000...127]

Adjusts the return levels from the master effects to the L/R bus (main output L/MONO, R).

7.3-1b: Chain

MFX Chain [Off, On]

On (checked): Chain (series connection) will be turned on for MFX1 and MFX2. (☞p.165)

Direction (Chain Direction) [MFX1→MFX2, MFX2→MFX1]

Specifies the direction of the connection when MFX1 and MFX2 are chained.

MFX1→MFX2: Connect from MFX1 to MFX2.

MFX2→MFX1: Connect from MFX2 to MFX1.

Signal (Chain Signal) [LR Mix, L Only, R Only]

When chain is On, this parameter specifies how the stereo output signal of the first master effect will be connected to the input (mono) of the next master effect.

L/R Mix: The stereo output L/R of the first master effect will be mixed before being input to the next master effect.

L Only, R Only: Only the left or right channel of the output will be input to the next master effect.

Level (Chain Level) [000...127]

Sets the send level from the first master effect to the next master effect when chain is turned on.

7.3-1c: Master EQ Gain [dB]

Sets the gain for the three-band EQ located immediately before the sound of the L/R bus is sent from the AUDIO OUTPUT (MAIN OUT) L/MONO and R jacks. This is linked with the various “Gain” parameters of Master EQ (7.3-4).

Low [-18.0...+18.0]

Mid [-18.0...+18.0]

High [-18.0...+18.0]

The cutoff frequency for “Low,” “Mid” and “High” and the “Q” of “Mid” can be adjusted in the MEQ page. These settings are in “dB” units.

7.3-1d: UTILITY



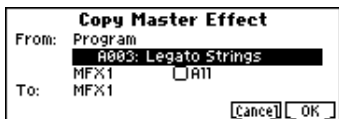
☞ “Write Program” (1.1-1c)

For details on how to select the desired utility function, refer to “PROG 1.1-1c: UTILITY.”

Copy Master Effect

This command lets you copy any desired effect settings from Program, Combination, Song or Song Play modes.

- ① Select “Copy Master Effect” to access the dialog box.



- ② In “From,” select the copy source mode, bank, and number. You can use the Bank [A]-[G] keys to select the bank.
- ③ Select the effect that you wish to copy. If you select **MFX 1** or **2**, “Rtn (Return)” (return level) will be copied at the same time. If you select **Master EQ**, only the master EQ settings will be copied. You can also copy from an insert effect. If you check “All,” all settings of the master effects and master EQ will be copied.
- ⚠ If you copy from an insert effect the result may not be identical, due to differences in routing and level settings.
- ④ In “To,” select the copy destination master effect.
- ⑤ To execute the Copy Master Effect command, press the [F8] (“OK”) key. To cancel, press the [F7] (“Cancel”) key.

Swap Master Effect

This command swaps (exchanges) the settings of MFX1 and MFX2.

- ① Select “Swap Master Effect” to access the dialog box.



- ② To execute the Swap Master Effect command, press the [F8] (“OK”) key. To cancel, press the [F7] (“Cancel”) key.

Select by Category

Selects master effects by category. (☞p.2)

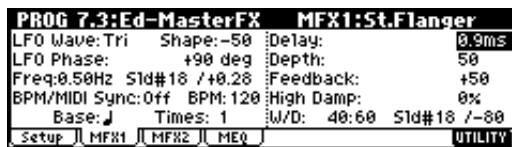


note This command can be used when selecting “Master Effect 1,” “Master Effect 2.”

7.3-2: MFX 1 (Master Effect1)

7.3-3: MFX 2 (Master Effect2)

Indicates effect parameter settings for the MFX1 and 2 effects that were selected in the Setup page (☞p.168).



7.3-2a

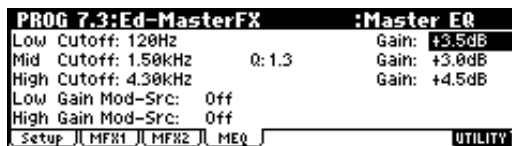
(☞p.227 “Dynamic Modulation Source (D.mod)”)

7.3-2(3)a: UTILITY

☞ “Write Program” (1.1-1c)

7.3-4: MEQ (Master EQ)

The master EQ is a three-band stereo EQ. It is used to adjust the overall tonality of the sound immediately before the L/R bus is output to the AUDIO OUTPUT (MAIN OUT) L/MONO and R jacks (☞p.220).



7.3-4a

7.3-4a: UTILITY

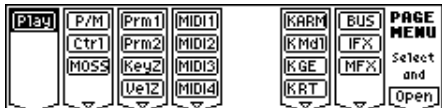
☞ “Write Program” (1.1-1c)



2. Combination mode

COMBI PAGE MENU

For details on how to select pages in Combination mode, refer to p.1.



Play	1.1: Play	Select and play combinations. Select a program for each timbre, and set status, pan, and level. KARMA GE selection, Run/Solo settings. (☞p.43)
P/M	2.1: Ed-Prog/Mix	Select a program for each timbre, and set pan and level. (Same as the 1.1: Play parameters; can be edited from either page.) (☞p.48)
Ctrl	2.2: Ed-Ctrl	Controller settings. (☞p.49)
MOSS	2.3: Ed-MOSS	Displayed if the separately sold EXB-MOSS option is installed. Set EXB-MOSS parameters. (☞p.49)
Prm1	3.1: Ed-Param1	MIDI, OSC, and Pitch settings for each timbre. (☞p.49)
Prm2	3.2: Ed-Param2	Enable timbre sounding by KARMA ON/OFF, delay and scale settings for each timbre. (☞p.51)
KeyZ	3.3: Ed-Key Zone	Key zone settings for each timbre. (☞p.52)
VelZ	3.4: Ed-Vel Zone	Velocity zone settings for each timbre. (☞p.53)
MIDI1	4.1: Ed-MIDI Filter 1	MIDI message transmission/reception filter settings for each timbre, such as Prog Change and After Touch. (☞p.54)
MIDI2	4.2: Ed-MIDI Filter 2	Filter settings such as JS and Ribbon Ctrl. (☞p.55)
MIDI3	4.3: Ed-MIDI Filter 3	Filter settings; Real-time Control Knob (☞p.55)
MIDI4	4.4: Ed-MIDI Filter 4	Filter settings; SW, Other Ctrl Change (☞p.56)
KARM	6.1: Ed-KARMA	KARMA GE selection and settings, mixer channel, key zone parameters, MIDI filter settings. (☞p.57)
K Mdl	6.2: Ed-KARMA Mdl	Module parameter settings (transpose, range of generated phrase, trigger etc.) (☞p.61)
K GE	6.3: Ed-KARMA GE	GE parameter settings and assignments to KARMA real-time Controls. (☞p.62)
K RT	6.4: Ed-KARMA RT	KARMA RT parameters, Dynamic MIDI settings. (☞p.63)
BUS	7.1: Ed-BUS	Bus and master effect send level settings for each timbre. (☞p.65)
IFX	7.2: Ed-InsertFX	Insert effect routing, selection, and settings. (☞p.66)
MFX	7.3: Ed-MasterFX	Master effect selection and settings. Master EQ settings. (☞p.67)

COMBI 1.1: Play

In this display page you can select and play Combinations.

1.1-1: Combi (Combination)



1.1-1a: Bank, Combi Select, Category, Cat.Hold, 10's Hold, J (Tempo)

Bank (Bank Select)

[Bank A...F]

This is the Combination bank display.

Use the front panel BANK [A]–[F] keys to select the bank.

On this instrument, there are a total of 768 combination programs in four rewritable banks (A, B, C, D, E, F), each containing 128 combinations.

Bank A, B	Preloaded combinations
Bank C, D	EXB-PCM series combinations, User combinations
Bank E	Preloaded combinations
Bank F	User combinations, EXB-PCM series combinations

☛ If you have selected the “Program Select” (1.1-2c) edit cell for a timbre 1–8 in the Prog page, Bank [A]–[G] will switch the program banks for timbres 1–8.

Combi Select (Combination Select) [0...127: name]

Here you can select a combination. Select this parameter, and use the VALUE [▲], [▼] keys, numeric keys [0]–[9], or the [VALUE] dial to select a combination. You can also select combinations by category, or using “10's Hold.” (☞p.2 “Select by Category,” “Cat.HOLD,” “10's HOLD”)

MIDI You can select programs by transmitting MIDI program changes from a connected external MIDI device, or by using a foot switch. (☞p.145 “Foot SW Assign” (GLOBAL 6.1-1a, ☞p.232 “Foot Switch Assign List”)

Category

[00...15: name]

This is the combination category display. All combinations are organized into sixteen categories. You can select a category, and then select from combinations that belong to that category.

To select combinations by category, use "Cat.HOLD" and Utility "Select by Category." (≡PROG 1.1-1a)

note To specify the category for a combination, use Utility "Write Combination" (1.1-1c). To modify a category name, use "Category Name Comb. 00-07, 08-15" (GLOBAL 4.1-3/4).

Cat.HOLD

Press the [./HOLD] key and the display will indicate **Cat. HOLD**. The category will be held (fixed). (≡PROG 1.1-1a)

10's HOLD

When you press the [./HOLD] key, the display will indicate **10's HOLD**, and the first digit of the combination number will be fixed. (≡PROG 1.1-1a)

♪ (Tempo)

[040...240, EXT]

Sets the tempo of the KARMA function. This can be adjusted by [TEMPO] knob.

EXT will be displayed if "MIDI Clock" (GLOBAL 2.1-1a) is set to **External**, and the KARMA function will synchronize to the MIDI clock received from an external MIDI device. This parameter can also be set from 6.1: Ed-KARMA.

1.1-1b: Combination Information

This displays information for the selected combination. The functions assigned to [SW1], [SW2], and real-time CONTROLS B mode [ASSIGNABLE 1-4] knobs will be displayed.

■ 1.1-1c: UTILITY

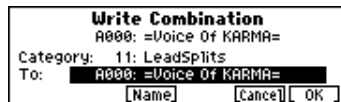


For details on how to select the desired utility function, refer to "PROG 1.1-1c: UTILITY."

Write Combination

This command writes an edited combination into this instrument's internal memory. Be sure to write any combination that you wish to keep. If the power is turned off or a different combination selected before you write an edited combination, your edits cannot be recovered.

For the procedure, refer to "Write Program" (PROG 1.1-1c).



If you use "Category" to specify a category for the combination that you are writing, you will be able to select it by category when selecting combinations in COMBI 1.1: Play.

note When you press the [REC/WRITE] key, the "Update Combination" dialog box will appear. Here also you can write to the currently selected combination.

Solo Selected Timbre

The Solo function will alternately be switched on/off each time you select "Solo Selected Timbre."

- ① From the utility menu, choose "Solo Selected Timbre," and press the [F8] ("OK") key to execute the command. When you execute this, a check mark will appear at the left of the "Solo Selected Timbre" menu item, and the Solo function will be on.
- ② In pages that show parameters for an individual timbre, you can select a timbre to Solo (in 1.1: Play, Prog page "Program Select," etc.) so that only that timbre will sound and the other timbres will be muted. The "Selected Timbre Information" (1.1-2d) in each page will indicate "Solo."
To solo a different timbre, select a parameter of the timbre that you wish to solo.

note You can move to timbres "T1"-"T8" by holding down the [TIMBRE/TRACK] key and pressing one of the [F1](T1/T9)-[F8](T8/T16) keys.

- ③ To defeat the Solo function, choose "Solo Selected Timbre" from the utility menu once again, and press the [F8] ("OK") key to cancel it.

⚠ If a timbre that is muted by the Solo function has been set to a "Status" (3.1-1a) of EXT or EX2, MIDI note-on/off messages will not be transmitted by that timbre.

Select by Category

Selects a combination by category. (≡p.2)



1.1-2: Prog (Timbre Program)

Indicates the program that will be used by each timbre.



1.1-2a: Bank, Combi Select, Cat.Hold, 10's Hold, J (Tempo)

Bank [Bank A...Bank F]
Combi Select (Combination Select) [0...127: name]
Cat. (Cat. HOLD)
10's (10's HOLD)
J (Tempo) [040...240, EXT]

In the same way as in the Combi page, select a combination and set the tempo of the KARMA function. (☞1.1-1a)

1.1-2b: Timbre Number & Category

Timbre Number & Category 1...8

This displays the timbre number and an abbreviated category name.

1.1-2c: Program Select, Program Name

Program Select [A000...g128]

Indicates the program that will be used by each timbre.

When "Program Select" is selected, you can use the Bank [A]–[G] key, numeric keys [0]–[9], VALUE controller to select a program.

"Program Select" settings can also be made in the Prog page of 2.1: Ed-Prog/Mix.

You can also use Utility "Select by Category" to select programs by category.

note You can move to timbres "T1"–"T8" by holding down the [TIMBRE/TRACK] key and pressing one of the [F1](T1/T9)–[F8](T8/T16) keys.

Bank F can be selected if you have installed the separately sold EXB-MOSS option. When installed, the 128 special EXB-MOSS programs will be available.

MIDI When you select a combination on this instrument, a MIDI program change for the selected combination number will be transmitted on the global MIDI channel "MIDI Channel" (GLOBAL 2.1-1a). At the same time, bank select, program change, and volume (CC#7) messages will be transmitted on the MIDI channel specified for each timbre that is set to "Status" (3.1-1a) of EXT or EX2. However, these messages will not be transmitted for timbres that are set to the same MIDI channel as the global MIDI channel. In this case, EX2 timbres will show the "Program Select" Bank as "-", and will transmit the bank number that was specified in "Bank (EX2) MSB" and "Bank (EX2) LSB" (3.1-1a).

MIDI messages transmitted when you operate this instrument are transmitted on the global MIDI channel. At the same time, timbres whose "Status" is EXT or EX2 will transmit the same messages on their own MIDI channel.

If bank select and program change messages are received on a MIDI channel that matches the MIDI channel of a timbre whose "Status" (3.1-1a) is INT, the program of that timbre will change. However if the MIDI channel of the incoming message matches the global MIDI channel "MIDI Channel," then the combination will change.

If you do not want the combination to change, you can either change the global MIDI channel so that it does not match the channel on which the program change messages are being received, or you can **uncheck** "Combi (Combi Change)" (GLOBAL 2.1-1b). Alternately, you can **uncheck** "Bank (Bank Change)" (GLOBAL 2.1-1b) so that only the program number will change and the bank will remain the same.

If you wish to change a program without changing the combination, you can also set "Program Change" (4.1-1a) so that the program will change on certain timbres but not on others.

Program Name

This displays part of the program name selected for the timbre. In the case of the GM2 variation bank or the GM2 drums bank, the variation bank (1)–(9) or drums bank (d) will be indicated.

1.1-2d: Selected Timbre Information

This shows information on the timbre (1–8) that is currently selected for editing.

Timbre No.: Bank No., Prog No.: and name

This shows the timbre number, and the program bank, number and name selected for that timbre.

Status (INT, Off, EXT, EX2)

This shows the MIDI and internal tone generator status for each track.

Ch (01...16, Gch)

This shows the MIDI channel number specified for the timbre.

1.1-2e: UTILITY



☞ "Write Combination," "Solo Selected Timbre" (1.1-1c)

For details on how to select the desired utility function, refer to "PROG 1.1-1c: UTILITY."

Select by Category

Combinations or the programs used by each timbre can be selected by category.

If you have selected “Combi Select,” selecting Utility “Select by Category” will access the Select Combination by Category dialog box, allowing you to select a combination by category. (p.44)

If you have selected “Program Select,” selecting Utility “Select by Category” will access the Select Program by Category (Timbre) dialog box, allowing you to select a program for each timbre by category.

For the procedure of selecting by category, refer to p.2.

1.1-3: Mix (Mixer)

Here you can set the pan and volume for each timbre 1-8.

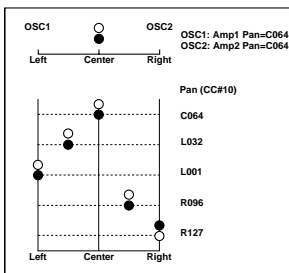
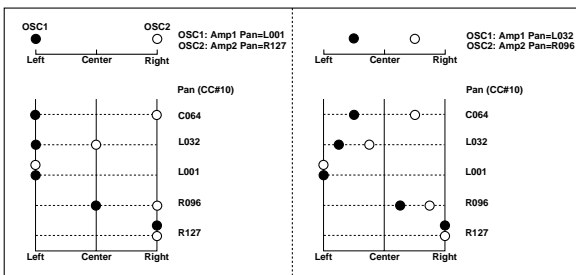


1.1-3a: Pan, Volume

Pan [RND, L001...C064...R127]

Sets the pan for each timbre 1-8. (This parameter can also be set from the Mixer page of 2.1: Ed-Prog/Mix.)

L001...C064...R127: A setting of L001 is far left and R127 is far right. A setting of C064 will reproduce the pan setting that was made for the oscillator in Program mode.



If a mono-type insertion effect is inserted, the setting you make here will be ignored. In this case, the “Pan (CC#8)” parameter in 7.2: Ed-InsertFX, Setup page will adjust the panning of the sound after the insertion effect (p.162 “3. Mixer”).

RND: The oscillator pan will change randomly at each note-on.

MIDI If “Status” (3.1-1a) has been set to INT, MIDI control change #10 (panpot) messages can be received to control the setting. CC#10 values of 0 or 1 will place the sound at far left, 64 at center, and 127 at far right. Pan can be controlled by messages received on the “MIDI Channel” (3.1-1a).

Volume [000...127]

Adjusts the volume of each timbre 1-8. (This parameter can also be set from the Mixer page of 2.1: Ed-Prog/Mix.)

MIDI The volume of each timbre is determined by multiplying this volume value with the MIDI volume (CC#7) and expression (CC#11). If “Status” (3.1-1a) has been set to INT, incoming MIDI CC#7 or CC#11 messages will control the volume of a timbre. (However these messages will not affect the setting of this parameter.)

If “Status” is EXT or EX2, the value of this parameter will be transmitted as MIDI CC#7 when the combination is changed. However this will not be transmitted by a timbre that is set to the same MIDI channel as the global MIDI channel. This message is transmitted on the “MIDI Channel” (3.1-1a) specified for each timbre.

1.1-3b: UTILITY



“Write Combination,” “Solo Selected Timbre,” “Select by Category” (1.1-1c, PROG 1.1-1a)

For details on how to select the desired utility function, refer to “PROG 1.1-1c: UTILITY.”

Hold Balance

Adjusts the volume of the Combi while preserving the volume balance between timbres 1-8.

Selects the “Volume” of any timbre, select “Hold Balance” from the Utility menu, and press the [F8] (“OK”) key. A check mark will appear at the left of “Hold Balance.” (The upper left of the LCD screen will indicate [Hold Bal.]) In this state, adjusting any “Volume” value will simultaneously change the volume of the other timbres as well, while preserving the volume balance between timbres 1-8.

1.1-4: KARMA

Here you can make KARMA settings that will be used by the combination. A combination allows up to four KARMA modules to operate simultaneously. Here you can select the GE (Generated Effect) that will be used by each KARMA module, and turn each KARMA module on/off (“Run,” “Solo” control). Other settings are made in the COMBI 6.1, 6.2, 6.3, and 6.4 pages.

The KARMA function is turned on/off by the KARMA real-time Controls [ON/OFF] key. The settings of the KARMA real-time Controls knobs [1]–[8], switches [1]/[2], [LATCH], and [SCENE] key, and the note settings/velocity of CHORD TRIGGER [1]–[4] keys can be saved independently for each combination.



1.1-4d

1.1-4a: GE Category, GE Select

The phrases and patterns produced by a KARMA module are generated by a **GE (Generated Effect)**. Based on input note data from the keyboard, the GE creates phrases and patterns using numerous internal parameter settings to control the development of the note data, the rhythm, the chord structure, the velocity etc. MIDI control changes and pitch bend etc. can also be generated in synchronization with the phrase or pattern. In this way you can produce phrases and patterns in which the GE freely varies the tone or pitch. The GE can be selected for each KARMA module. In Combination mode, you can use four KARMA modules (modules [A], [B], [C], and [D]).

GE Category [00: name...]

This displays the category of the GE selected for the KARMA module. (☞p.5 PROG 1.1-3a: KARMA GE Setup, “GE Category”)

GE Select [0000: Arp Model 1 Up/Dn...]

Select the GE. (☞p.5 PROG 1.1-3a: KARMA GE Setup, “GE Select”)

1.1-4b: GE Name, Run Check Box, Solo Check Box

GE Name

This displays the name of the GE selected in “GE Select.”

Run Check Box [Off, On]

KARMA modules that are **On (checked)** will operate.

Solo Check Box [Off, On]

Check this when you wish to audition only a specific KARMA module while KARMA is operating. Only the KARMA module that is **On (checked)** will operate. Even if “Run” is **Off (unchecked)**, the module that is **On (checked)** here will operate.

⚠ This setting will be cleared when you reselect the combination. It will not be remembered when you write the combination.

1.1-4c: Selected GE Information, Init K.RTC

This displays information on the KARMA module [A], [B], [C], or [D] that is currently being edited.

GE No., GE Name

This displays the GE number and GE name.

MIDI In/Out Ch

This displays the MIDI Input Ch (input channel) and MIDI Output Ch (output channel) of the KARMA module. These settings are made in 6.1-2: MIDI I/O, “Input Channel,” “Output Channel” (6.1-2a).

Init K.RTC (KARMA real-time Controls–Use GE’s Value) [Off, On]

Specify whether the settings of the KARMA real-time Controls knobs [1]–[8] and switches [1]/[2] will be initialized when you select a GE. This allows you to hear the phrase or pattern generated by the GE in its original state. Normally you will leave this On when selecting a GE.

☞p.5 PROG 1.1-3a: KARMA GE Setup, “Init K.RTC”

⚠ KARMA real-time Controls knobs [1]–[8] and switches [1]/[2] of the applicable KARMA module that are not assigned to GE parameters will not be initialized (☞6.3-1a “Asgn”). However if they are simultaneously assigned to GE parameters for multiple KARMA modules, they will be initialized. This may cause the state of another KARMA module to change.

1.1-4d: UTILITY

☞ “Write Combination,” “Solo Selected Timbre” (1.1-1c)

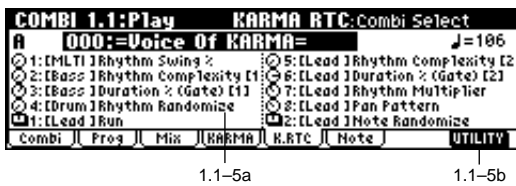
Select by Category (Select Combination by Category/Select by Category: GE)

If “Combi Select” (1.1-2a) is selected, you can select combinations by category. (☞p.44)

If “GE Select” (1.1-4a) is selected, you can select a GE by category.

For the procedure, refer to “Select by Category” (☞p.2).

1.1-5: K.RTC (KARMA RTC)



1.1-5a

1.1-5b

1.1-5a: RT Knob/SW Name

This displays the name of the KARMA real-time Controls knobs [1]–[8] and switches [1]/[2], and the knob or switch settings that are written in the combination.

The [---] portion preceding the name of the knob or switch shows the abbreviated name of the category of the program sounded by the timbre that is played by the KARMA module controlled by operations of knobs [1]–[8] and switches [1]/[2]. If there are multiple timbres with programs of differing categories, this will indicate [MLTI].

The name can be selected in COMBI 6.4-4/5: Ed-KARMA RT, Name1/2 page.

☞p.6 PROG 1.1-4a: RT Knob/SW Name

1.1-5b: UTILITY

☞“Write Combination,” “Solo Selected Timbre,” “Select by Category” (1.1-1c)

1.1-6: Note (Note Activity)



1.1-6a

1.1-6b

1.1-6a: Note Activity Display, Chord Name

Note Activity Display A, B, C, D

This is a real-time display of the note on/off status generated by each KARMA module (modules [A], [B], [C], and [D]).

The key zone settings of the four KARMA modules are displayed as a solid line. (☞p.59 COMBI 6.1-3: Key Z)

Chord Name A, B, C, D

This shows the name of the chord detected by each KARMA module.

note Chord detection is affected by the key zone (COMBI 6.1-2a: Ed-KARMA Key Zone) and “Transpose” (COMBI 6.2-1a: Module Parameter) of each KARMA module, and by the “Dynamic MIDI Destination” (COMBI 6.4-3a/b/c/d) “Chord Scan” and “Smart Scan” settings.

1.1-6b: UTILITY

☞“Write Combination,” “Solo Selected Timbre,” “Select by Category” (1.1-1c)

COMBI 2.1: Ed-Prog/Mixer

2.1-1: Prog (Timbre Program)

Indicates the bank and program for each timbre 1-8. These parameters can also be set from the 1.1: Play, Prog page.



2.1-1a

2.1-1b

2.1-1a: Program Select, Program Name

Program Select

Indicates the program that will be used by each timbre. (☞1.1-2c)

Program Name

This displays part of the program name selected for each timbre. (☞1.1-2c)

2.1-1b: UTILITY

☞“Write Combination,” “Solo Selected Timbre” (1.1-1c), “Select by Category”: Select Program by Category (Timbre) (1.1-2e)

2.1-2: Mix (Mixer)

Specifies the pan and volume for each timbre 1-8. These parameters can also be set from the 1.1: Play, Mixer page.



2.1-2a

2.1-2b

2.1-2a: Pan, Volume

Pan

Sets the pan of each timbre 1-8. (☞1.1-3a)

Volume

Sets the volume of each timbre 1-8. (☞1.1-3a)

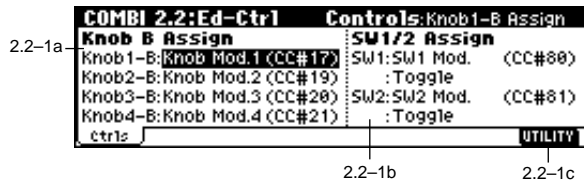
2.1-1b: UTILITY

☞“Write Combination,” “Solo Selected Timbre” (1.1-1c)

COMBI 2.2: Ed-Ctrl

Here you can set the Combination mode functions of the B-mode functions of real-time CONTROLS knobs [1]–[4], and [SW1] key, [SW2] key.

2.2–1: Ctrls (Controls)



2.2–1a: Knob B Assign

These settings assign functions (mainly various control changes) to the “B” mode of the real-time CONTROLS knobs [1]–[4] (see p.231 “Realtime Control Knobs B Assign List”).

The functions you specify here will be controlled when you operate the real-time CONTROLS knobs [1]–[4] in “B” mode.

Since the real-time CONTROLS knob [1]–[4] function of the B mode assignments made for the program assigned to each timbre are not valid for the combination, they must be newly set by these parameters.

Knob1–B (Knob1–B Assign)		[Off...MIDI CC#95]
Knob2–B (Knob2–B Assign)		[Off...MIDI CC#95]
Knob3–B (Knob3–B Assign)		[Off...MIDI CC#95]
Knob4–B (Knob4–B Assign)		[Off...MIDI CC#95]

2.2–1b: SW1/2 Assign

These settings assign the function of the [SW1] key and [SW2] key (see p.230 “SW1, SW2 Assign List”).

Since the function assignments of the [SW1] key and [SW2] key made for the program assigned to each timbre are not valid for the combination, they must be newly set by these parameters.

SW1 (SW1 Assign)		[Off...AfterT Lock]
SW1 Mode		[Toggle, Momentary]
SW2 (SW2 Assign)		[Off...AfterT Lock]
SW2 Mode		[Toggle, Momentary]

(see PROG 2.2–1b)

2.2–1c: UTILITY

☞ “Write Combination,” “Solo Selected Timbre” (1.1–1c)

COMBI 2.3: Ed-MOSS

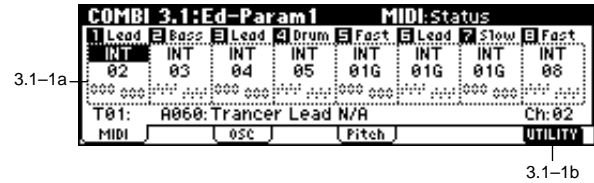
This page is displayed if the separately sold EXB-MOSS option is installed.

☞ EXB-MOSS owner’s manual & p.269 “EXB-MOSS option”

COMBI 3.1: Ed-Param 1

3.1–1: MIDI

Here you can make MIDI settings for each timbre.



3.1–1a: Status, MIDI Channel, Bank(EX2) MSB/LSB

Status [INT, Off, EXT, EX2]

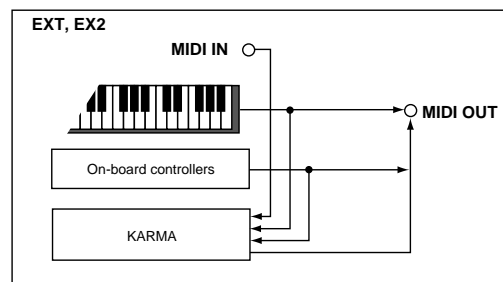
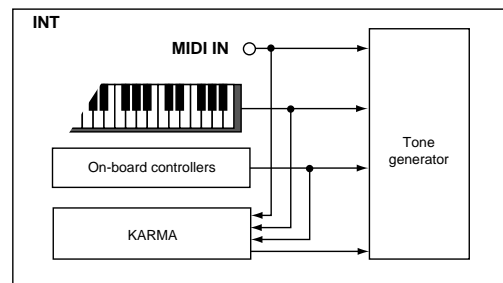
Specifies the status of MIDI and the internal tone generator for each timbre.

INT: When you play this instrument, the internal tone generator will sound, and will also sound in response to MIDI messages received from an external MIDI device.

Off: The program will not sound. Nor will MIDI data be transmitted.

EXT: Playing this instrument will not cause it to sound, but will transmit data via MIDI to control external MIDI devices.

EX2: “Bank (EX2) MSB” and “Bank (EX2) LSB” (3.1–1a) will be enabled. Instead of the bank numbers for A–G(d) that can be selected on this instrument, the bank numbers you specify here will be transmitted via MIDI. In other respects this is the same as EXT.



MIDI Channel [01...16, Gch]

Set the MIDI transmit/receive channel for each timbre 1-8.
Gch: The timbre will use the channel that has been selected as the global MIDI channel "MIDI Channel" (Global 2.1-1a).
 When "Status" is INT, MIDI messages will be received on the channel you specify here. If this setting is the same as the global MIDI channel, the internal tone generator will sound according to the internal settings. If this is set to EXT or EX2, playing this instrument will transmit MIDI messages on the MIDI channel specified here. (Messages will also be transmitted simultaneously on the global MIDI channel.)

Bank(EX2) MSB [000:000...127:127]
Bank(EX2) LSB [000:000...127:127]

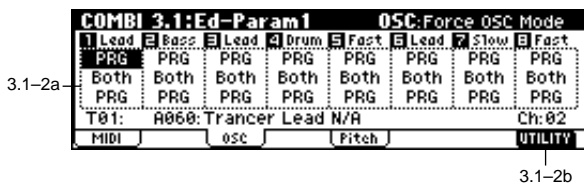
Specifies the bank number that will be transmitted when "Status" is set to EX2. If "Status" is not set to EX2, this setting has no effect.

■ **3.1-1b: UTILITY**

☞ "Write Combination," "Solo Selected Timbre" (1.1-1c)

3.1-2: OSC

These settings specify how each timbre will be sounded.



3.1-2a: Force OSC Mode, OSC Select, Portamento

Force OSC Mode [PRG, Poly, Mono, LGT]

Specifies the "Mode (Voice Assign Mode)" (PROG 2.1-1b) of the program selected for each timbre 1-8.

- PRG:** The settings of the program will be used.
- Poly:** The timbre will play polyphonically, regardless of the settings of the program.
- Mono:** The timbre will play monophonically, regardless of the settings of the program.
- LGT (Legato):** The timbre will play monophonically, with single triggering (legato).

With settings of Mono or LGT, the note priority will be according to the "Priority" (PROG 2.1-1b) setting of the program.

OSC Select [Both, OSC1, OSC2]

Specifies the "Mode (Oscillator Mode)" (PROG 2.1-1a) of the program selected for each timbre 1-8. If the "Mode (Oscillator Mode)" is Double, you can specify that either or both oscillators sound.

- Both:** OSC1 and 2 will sound as specified by the settings of the program.
- OSC1:** Only OSC1 will sound.
- OSC2:** Only OSC2 will sound. If "Mode (Oscillator Mode)" is Single or Drums, there will be no sound.

Portamento [PRG, Off, 001...127]

Indicates portamento settings for each timbre 1-8.
PRG: Portamento will be applied as specified by the program settings.
Off: Portamento will be off, even if the original program settings specified for it to be on.
001...127: Portamento will be applied with the portamento time you specify here, even if it is turned off by the program settings.

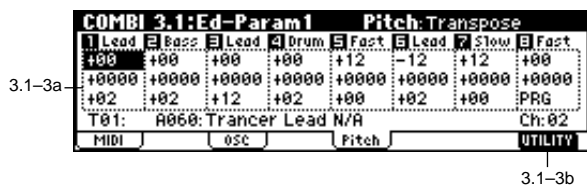
MIDI If the "Status" (3.1-1a) is set to INT, CC#05 (portamento time) and CC#65 (portamento switch) messages will be received to control and change this setting. (If the setting is PRG, CC#05 portamento time will not be received.) These messages will be received on the MIDI channel specified for each timbre by "MIDI Channel" (3.1-1a).

■ **3.1-2b: UTILITY**

☞ "Write Combination," "Solo Selected Timbre" (1.1-1c)

3.1-3: Pitch

Here you can make pitch-related settings for each timbre.



3.1-3a: Transpose, Detune, Bend Range

Transpose [-24...+24]

Adjusts the pitch of each timbre in semitone steps. 12 units equal one octave.

Detune (BPM Adj) [-1200...+1200]

Adjusts the pitch of each timbre in one-cent units. 0: Normal pitch.

note You can also use the Utility "Detune BPM Adj." (3.1-3b) page menu command to automatically make a detune setting from a calculation in BPM units.

MIDI "Transpose" and "Detune" can be controlled via MIDI RPN messages. Depending on the "Mode (Oscillator Mode)" (PROG 2.1-1a) settings of the programs used by timbres 1-8, they can be controlled as follows. When "Mode (Oscillator Mode)" is Single or Double MIDI RPN Coarse Tune can be received to control and change the setting of "Transpose," and RPN Fine Tune can be received to control and change the setting of "Detune." When "Mode (Oscillator Mode)" is Drums MIDI RPN Coarse Tune and Fine Tune can be received to control and change the setting of "Detune." The controllable range is ±1 octave for coarse tune and fine tune together.

Bend Range

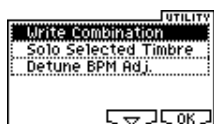
[PRG, -24...+24]

Specifies the amount of pitch change that will occur when the pitch bender is operated, in semitone units.

PRG: The pitch range specified by the program will be used. **-24+24:** This setting will be used regardless of the setting in the program.

MIDI The MIDI RPN Pitch Bend Change message can be received to control this and change the setting. (However it will not be received if this parameter is set to **PRG**.) This message is received on the MIDI channel for each timbre set by "MIDI Channel" (3.1-1a). (See p.60 COMBI 6.1-6a: Tx Filter "GE Bend")

3.1-3b: UTILITY



☞ "Write Combination," "Solo Selected Timbre" (1.1-1c)

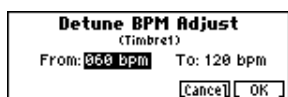
For details on how to select the desired utility function, refer to "PROG 1.1-1c: UTILITY."

Detune BPM Adj. (Detune BPM Adjust)

If the program of a timbre uses a phrase or rhythm loop multisample, you can use this Utility to modify its BPM value. "Detune BPM Adj." changes the BPM of a phrase or rhythm by modifying its pitch.

This is valid for a track when timbre "Detune" is selected. When this Utility is executed, the selected "Detune" value will be set automatically. (See PROG 2.1-2c, 2.1-3, GLOBAL 5.1-1b, 5.1-2)

① Select "Detune BPM Adj." to access the dialog box.



② In "From" specify the original BPM value. In "To" specify the desired BPM value. The appropriate "Detune" value will be calculated automatically from these two values.

For example if you set "From" to **60bpm** and "To" to **120bpm**, the "Detune" parameter will be set to +1200 (one octave up).

③ To execute the Detune BPM Adjust command, press the [F8] ("OK") key. To cancel, press the [F7] ("Cancel") key.

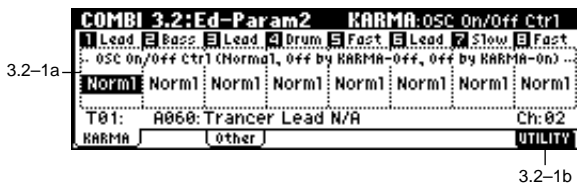
Note The detune value that is calculated when you execute this command will be added to "Detune" +0000. You must set the "From" BPM value to the value when "Detune" is +0000. For example if you execute "From" **60bpm** "To" **120bpm**, and then execute "From" **120bpm** "To" **60bpm**, will not return to the original result. (Rather, this will set Detune= -1200, which is one octave down.)

note This command is valid when "Detune" (3.1-3a) is selected.

COMBI 3.2: Ed-Param2

3.2-1: KARMA

Use the ON/OFF settings to choose which timbre will sound.



3.2-1a: OSC On/Off Ctrl

OSC On/Off Ctrl [Norml, by Off, by On]

Norml (Normal): The KARMA [ON/OFF] key will not control whether a timbre will sound. Normally you will select **Norml**.

by Off (Off by KARMA-Off): The timbre will sound as usual when the KARMA [ON/OFF] key is **on**. The timbre will not sound when the KARMA [ON/OFF] key is **off**.

Use this when you want a specific timbre of multiple timbres set to the same MIDI channel to be silent only when KARMA is off.

by On (Off by KARMA-On): The timbre will not sound when the KARMA [ON/OFF] key is **on**. The timbre will sound as usual when the KARMA [ON/OFF] key is **off**.

Use this when you are using a KARMA module to control multiple timbres that are set to the same MIDI channel, and want a specific timbre to be silent only when the KARMA function is on.

For example you can use this to play a two-timbre layer from the keyboard when KARMA is off, and use one timbre to sound the phrase when KARMA is on.

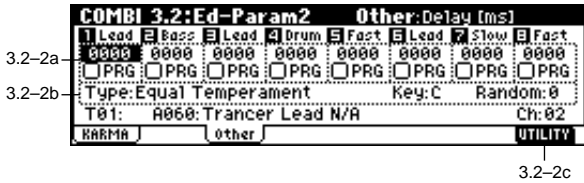
If the "Status" (3.1-1a) of each timbre is **INT**, you can use the "OSC On/Off Ctrl" setting to stop the oscillator of each timbre from sounding.

3.2-1b: UTILITY

☞ "Write Combination," "Solo Selected Timbre" (1.1-1c)

3.2-2: Other

Specifies the delay from note-on until sound is produced for each timbre. Also specifies the scale.



3.2-2a: Delay [ms], Use Prog's Scale

Delay [ms] [0000...5000, KeyOff]

Specifies a delay time from note-on until the sound begins for each timbre.

KeyOff: The note will begin sounding at note-off. In this case, the sound will not die away if the sustain level of the program's amp EG is other than 0. This setting is used when creating harpsichord sounds. Normally you will set this to 0.

Use Prog's Scale [Off, On]

Each timbre can use the scale that is specified by "Scale" (PROG 2.1-1c).

On (checked): The scale specified by the program will be used.

Off (unchecked): The scale specified by "Type (Combi's Scale)" (3.2-2b) will be used.

3.2-2b: Combi's Scale, Key, Random

Specifies the scale that the combination will use.

Type (Combi's Scale) [Equal Temperament...User Octave15]

Indicates the type of scale.

☞ "Type (Scale Type)" (PROG 2.1-1c)

Key [C...B]

Indicates the tonic key of the selected scale.

☞ "Key" (PROG 2.1-1c)

Random [0...7]

As this **value is increased**, an increasingly random deviation will be added to the pitch at each note-on.

☞ "Random" (PROG 2.1-1c)

3.2-2c: UTILITY

☞ "Write Combination," "Solo Selected Timbre" (1.1-1c)

COMBI 3.3: Ed-Key Zone

These settings specify the keyboard range in which each timbre will sound.

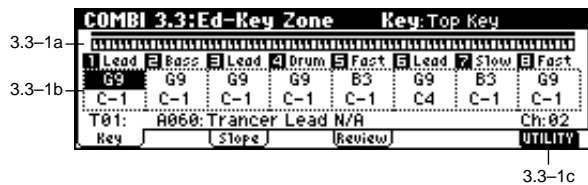
The top/bottom key parameters specify the range of notes in which **timbres 1-8** will sound, and the top/bottom slope parameters specify the range over which the original volume will be reached.

By setting timbres of different sounds to ranges that do not overlap, you can play different sounds in different ranges of the keyboard (**Key Split**).

By setting the ranges to overlap, you can play two or more sounds with a single note (**Layer**).

If you set the slopes (the grayed portion) to overlap, the sounds will overlap, and the proportion of the overlap will change according to the keyboard location (**Positional Cross-fade**).

3.3-1: Key (Key Zone)



3.3-1a: Key Zone Map (1)



This displays the range of note data that will sound the currently selected track. The range of notes sounded is shown as a line, and the slope portion is shaded.

3.3-1b: Top Key, Bottom Key

Top Key [C-1...G9]

Specifies the top key (upper limit) of the notes that will sound each timbre 1-8.

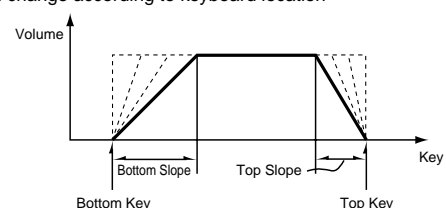
Bottom Key [C-1...G9]

Specifies the bottom key (lower limit) of the notes that will sound each timbre 1-8.

note You can also set this parameter by holding down the [ENTER] key and playing a note.

⚠ It is not possible to set the bottom key above the top key of the same timbre. Nor is it possible for the top and bottom slopes to overlap.

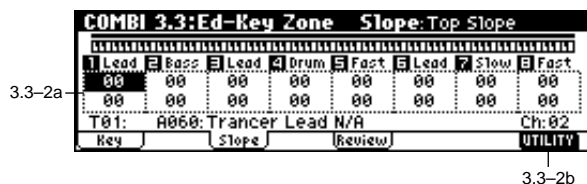
How volume will change according to keyboard location



■ 3.3-1c: UTILITY

☞ “Write Combination,” “Solo Selected Timbre” (1.1-1c)

3.3-2: Slope (Key Slope)



3.3-2a

3.3-2b

3.3-2a: Top Slope, Bottom Slope

Top Slope [00...72]

Specifies the range of keys (12 is one octave) over which the volume will be reached starting from the top key.

0: The volume will be at the original level from the top key.

12: The volume will increase gradually as you play downward, and will reach the original volume one octave below the top key.

60: The volume will increase gradually as you play downward, and will reach the original volume five octaves below the top key.

Bottom Slope [00...72]

Specifies the range of keys (12 is one octave) over which the volume will be reached starting from the bottom key.

0: The volume will be at the original level from the bottom key.

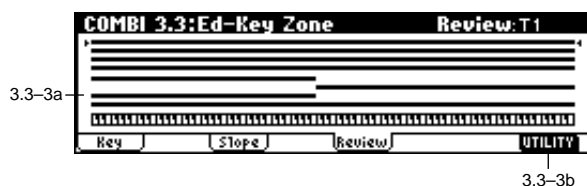
12: The volume will increase gradually as you play upward, and will reach the original volume one octave above the bottom key.

60: The volume will increase gradually as you play upward, and will reach the original volume five octaves above the bottom key.

■ 3.3-2b: UTILITY

☞ “Write Combination,” “Solo Selected Timbre” (1.1-1c)

3.3-3: Review



3.3-3a

3.3-3b

3.3-3a: Key Zone Map (All)

T1...T8

This displays the range of note data that will sound timbres 1-8. The range of notes sounded is shown as a line, and the slope portion is shaded.

■ 3.3-3b: UTILITY

☞ “Write Combination,” “Solo Selected Timbre” (1.1-1d)

COMBI 3.4: Ed-Vel Zone (Velocity Zone)

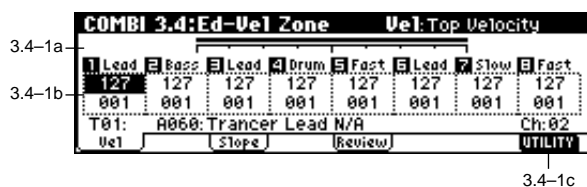
Sets the Top/Bottom Velocity parameters to specify the range of velocities that will sound each **timbre 1-8**, and sets the Top/Bottom Slope parameters to specify the range over which the volume will change.

By setting two or more timbres to velocity zones that do not overlap, you can use variations in playing dynamics to play different sounds (**Velocity Switch**).

If you set two or more timbres to velocity zones that overlap, the sounds will be heard together (**Layer**).

If the slope ranges (gray line) overlap, different sounds will be sounded together, and your playing dynamics will determine the proportion of each sound (**Velocity Cross-fade**).

3.4-1: Vel (Velocity Zone)

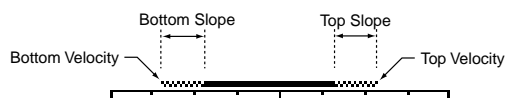


3.4-1a

3.4-1b

3.4-1c

3.4-1a: Velocity Zone Map (1)



This displays the range of velocities that will sound the currently selected timbre. The range of velocities sounded is shown as a line, and the slope portion is shaded.

3.4-1b: Top Velocity, Bottom Velocity

Top Velocity [1...127]

Specifies the maximum velocity value that will sound each timbre 1-8.

Bottom Velocity [1...127]

Specifies the minimum velocity value that will sound each timbre 1-8.

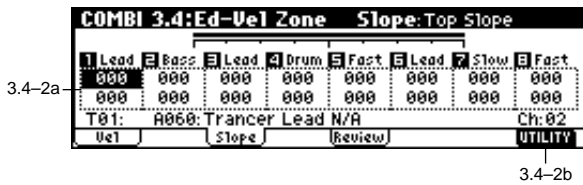
note You can also set this parameter by holding down the [ENTER] key and playing a note.

! It is not possible to set the bottom velocity greater than the top velocity for the same timbre. Nor can the top slope and the bottom slope overlap.

■ 3.4-1c: UTILITY

☞ “Write Combination,” “Solo Selected Timbre” (1.1-1c)

3.4-2: Slope (Velocity Slope)



3.4-2a: Top Slope, Bottom Slope

Top Slope [0...120]

Specifies the number of velocity steps over which the original volume will be reached, starting from the Top Velocity.

0: The volume will be at the original value from the top velocity.

120: The volume will decrease as the velocity approaches the top velocity.

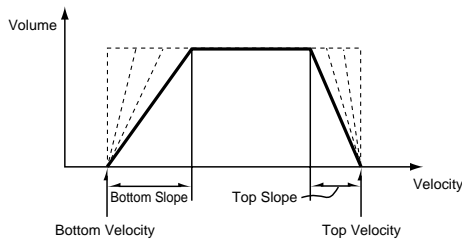
Bottom Slope [0...120]

Specifies the number of velocity steps over which the original volume will be reached, starting from the Bottom Velocity.

0: The volume will be at the original value from the bottom velocity.

120: The volume will decrease as the velocity approaches the bottom velocity.

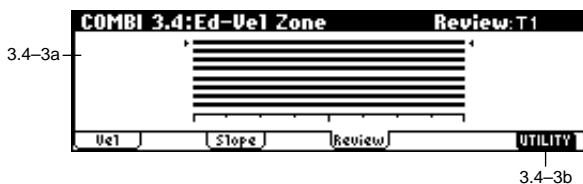
How volume will change according to keyboard location



■ 3.4-2b: UTILITY

☞ "Write Combination," "Solo Selected Timbre" (1.1-1c)

3.4-3: Review



3.4-3a: Velocity Zone Map (All)

T1...T8

Specifies the range of velocities for which each timbre will sound.

The range of velocities sounded is shown as a line, and the slope portion is shaded.

■ 3.4-3b: UTILITY

☞ "Write Combination," "Solo Selected Timbre" (1.1-1c)

COMBI 4.1: Ed-MIDI Filter 1

These settings allow you to apply filters to the MIDI data that will be transmitted and received by each timbre 1-8. For example even if two timbres are being played by the same MIDI channel, you can make settings so that the damper pedal will apply to one but not the other.

On (checked): Transmission and reception of MIDI data is enabled.

When "Status" (3.1-1a) is INT, operations of the built-in controllers or incoming MIDI data will apply the effect of the checked item to the program of the corresponding timbre. (The effect dynamic modulation function is not affected by this setting.) When "Status" is EXT or EX2, operations of the built-in controllers will transmit MIDI data on the channel of that timbre. MIDI transmission and reception settings for this instrument are made in "MIDI Filter" (GLOBAL 2.1-1b).

The MIDI Filter 3 and MIDI Filter 4 pages contain MIDI filters for assignable controllers (whose function can be set by the user), and if these are assigned to MIDI control changes, the filter settings will affect those control changes.

In this case, if the assignable controllers have been set to control changes that are also found in the MIDI Filter 1 or MIDI Filter 2 pages, the settings in the MIDI Filter 1 and MIDI Filter 2 pages will take priority. Also, if the same control change is assigned to two or more controllers in the MIDI Filter 3 and MIDI Filter 4 pages, checking any one of them will enable that control change.

Off (unchecked): Transmission and reception of MIDI data is disabled.

4.1-1: MIDI 1-1 (MIDI Filter 1-1)



4.1-1a: Program Change, After Touch

Program Change [Off, On]

Specifies whether or not MIDI program change messages will be transmitted and received.

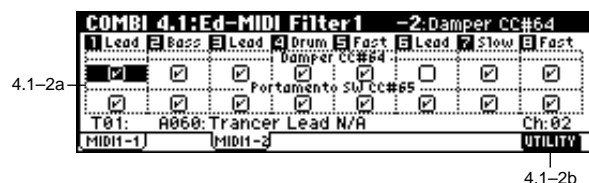
After Touch [Off, On]

Specify whether or not MIDI after touch messages will be transmitted and received.

■ 4.1-1b: UTILITY

☞ "Write Combination," "Solo Selected Timbre" (1.1-1c)

4.1-2: MIDI 1-2 (MIDI Filter 1-2)



4.1-2a: Damper CC#64, Portamento SW CC#65

Damper CC#64 [Off, On]

Specifies whether or not MIDI control change message #64 hold (damper pedal) messages will be transmitted and received.

Portamento SW CC#65 [Off, On]

Specifies whether or not MIDI control change message #65 portamento on/off messages will be transmitted and received.

■ 4.1-2b: UTILITY

☞ “Write Combination,” “Solo Selected Timbre” (1.1-1c)

COMBI 4.2: Ed-MIDI Filter2

4.2-1: MIDI 2-1 (MIDI Filter 2-1)



4.2-1a: JS+Y CC#01, JS-Y CC#02

JS+Y CC#01 [Off, On]

Specifies whether or not MIDI control change #1 (the +Y axis of this instrument’s joystick, or specified as the “B” assignment of a real-time control knob) will be transmitted or received.

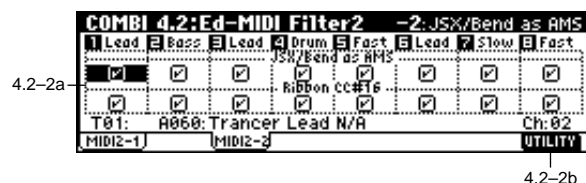
JS-Y CC#02 [Off, On]

Specifies whether or not MIDI control change #2 (the -Y axis of this instrument’s joystick, or specified as the “B” assignment of a real-time control knob) will be transmitted or received.

■ 4.2-1b: UTILITY

☞ “Write Combination,” “Solo Selected Timbre” (1.1-1c)

4.2-2: MIDI 2-2 (MIDI Filter 2-2)



4.2-2a: JS X/Bend as AMS, Ribbon CC#16

JS X/Bend as AMS [Off, On]

Specifies whether or not MIDI pitch bend messages (the X axis of this instrument’s joystick) will be received to control the AMS (esp.221 “Alternate Modulation Source”) effect assigned to JS X. (This is not a filter for MIDI pitch bend message reception.)

Ribbon CC#16 [Off, On]

Specifies whether MIDI control change message #16 (selected as assignment B for real-time CONTROLS [1]-[4] knobs, or assigned to the ribbon controller of a TRITON etc.) will be transmitted or received.

■ 4.2-2b: UTILITY

☞ “Write Combination,” “Solo Selected Timbre” (1.1-1c)

COMBI 4.3: Ed-MIDI Filter3

Specifies whether the A and B mode effects of real-time CONTROLS knobs [1], [2], [3], and [4] will be transmitted and received. The A mode of each knob is fixed as a MIDI control change message. For B mode, you can assign a MIDI control change message in 2.2: Ed-Ctrl.

4.3-1: MIDI 3-1 (MIDI Filter 3-1)

4.3-2: MIDI 3-2 (MIDI Filter 3-2)



4.3-1a: real-time Control Knob 1, 2

Knob1 [Off, On]

Specifies whether MIDI control change message #74 (internal low pass filter cutoff frequency) for the A mode of knob [1] and the MIDI control change message assigned to the B mode of knob [1] will be transmitted and received.

Knob2 [Off, On]

Specifies whether MIDI control change message #71 (internal low pass filter resonance or high pass filter cutoff frequency) for the A mode of knob [2] and the MIDI control change message assigned to the B mode of knob [2] will be transmitted and received.

4.3-2a: Real-time Control Knob 3, 4

Knob3 [Off, On]

Specifies whether MIDI control change message #79 (internal filter EG intensity) for the A mode of knob [3] and the MIDI control change message assigned to the B mode of knob [3] will be transmitted and received.

Knob4 [Off, On]

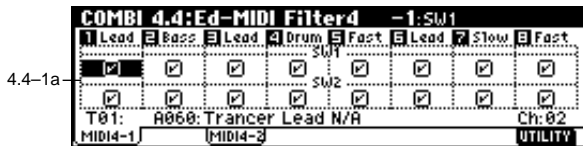
Specifies whether MIDI control change message #72 (internal filter and amp EG release time) for the A mode of knob [4] and the MIDI control change message assigned to the B mode of knob [4] will be transmitted and received.

■ **4.3-1(2)b: UTILITY**

☞ "Write Combination," "Solo Selected Timbre" (1.1-1c)

COMBI 4.4: Ed-MIDI Filter4

4.4-1: MIDI 4-1 (MIDI Filter 4-1)



4.4-1b

4.4-1a: SW1, SW2

SW1, SW2 [Off, On]

Specifies whether or not the effect of the [SW1] key and [SW2] key will be transmitted and received. [SW1] key and [SW2] key correspond to the control change messages specified in 2.2: Ed-Ctrl. This filter setting is valid for settings of SW1 Mod.(CC#80), SW2 Mod.(CC#81), or Porta.SW(CC#65).

■ **4.4-1b: UTILITY**

☞ "Write Combination," "Solo Selected Timbre" (1.1-1c)

4.4-2: MIDI 4-2 (MIDI Filter 4-2)



4.4-2b

4.4-2a: Foot Pedal/Switch, Other Control Change

FootPedal/Switch [Off, On]

Specifies whether or not the effect of the ASSIGNABLE PEDAL/SWITCH will be transmitted and received. The function is assigned in GLOBAL 6.1-1a.

This filter setting is valid when a MIDI control change is assigned.

Other Ctrl Change [Off, On]

Specifies whether or not MIDI control change message not covered in the preceding items MIDI Filter 1-4 will be transmitted and received.

■ **4.4-2b: UTILITY**

☞ "Write Combination," "Solo Selected Timbre" (1.1-1c)

COMBI 6.1: Ed-KARMA

Here you can make KARMA function settings for the combination.

In Combination mode you can use four KARMA modules (modules [A], [B], [C], and [D]).

A combination allows you to make a wide variety of setups, such as assigning different phrases or patterns to programs such as drums, bass, guitar, and strings, or combining the four KARMA modules with eight timbre programs.

When you switch programs, these settings will automatically change to the KARMA function settings stored in that combination. (☞ GLOBAL 1.1-1c: System Basic, Auto KARMA “Combi”: On)

KARMA function can be switched on/off by the KARMA real-time Controls [ON/OFF] key.

The state of the KARMA real-time Controls knobs [1]–[8], switches [1]/[2], [LATCH] and [SCENE] keys, and the note settings/velocity of the CHORD TRIGGER [1]–[4] keys can be saved independently for each combination.

⚠ These settings are valid if Auto KARMA “Combi” must be On.

note The parameters of 6.1-1: Setup can also be set from the COMBI 1.1-4: KARMA page.

6.1-1: Setup



6.1-1d

6.1-1a: GE Category, GE Select

GE Category [00: name...]
 GE Select [0000: Arp Model 1 Up/Dn...]

☞ p.47 1.1-4a: GE Category, GE Select

6.1-1b: GE Name, Run Check Box, Solo Check Box

GE Name
 Run Check Box [Off, On]
 Solo Check Box [Off, On]

☞ p.47 1.1-4b: GE Name, Run Check Box, Solo Check Box

6.1-1c: Selected GE Information, Init K.RTC

GE No., GE Name
 MIDI In/Out Ch
 Init K.RTC (KARMA real-time Controls– Use GE’s Value)
 [Off, On]

☞ p.47 1.1-4c: Selected GE Information, Init K.RTC

6.1-1d: UTILITY



- ☞ “Write Combination,” “Solo Selected Timbre” (1.1-1c)
- “Copy KARMA Module” (PROG 6.1-1d)
- “Select by Category” (1.1-4d)

For the procedure, refer to “Select by Category” (☞ p.2).

Init KARMA Module (Initialize KARMA Module)

This initializes the settings of a KARMA module.

⚠ The GE selection will not be initialized. The values of the GE parameters will be set to the default values that are preset for the selected GE. Nor will the “Input Channel” and “Output Channel” (6.2-2a) settings be initialized.

- ① Select “Initialize KARMA Module” to access the dialog box.



- ② Use “Module” to select the KARMA module that you wish to initialize. If you select **All**, all KARMA modules [A], [B], [C], and [D] will be initialized.
- ③ If you want the KARMA RT parameters and KARMA real-time Controls settings to be initialized as well, check “KARMA RT&Panel Setting.”

Settings initialized by “KARMA RT&Panel Setting”

- 6.4: Ed-KARMA RT settings (RT Parm, DynMIDI, Name)
- KARMA real-time Controls knobs [1]–[8], switch [1]/[2], [SCENE] key, [LATCH] key settings
- CHORD TRIGGER [1]–[4] key settings

- ④ To execute the initialization, press the [F8] (“OK”) key. To cancel without executing, press the [F7] (“Cancel”) key.

6.1-2: MIDI I/O

Specifies the MIDI input/output channels for the four KARMA modules used by the combination.

MIDI data from the keyboard or from MIDI IN that matches the MIDI input channel specified for a KARMA module will be input to that KARMA module. (See the diagram below, “KARMA-MIDI Input/Output Channel.”)

MIDI data will be transmitted from a KARMA module on the MIDI output channel specified for that KARMA module, and will sound timbres that match that channel.



6.1-2a

6.1-2b

6.1-2a: Input Channel, Output Channel, T.Thru (KRM Off)

A/B/C/D Input Channel [01...16, Gch]

Specifies the MIDI input channel for each KARMA module. MIDI data from the keyboard or from MIDI IN that matches the specified MIDI channel will be input to the KARMA module.

Gch: The MIDI channel will always match the global MIDI channel “MIDI Channel” (GLOBAL 2.1-1a). When using KARMA with keyboard playing in Combination mode, you will normally select Gch.

A/B/C/D Output Channel [01...16, Gch]

Specifies the MIDI output channel for each KARMA module.

The MIDI data from the KARMA module will be transmitted on the specified MIDI channel, and will sound timbres whose channel matches.

Gch: The MIDI channel will always match the global MIDI channel “MIDI Channel” (GLOBAL 2.1-1a).

KARMA Routing Map

This shows the timbres that will be sounded by each KARMA module, according to the MIDI output channel settings of each KARMA module and the MIDI channel of each timbre (3.1-1a).

Timb Thru (T.Thru (KRM Off))

[Off, On]

“Input Channel” and “Output Channel” settings are normally valid only when the KARMA [ON/OFF] key is **on**. As an exception, “Timb Thru” specifies whether MIDI data that has passed through the KARMA module will be sent (Thru) to timbres when the KARMA [ON/OFF] key is off.

On (checked): When the KARMA [ON/OFF] key is **off**, MIDI data that has passed through the KARMA module will be sent via the “Output Channel” to timbres.

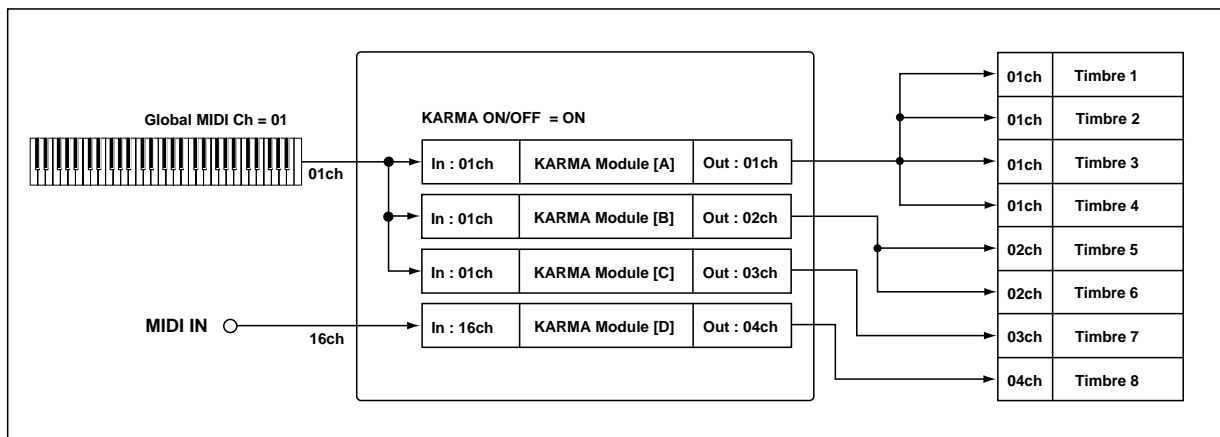
Off (unchecked): When the KARMA [ON/OFF] key is **off**, MIDI data that has passed through the KARMA module will not be sent to timbres.

If you wish to apply separate phrases or patterns by using KARMA module [A] for timbre 1 and KARMA module [B], set the MIDI channels as follows.

[Example setting 1]

- Set the global MIDI channel “MIDI Channel” (GLOBAL 2.1-1a) to **01**.
- Set timbre 1 as follows.
“Program Select”: **Bass** program
“MIDI Channel” (3.1-1a): **Gch**
- Set timbre 2 as follows.
“Program Select”: **Piano** program
“MIDI Channel” (3.1-1a): **02**
- Set KARMA module [A] as follows.
“GE Select”: A riff of GE category **Bass**
“Input Channel”: **Gch**
“Output Channel”: **Gch**
“Timb Thru”: **Off**
- Set KARMA module [B] as follows.
“GE Select”: A riff of GE category **Keyboard**
“Input Channel”: **Gch**
“Output Channel”: **02**
“Timb Thru”: **Off**
- Turn the KARMA [ON/OFF] key **on**.
When you play the keyboard, KARMA module [A] will play the bass of timbre 1, and KARMA module [B] will play the piano of timbre 2. (See “KARMA ON/OFF=ON (1)(2)” in the diagram at the bottom of the next page.)

KARMA - MIDI Input / Output Channel



- ⑦ Turn the KARMA [ON/OFF] key **off**.
When you play the keyboard, you will hear the bass of timbre 1, whose MIDI channel is set to **Gch**. Since timbre 2 is set to MIDI channel 2, it will not sound in response to the keyboard. (See “KARMA ON/OFF=OFF (1)” in the diagram below.)

[Example setting 2]

- ① Make settings ①–③ of [Example setting 1].
- ② Set KARMA module [A] as follows.
“GE Select”: A riff of GE category **Bass**
“Input Channel”: **Gch**
“Output Channel”: **Gch**
“Timb Thru”: **Off**
- ③ Set KARMA module [B] as follows.
“GE Select”: A riff of GE category **Keyboard**
“Input Channel”: **Gch**
“Output Channel”: **02**
“Timb Thru”: **On**
- ④ Turn the KARMA [ON/OFF] key **on**.
When you play the keyboard, the result will be the same as for ⑥ in [Example setting 1]. (See “KARMA ON/OFF=ON (1)(2)” in the diagram below.)
- ⑤ Turn the KARMA [ON/OFF] key **off**.
When you play the keyboard, you will hear the bass timbre, whose MIDI channel is Gch. The piano of timbre 2 will also be played by the keyboard because of the “Timb Thru” ON setting of KARMA module [B]. (See “KARMA ON/OFF=OFF (2)” in the diagram below.)

6.1-2b: UTILITY

- “Write Combination,” “Solo Selected Timbre” (1.1-1c)
- “Copy KARMA Module” (PROG 6.1-1c)
- “Init KARMA Module” (6.1-1d)
- “Select by Category” (1.1-4d)

6.1-3: Key Z (KeyZone)

p.27 PROG 6.1-2a: Key Z/Thru

MIDI In Combination mode, MIDI data for each KARMA module is transmitted and received on the “Input Channel” and “Output Channel” (6.1-2a) that you specify for each module.

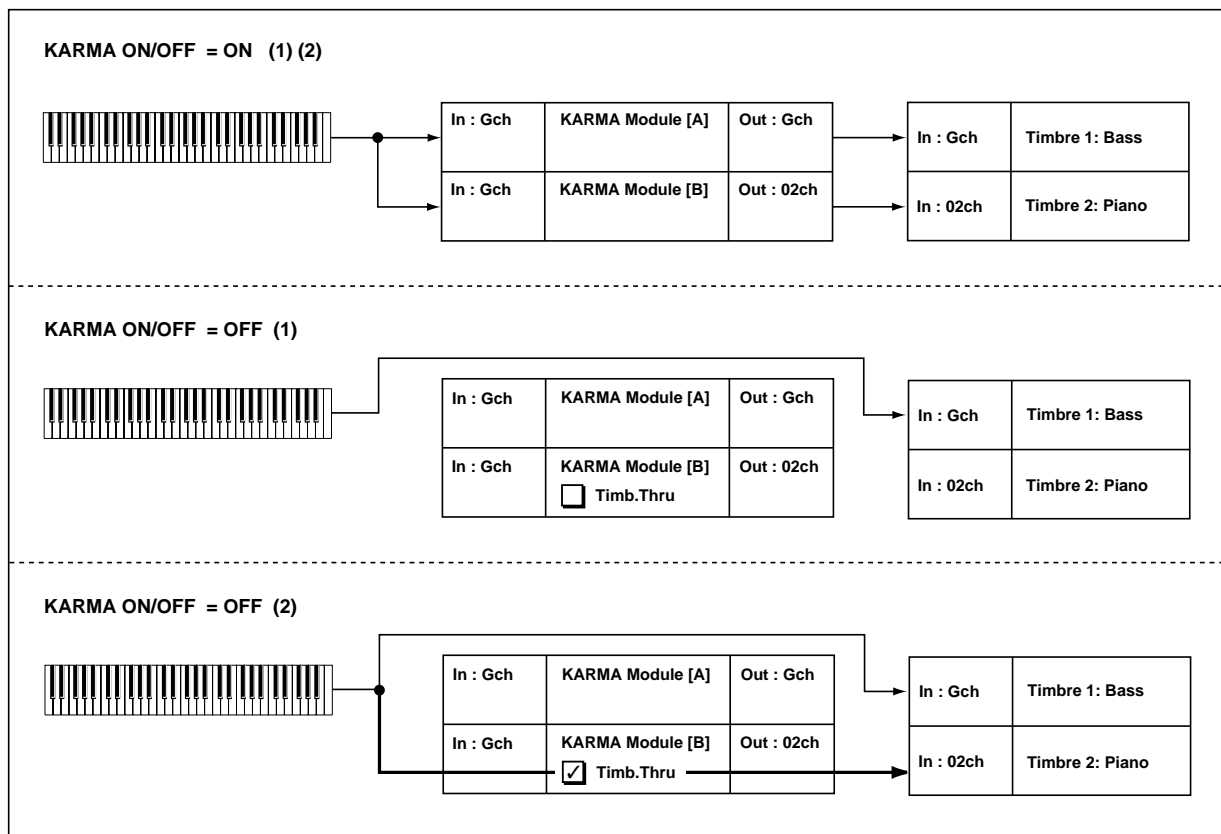


6.1-3a: Zone Map, KeyZone Bottom, KeyZone Top

Zone Map

The key zone settings of each of the four KARMA modules are displayed as a solid line.

p.27 PROG 6.1-2a: Key Z/Thru, “Zone Map”



A/B/C/D KeyZone Bottom [C-1...G9]

Specifies the bottom key (lower limit) of the key zone.

A/B/C/D KeyZone Top [C-1...G9]

Specifies the top key (upper limit) of the key zone.

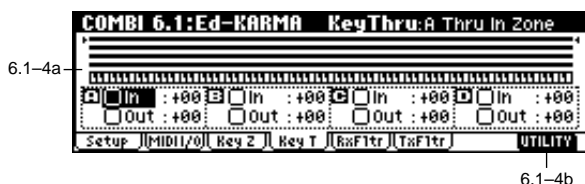
note These parameters can also be set by holding down the [Enter] key and playing a note.

■ **6.1-3b: UTILITY**

- ☞ "Write Combination," "Solo Selected Timbre" (1.1-1c)
- "Copy KARMA Module" (PROG 6.1-1c)
- "Init KARMA Module" (6.1-1c)
- "Select by Category" (1.1-4d)

6.1-4: Key T (Key Thru)

☞ p.27 PROG 6.1-2b: Key Z/Thru



6.1-4b

6.1-4a: Thru In Zone, Transpose InZ, Thru Out Zone, Transpose OutZ

- A/B/C/D Thru In Zone [Off, On]
- A/B/C/D Transpose InZ [-36...+36]
- A/B/C/D Thru Out Zone [Off, On]
- A/B/C/D Transpose OutZ [-36...+36]

☞ p.27 PROG 6.1-2b: Key Z/Thru

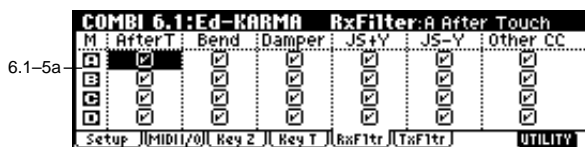
■ **6.1-4b: UTILITY**

- ☞ "Write Combination," "Solo Selected Timbre" (1.1-1c)
- "Copy KARMA Module" (PROG 6.1-1c)
- "Init KARMA Module" (6.1-1d)
- "Select by Category" (1.1-4d)

6.1-5: RxFltr (Receive Filter)

For each KARMA module ([A]-[D]), specify whether to filter the MIDI control data received by the module.

☞ p.28 PROG 6.1-3a: Rx Filter



6.1-5b

6.1-5a: Rx Filter

- A/B/C/D AfterT (After Touch) [Off, On]
- A/B/C/D Bend (Pitch Bend) [Off, On]
- A/B/C/D Damper (Damper CC#64) [Off, On]
- A/B/C/D JS+Y (JS+Y CC#01) [Off, On]
- A/B/C/D JS-Y (JS-Y CC#02) [Off, On]
- A/B/C/D Other CC [Off, On]

☞ p.28 PROG 6.1-3a: Rx Filter

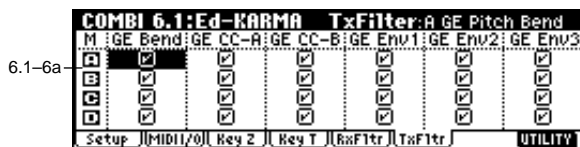
■ **6.1-5b: UTILITY**

- ☞ "Write Combination," "Solo Selected Timbre" (1.1-1c)
- "Copy KARMA Module" (PROG 6.1-1c)
- "Init KARMA Module" (6.1-1d)
- "Select by Category" (1.1-4d)

6.1-6: TxFltr (Transmit Filter)

For each KARMA module ([A]-[D]), specify whether to filter the MIDI control data generated by the GE selected for the module.

☞ p.28 PROG 6.1-4a: Tx Filter



6.1-6b

6.1-6a: Tx Filter

- A/B/C/D GE Bend (GE Pitch Bend) [Off, On]

☞ p.28 PROG 6.1-4a: Tx Filter

⚠ If the KARMA function is on and a KARMA module is generating pitch bend data, the Bend Range (3.1-3a) of the timbre will be controlled as follows.

The pitch bend range specified within the KARMA GE will be transmitted from the KARMA module so that the corresponding timbre will be forcibly set to this bend range. This ensures that the pitch bend data generated by the KARMA module's GE will function as intended. At this time, pitch bender data produced by operating the joystick will automatically be adjusted to produce the same bend effect as when KARMA is off (in most cases). (If multiple timbres are being controlled by one KARMA module, the settings of the lowest-numbered timbre will be used.)

A/B/C/D GE CC-A [Off, On]
 A/B/C/D GE CC-B [Off, On]
 A/B/C/D GE Env.1 [Off, On]
 A/B/C/D GE Env.2 [Off, On]
 A/B/C/D GE Env.3 [Off, On]

☞ p.28 PROG 6.1-4a: Tx Filter

■ 6.1-6b: UTILITY

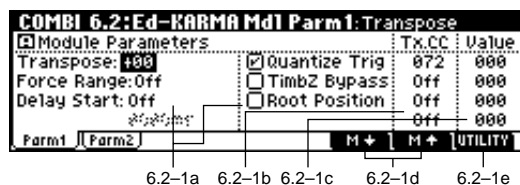
☞ “Write Combination,” “Solo Selected Timbre” (1.1-1c)
 “Copy KARMA Module” (PROG 6.1-1c)
 “Init KARMA Module” (6.1-1d)
 “Select by Category” (1.1-4d)

COMBI: 6.2 Ed-KARMA Mdl

6.2-1: Parm1 (Parameter 1)

Here you can set KARMA module parameters. In Combination mode, four KARMA modules ([A], [B], [C], [D]) can be used.

Use the [F6] (“**M+**”) key and [F7] (“**M+**”) key (6.2-1d) to select the KARMA module that you wish to edit.



6.2-1a: Module Parameter

The selected KARMA module is displayed as [A], [B], [C], or [D].

Transpose [-36...+36]

Force Range [Off, Lowest, Highest, C3-B3[1], C3-B3[2]]

Delay Start [Off, Fixed, $\frac{1}{3}$...4x $\frac{1}{3}$]

Delay Start Fixed [0000 ms...5000 ms]

Quantize Trig [Off, On]

☞ p.29 PROG 6.2-1a: Module Parameter, BG p.88 “About the KARMA function — KARMA function synchronization”

TimbZ Bypass (TimbZone Bypass) [Off, On]

Specifies whether the key zone settings (3.3-1b) and velocity zone settings (3.4-1b) of the timbre will be applied to the phrase or pattern generated by the KARMA module.

On (checked): The key zone settings and velocity zone settings of the timbre will be bypassed for the phrase or pattern generated by the KARMA module. The settings of the timbre will be ignored, and the notes generated by the KARMA module will be sounded.

Off (unchecked): The key zone settings and velocity zone settings of the timbre will be applied to the phrase or pattern generated by the KARMA module. Notes generated by the KARMA module will not be sounded if they are outside the key zone or velocity zone of the timbre.

Root Position [Off, On]

☞ p.29 PROG 6.2-1a: Module Parameter

6.2-1b: Tx CC (Transmit CC)

☞ p.30 PROG 6.2-1b: Tx CC

These messages will be transmitted on the “Output Channel” (6.1-2a) of the KARMA module.

Tx CC1...4 Number [Off, 000...095]

☞ p.30 PROG 6.2-1b: Tx CC

6.2-1c: Value (Tx CC Value)

Value (Tx CC1...4 Value) [000...127]

☞ p.30 PROG 6.2-1c: Value (Tx CC Value)

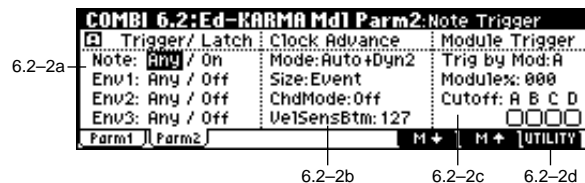
6.2-1d: **M+**, **M+**

Use the [F6] (“**M+**”) key and [F7] (“**M+**”) key to select the KARMA module that you wish to edit.

■ 6.2-1e: UTILITY

☞ “Write Combination,” “Solo Selected Timbre” (1.1-1c)
 “Copy KARMA Module” (PROG 6.1-1c)
 “Init KARMA Module” (6.1-1d)
 “Select by Category” (1.1-4d)

6.2-2: Parm2 (Parameter 2)



6.2-2a: Trigger/Latch

Specifies the trigger conditions and latch on/off for the GE that is selected for each KARMA module [A]-[D].

Note:

Note Trigger [Any, AKR, 1st, Dyn]

☞ p.31 PROG 6.2-2a: Trigger/Latch, “Note Trigger”

Note Latch

[On, Off]

☞ p.31 PROG 6.2-2a: Trigger/Latch, "Note Latch"

In Combination mode, this can be turned on/off for each KARMA module. A KARMA module for which this is turned **on** will be in a **Latch On** condition when the [LATCH] key is on (LED lit).

☞ p.31 PROG 6.2-2a: Trigger/Latch, "Note Latch"

Env1/Env2/Env3:

Env1 Trigger/Env2 Trigger/Env3 Trigger

[Any, AKR, 1st, Dyn]

Env1 Latch/Env2 Latch/Env3 Latch

[Off, Sus1, Rel1, Sus2, Rel2]

☞ p.31 PROG 6.2-2a: Trigger/Latch

6.2-2b: Clock Advance

☞ p.32 PROG 6.2-2b: Clock Advance

Mode (Clk Adv. Mode) [Auto...Auto+Dyn2]

Size (Clk Adv. Size) [3...7, Event]

ChdMode (Chord Mode)
[Off, 1st, Chrd1, Chrd2, Chrd3]

VelSensBtm (Vel Sens Bottom) [001...127]

☞ p.32 PROG 6.2-2b: Clock Advance

6.2-2c: Module Trigger

Trigger by Mod (Trigger by Module) [Off, A, B, C, D]

Note and envelope triggering of a KARMA module can be controlled by the operation of another KARMA module. When the KARMA module you specify here advances by the length specified in "Module%," the KARMA module itself will be triggered automatically, starting the phrase or pattern.

For example you could make settings so that harp glissando phrases specified for each KARMA module are triggered consecutively. Alternatively, you could make settings so that the four KARMA modules are connected in series, and play repeatedly.

Module% [000...100]

This is valid except when "Trigger by Mod" is Off.

Cutoff (Cutoff Module) [Off, On]

This specifies whether the phrase or pattern generated by other KARMA modules will be stopped automatically when a KARMA module is triggered. Use this setting in cases when KARMA modules are being triggered successively one after the other, and you do not want the phrases to overlap.

On (checked): When a KARMA module is triggered, other KARMA modules that are checked will stop.

6.2-2d: UTILITY

☞ "Write Combination," "Solo Selected Timbre" (1.1-1c)
"Copy KARMA Module" (PROG 6.1-1c)
"Init KARMA Module" (6.1-1d)
"Select by Category" (1.1-4d)

COMBI 6.3: Ed-KARMA GE

Here you can edit the parameters of the GE selected for each KARMA module [A]-[D]. In addition, you can assign GE parameters to the KARMA real-time Controls so that you can control the phrase or pattern in real-time while you play.

Use the [F6] ("**M**→") and [F7] ("**M**+") keys (6.2-1d) to select the KARMA module that you wish to edit.

6.3-1: GE P..4 (GE Parameter 1...4)

6.3-2: GE P..8 (GE Parameter 5...8)

6.3-3: GE P..12 (GE Parameter 9...12)

6.3-4: GE P..16 (GE Parameter 13...16)

COMBI 6.3:Ed-KARMA GE		Parm:Parm01	Value	Asgn	Pol
<input checked="" type="checkbox"/>	GE Parameter		Value	Asgn	Pol
01.	Rhythm: Swing %		+0050	01	+
02.	CCs: Fixed/On [B] 010		+0128	---	+
03.	Index: Template [1]		+0020	---	+
04.	Index: Template [2]		+0020	---	+
GE P..4	[GE P..8] [GE P..12] [GE P..16]			M → M +	UTILITY

6.3-1a

6.3-1b

6.3-1(2), (3), (4)a: GE Parameter, Value, Asgn (Assign), Pol (Polarity)

GE Parameter

Value

Asgn (Assign) [---, 01...Dyn4]

Pol (Polarity) [-, +]

☞ p.32, 33 PROG 6.3-1a: "GE Parameter," "Value," "Asgn," "Pol"

6.3-1(2), (3), (4)b: UTILITY

☞ "Write Combination," "Solo Selected Timbre" (1.1-1c)
"Copy KARMA Module" (PROG 6.1-1c)
"Init KARMA Module" (6.1-1d)
"Select by Category" (1.1-4d)

COMBI 6.4: Ed-KARMA RT

6.4-1: RTP ..4 (RT Parameter 1...4)

6.4-2: RTP ..8 (RT Parameter 5...8)

☞ p.34 PROG 6.4-1: RTP ..4 (RT Parm 1...4), 6.4-2: RTP ..8 (RT Parm 5...8)

COMBI 6.4:Ed-KARMA RT RTPrm:Parm1 Group										
Grp	Parameter	Min	Max	Val	A	B	C	D	Asgn	
6.4-1a	1: Mix Run	+0001	+0000	+0000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Dyn2	
6.4-1b	2: Mix Run	+0001	+0000	+0000	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Dyn3	
6.4-1c	3: Mix Run	+0000	+0001	+0001	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Dyn1	
6.4-1d	4: Off	+0000	+0000	+0000	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

6.4-1e

6.4-1(2)a/b/c/d: RT Parm 1...4, RT Parm 5...8

Grp (Param Group) [Off, Mix, Ctrl, Trig, Zone]

☞ p.34 PROG 6.4-1(2)a/b/c/d: RT Parm 1-4, RT Parm 5...8

Parameter [---, Run...Tr.Oct/5 OutZ]

Group: Mix
Run [0, +1]

Assign the function of "Run" (1.1-4b, 6.1-1b).

0: Off
+1: Run

☞ p.47 "Run Check Box" (1.1-4b)

Group: Trig
Trig by Mod [0...+4]

Assign the function of "Trigger by Mod" (6.2-2c).

0: Off
+1: A
+2: B
+3: C
+4: D

☞ p.62 "Trigger by Mod (Trigger by Module)" (6.2-2c)

Module% [0...+100]

Assign the function of "Module%" (6.2-2c).

☞ p.62 "Module" (6.2-2c)

Min (Parm Min Value) [---, -0036...+5000]

Max (Parm Max Value) [---, -0036...+5000]

Value (Parm Value) [---, -0036...+5000]

A/B/C/D (Parm Module A/B/C/D) [Off, On]

Specifies whether the RT Parm settings settings will be valid for each module.

On (checked): The RT Parm settings settings will be valid.

Off (unchecked): The RT Parm settings settings will be ignored.

Asgn (Parm Assign) [---, 1...Dyn4]

☞ p.34 PROG 6.4-1(2) a/b/c/d: RT Parm 1...4

6.4(2)e: UTILITY

☞ "Write Combination," "Solo Selected Timbre" (1.1-1c)

"Copy KARMA Module" (PROG 6.1-1c)

"Init KARMA Module" (6.1-1d)

6.4-3: DynMIDI (Dynamic MIDI)

☞ p.36 PROG 6.4-3: DynMIDI (Dynamic MIDI)

COMBI 6.4:Ed-KARMA RT DynMIDI: Dyn1 Input Module										
Input/Source	Btm/Top	Act	Destination	A	B	C	D	L	Pol	
6.4-3a	Off	000/127	C	Off	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	+
6.4-3b	A/ JS X	000/002	T	RTParm Ctrl1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	-
6.4-3c	A/ JS X	125/127	T	RTParm Ctrl1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	+
6.4-3d	A/ JS-Y #02	000/127	M	Trig Nt&Env	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	+

6.4-3e

6.4-3a/b/c/d: Dyn MIDI1...4

Input (Dyn1...4 Input Module) [A...D]

Indicates either A, B, C, or D as the KARMA module that will be the Dynamic MIDI "Source" input.

MIDI control data that matches the "Input CHANNEL" (6.1-2a) of the KARMA module that you select here will be used as the "Source." If the "Source" is "Note In Z" or "Note Out Z," the zone will be the key zone (6.1-3a) of the KARMA module that you select here.

Source (Dyn1...4 Source) [Off, JS+Y #01...Vel Out Z]

Btm (Dyn1...4 Range-Btm) [000...127]

Top (Dyn1...4 Range-Top) [000...127]

Act (Dyn1...4 Src Action) [M, T, C]

Destination (Dyn1...4 Destination) [Off, RTParm Ctrl...Buffer Latch]

☞ p.36-PROG 6.4-3a/b/c/d: Dyn MIDI1...4

A/B/C/D (Dyn1...4 Module A/B/C/D) [Off, On]

L (Dyn1...4 Last Triggered) [Off, On]

Specifies the modules for which the Dyn MIDI1...4 settings will be valid.

On (checked): The Dyn MIDI settings will be valid.

Off (unchecked): The Dyn MIDI settings will be ignored.

"A/B/C/D": The settings will be valid for KARMA modules [A], [B], [C], and [D] respectively.

"L": The settings will be valid only for the last-triggered KARMA module [A], [B], [C], or [D].

Pol (Dyn1...4 Polarity) [Off, On]

☞ p.36-PROG 6.4-3a/b/c/d: Dyn MIDI1...4

6.4-3e: UTILITY

☞ "Write Combination," "Solo Selected Timbre" (1.1-1c)

"Copy KARMA Module" (PROG 6.1-1c)

"Init KARMA Module" (6.1-1d)

6.4-4: Name1

6.4-5: Name2



6.4-4(5)a: Knob1...8, Switch1, 2

Knob 1...8 [000: no name...]
 Switch 1, 2 [000: no name...]

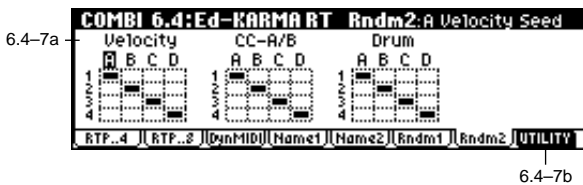
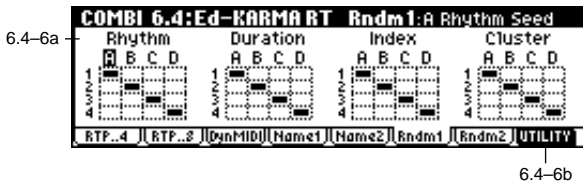
☞ p.36 PROG 6.4-4: Name1, PROG 6.4-5: Name2

6.4-4(5)b: UTILITY

☞ "Write Combination," "Solo Selected Timbre" (1.1-1c)
 "Copy KARMA Module" (PROG 6.1-1c)
 "Init KARMA Module" (6.1-1d)

6.4-6: Rndm1 (Random 1)

6.4-7: Rndm2 (Random 2)



6.4-6(7)a: Rhythm, Duration, Index, Cluster, Velocity, CC-A/B, Drum

Rhythm (Rhythm Seed)	[1, 2, 3, 4]
Duration (Duration Seed)	[1, 2, 3, 4]
Index (Index Seed)	[1, 2, 3, 4]
Cluster (Cluster Seed)	[1, 2, 3, 4]
Velocity (Velocity Seed)	[1, 2, 3, 4]
CC-A/B (CC-A/B Seed)	[1, 2, 3, 4]
Drum (Drum Seed)	[1, 2, 3, 4]

For the GE selected for each KARMA module, you can often control the degree of randomness for various parameter groups such as rhythm, duration, velocity etc. The random calculations are performed based on initial starting values, known as "seeds."

For example, if you select Rhythm Seed 1 for all four KARMA modules, running the same GE under the same conditions will cause the randomness of the rhythms to be identical. If many types of randomness are being used, such as duration, velocity etc., setting all the seeds to the same value within each group will cause the resulting phrases to be identical.

Conversely, if you select Rhythm Seed 1, 2, 3, and 4 respectively for the four KARMA modules and run the same GE under the same conditions, the randomness of the rhythms will be different. If many types of randomness are being used, such as duration, velocity etc., setting all the seeds to the different values within each group will cause the resulting phrases to be completely different.

Normally, you will select different values, such as [A]: 1, [B]: 2, [C]: 3, [D]: 4. Select identical values if you want two or more KARMA modules to play the same GE in unison or harmony with the same randomizations.

note Changing these settings will not have any effect for GEs that were not designed to utilize various random capabilities.

6.4-6(7)b: UTILITY

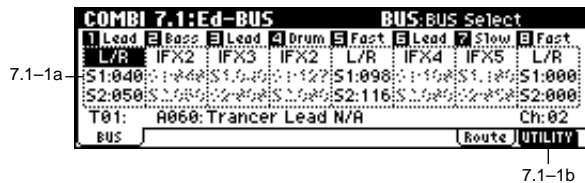
☞ "Write Combination," "Solo Selected Timbre" (1.1-1c)
 "Copy KARMA Module" (PROG 6.1-1c)
 "Init KARMA Module" (6.1-1d)
 "Select by Category" (1.1-4d)

COMBI 7.1: Ed-BUS

Here you can specify the output bus for the program oscillator of each timbre 1–8. You can also specify the send level to the master effects.

For details on insertion effects, refer to p.159 “7. Effect Guide.”

7.1–1: BUS (BUS T01...08)



7.1–1a: BUS Select, Send1(MFX1), Send2(MFX2)

BUS Select [DKit, L/R, IFX1...5, 1, 2, 1/2, Off]

Specifies the output bus for the program oscillator of each timbre 1–8. The current setting status can be viewed in the 7.2–1: Route page.

DKit: This can be selected only if the program for which settings are being made is a drum program “Mode (Oscillator Mode) Drums” (PROG 2.1–1a). With a setting of **DKit**, the “BUS Select” (GLOBAL 5.1–3a) setting made for each key of the drum kit will be used.

For example, if the “BUS Select” settings of the drum kit have assigned Snare sounds to **IFX1** and Kick sounds to **IFX2**, setting this parameter to **DKit** will send the Snare sounds to **IFX1** and Kick sounds to **IFX2**. If you wish to modify these routings, use Utility “DKit IFX Patch” (7.1–1b).

If this is set to **1/2**, the programs of timbres 1–8 will be sent in stereo from AUDIO OUTPUT (INDIVIDUAL) 1/2. If the pan of the program oscillator is controlled by MIDI control change #10 (pan) or AMS (Alternate Modulation Source), the sound will be output with the pan setting that is in effect at the moment of note-on. Unlike the case when this parameter is set to **L/R** to output the sound from (MAIN) L/MONO and R, the pan of a sounding note will not change in real-time.

If you wish to move the pan of a sounding note in real-time and output it from AUDIO OUTPUT (INDIVIDUAL) 1/2, you must set “BUS Select” to **IFX1** (or **IFX2–IFX5**), select **000: No Effect** for “IFX1” (or **IFX2–IFX5**) (7.2–1a), and for the sound that has passed through the IFX, set “BUS Select” (7.2–1a) to either **1/2**.

S1 (Send1(MFX1)) [000...127]
S2 (Send2(MFX2)) [000...127]

For each timbre 1–8, these parameters set the send level to master effects 1 and 2. These settings are valid when “BUS Select” is set to **L/R** or **Off**. When **IFX 1, 2, 3, 4** or **5** are selected, the send levels to master effects 1 and 2 are set by the “S1 (Send1(MFX))”, “S2 (Send2(MFX))” parameters of the 7.2: Ed-InsertFX, Setup page, after the sound has passed through IFX1–5.

If “BUS Select” is set to **1, 2** or **1/2** these settings are ignored.

MIDI Control change #93 can be used to control the Send 1 level, and #91 to control the Send 2, and modify their respective settings. These messages will be received on the MIDI channel specified for each timbre in the 3.1: Ed-Param1, MIDI page.

The actual send levels are determined by multiplying this value with the send level “S1 (Send1(MFX))”, “S2 (Send2(MFX))” (PROG 7.2–1a) for each oscillator of the program selected for the timbre.

7.1–1b: UTILITY



“Write Combination,” “Solo Selected Timbre” (1.1–1c)

For details on how to select the desired utility function, refer to “PROG 1.1–1c: UTILITY.”

Copy Insert Effect

PROG 7.1–1c

However, the MIDI control channel specified for “Control Channel” of the 7.2: Ed-InsertFX, Setup page will not be copied.

Swap Insert Effect

PROG 7.1–1c

However, the MIDI control channel specified for “Control Channel” of the 7.2: Ed-InsertFX, Setup page will not be copied.

DKit IFX Patch (DrumKit IFX Patch)

This command applies a patch to the “BUS Select” settings of each key of the drum kit, allowing you to temporarily change the connections to the insert effects. This command is available only if a drum program has been selected for the timbre and the “BUS Select” (7.1–1a) parameter is set to **Dkit**. Furthermore, this command can be executed only if the “BUS Select” (GLOBAL 5.1–3a) for the individual keys of that drum kit are set to **IFX1–5**.

- Select “DKit IFX Patch” to access the dialog box.



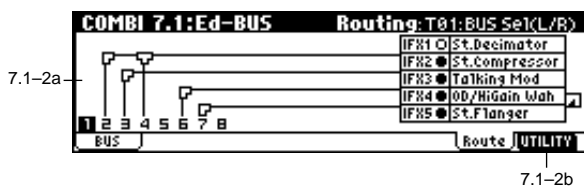
- In the right side of “DrumKit IFX 1–5→”, select the insert effect to which you want to patch.

- To execute the Drum Kit Insert Effect Patch command, press the [F8] (“OK”) key. To cancel without executing, press the [F7] (“Cancel”) key.

To restore the condition of the drum kit, execute IFX1→IFX1, IFX2→IFX2, IFX3→IFX3, IFX4→IFX4, and IFX5→IFX5.

7.1-2: Route (Routing)

Specifies the bus to which the program used by each timbre 1-8 will be sent. Here you can also set the send levels to the master effects.



7.1-2a: Routing Map, BUS Select

Routing Map

This shows the status of the insert effects. For each insert effect, this indicates the routing, the name of the selected effect, the on/off status, and chain status. The effect type, on/off status and chain status can be modified in the 7.2: Ed-InsertFX, Setup page.

T01...8: BUS Sel [DKit, L/R, IFX1...5, 1, 2, 1/2, Off]

You can specify the bus to which the program oscillator of each timbre 1-8 will be sent, while viewing a map of the settings.

Use the cursor keys [◀], [▶] to select the timbre, and use the VALUE [▲], [▼] key, [VALUE] slider or [VALUE] dial to set "BUS Select" (7.1-1a).

These settings can also be made in "BUS Select" (7.1-1a).

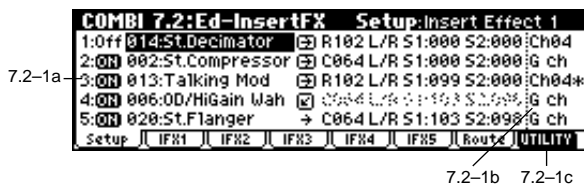
7.1-2b: UTILITY

☞ "Write Combination," "Solo Selected Timbre" (1.1-1c), "Copy Insert Effect," "Swap Insert Effect," "DKit IFX Patch" (7.1-1b)

COMBI 7.2: Ed-InsertFX

7.2-1: Setup

Here you can select the type of each insert effect, turn it on/off, and make chain settings etc.



7.2-1a: Ed-InsertFX Setup

IFX1 — IFX5 [Off, ON]
 Insert Effect 1, 5 [000...089: name]
 Insert Effect 2, 3, 4 [000...102: name]
 Chain [☒] (Off), [☑] (On)
 Pan(CC#8) [L000...C064...R127]
 BUS Select [L/R, 1, 2, 1/2, Off]
 S1 (Send1 (MFX1)) [000...127]
 S2 (Send2 (MFX2)) [000...127]

These parameters are the same as in Program mode.

☞ PROG 7.2-1)

However, dynamic modulation (Dmod) of the insert effects and the "Pan (CC#8)," "Send 1 (MFX1)," and "Send 2 (MFX2)" that follow the insert effects will be controlled on the "Control Channel" (7.2-1b) MIDI channel, unlike in Program mode. The control changes used are the same as in Program mode.

7.2-1b: Control Channel

Control Channel [Ch01...16, G ch, All Rt.]

MIDI Specifies the MIDI channel on which dynamic modulation (Dmod) of the insert effects and the "Pan (CC#8)," "Send 1 (MFX1)," and "Send 2 (MFX2)" that follow the insert effects will be controlled.

The channel number of the timbre routed through this IFX will be followed by a "*" displayed at the right of Ch01-16. If two or timbres with different MIDI channel settings are routed through the same IFX, this parameter specifies which of these channels will be used to control the effect.

G ch: The global MIDI channel "MIDI Channel" (GLOBAL 2.1-1a) will be used to control the effect. Normally you will set this to G ch.

All Rt. (All Routed): The channel of any timbre routed through this effect can be used to control the effect. (Channels of each routed timbre will be indicated by "*".)

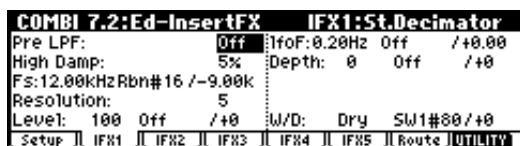
🔊 If the "BUS Select" (7.1-1a) of a timbre for which a drum program is selected is set to DKit, the MIDI channel of that timbre will be valid if any IFX1-5 is set to All Rt., regardless of the "BUS Select" (GLOBAL 5.1-3a) settings or the settings of the Utility "DrumKit IFX Patch" (7.1-1b).

7.2-1c: UTILITY

☞ "Write Combination," "Solo Selected Timbre" (1.1-1c), "Copy Insert Effect," "Swap Insert Effect" (7.1-1b), "Select by Category" (PROG 7.2-1b)

7.2-2: IFX 1 (Insert Effect1)**7.2-3: IFX 2 (Insert Effect2)****7.2-4: IFX 3 (Insert Effect3)****7.2-5: IFX 4 (Insert Effect4)****7.2-6: IFX 5 (Insert Effect5)**

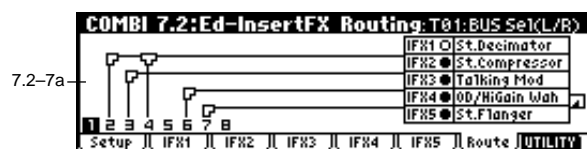
These are the parameters for IFX 1, 2, 3, 4, and 5 that were selected in the Setup page (☞p.168).



7.2-2a

7.2-2(...6)a: UTILITY

☞ “Write Combination” (1.1-1c)

7.2-7: Route (Routing)

7.2-7a

7.2-7b

7.2-7a: Routing Map

This shows the status of the insert effects. This shows the same content as the 7.1: BUS, Routing page. (☞7.1-2a)

7.2-7b: UTILITY

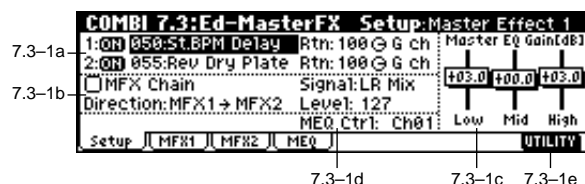
☞ “Write Combination,” “Solo Selected Timbre” (1.1-1c), “Copy Insert Effect,” “Swap Insert Effect,” “DKit IFX Patch” (7.1-1b)

COMBI 7.3: Ed-MasterFX

☞ For details on insertion effects, refer to p.159 “7. Effect Guide.”

7.3-1: Setup

Here you can select the type of each master effect, turn it on/off, and make chain and master EQ settings. With the exception of “MFX1 Control Ch,” “MFX2 Control Ch,” and “MEQ Control Ch,” this is the same as in Program mode. (☞PROG 7.3: Ed-MasterFX)



7.3-1a

7.3-1b

7.3-1d

7.3-1c

7.3-1e

7.3-1a: MasterFX Setup

MFX1 On/Off, MFX2 On/Off [Off, ON]

Master Effect 1, 2 [000...089: name]

Rtn 1, 2 (Return 1, 2) [000...127]

These are the same as in Program mode. Refer to “PROG 7.3-1: Setup.” However, the master effects will be controlled on the “MFX 1, 2 Control Ch” MIDI channel, unlike in Program mode.

The control changes used are the same as in Program mode.

MFX 1, 2 Control Ch [Ch01...16, G ch]

MIDI Selects the MIDI channel that will control dynamic modulation (Dmod) for the master effects.

G ch: The global MIDI channel “MIDI Channel” (GLOBAL 2.1-1a) will be used for control. Normally you will set this parameter to **G ch**.

7.3-1b: MasterFX Chain

MFX Chain [Off, On]

Direction (Chain Direction) [MFX1 → MFX2, MFX2 → MFX1]

Signal (Chain Signal) [LR Mix, L Only, R Only]

Level (Chain Level) [000...127]

These are the same as in Program mode. (☞“PROG 7.3-1: Setup”)

7.3-1c: Master EQ Gain [dB]

Low [-18.0...+18.0]

Mid [-18.0...+18.0]

High [-18.0...+18.0]

These are the same as in Program mode. (☞PROG 7.3-1: Setup)

7.3-1d: MEQ Ctrl

MEQ Ctrl (MEQ Control Ch) [Ch01...16, G ch]

MIDI Selects the MIDI channel that will control dynamic modulation (Dmod) for the master EQ.

G ch: The global MIDI channel "MIDI Channel" (GLOBAL 2.1-1a) will be used for control. Normally you will set this parameter to **G ch**.

7.3-1e: UTILITY



☞ "Write Combination," "Solo Selected Timbre" (1.1-1c), "Select by Category" (PROG 7.3-1d)

For details on how to select the desired utility function, refer to "PROG 1.1-1c: UTILITY."

Copy Master Effect

☞ p.41 PROG 7.3-1d

Note, the MIDI control channel that is specified by "MFX1, 2 Control Ch" (7.3-1a) will not be copied.

Swap Master Effect

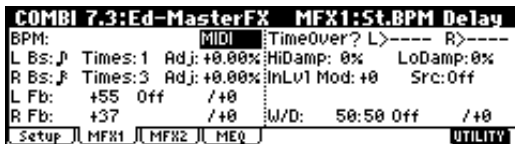
☞ p.41 PROG 7.3-1d

Note, the MIDI control channel that is specified by "MFX1, 2 Control Ch" (7.3-1a) will not be swapped.

7.3-2: MFX1 (Master Effect1)

7.3-3: MFX2 (Master Effect2)

Here you can set the parameters of the "Master Effect1" and "Master Effect2" effects that were selected in the Setup page (☞ p.168).



7.3-2a

7.3-2(3)a: UTILITY

☞ "Write Combination" (1.1-1c)

7.3-4: MEQ (Master EQ)

The master EQ is a three-band stereo EQ. It is located immediately before the AUDIO OUTPUT (MAIN OUT) L/MONO and R from the L/R bus, and adjusts the overall tonal character of the sound (☞ p.220).



7.3-4a

7.3-4a: UTILITY

☞ "Write Combination" (1.1-1c)

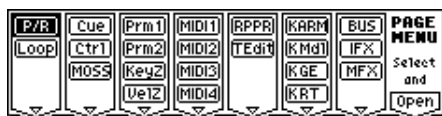
3. Sequencer mode

In Sequencer mode you can use the built-in 16-track sequencer to play, record and edit songs. You can also record and play patterns, make settings for the RPPR (Real-time Pattern Play Recording) function, play songs that use the KARMA function, record patterns, and create Cue Lists to playback multiple songs consecutively.

⚠ These settings and the song data you recorded are not backed up when the power is turned off. Before turning off the power, be sure to save important data on a floppy disk or a data filer. Immediately after the power is turned on, memory will not contain any song data, so in order to playback the sequencer, you will need to load data from the floppy disk, or receive a MIDI bulk data dump from an external MIDI sequencer (☞p.140).

SEQ PAGE MENU

For details on how to select pages in Sequencer mode, refer to p.1.



P/R	1.1: Play/REC	Select multis. Select a program for each track, and make pan and level settings. (☞p.69)
Loop	1.2: Loop	Make settings for track play loop function. (☞p.77)
Cue	2.1: Cue List	Play, create, and make settings for cue lists. (☞p.78)
Ctrl	2.2: Controller	Controller settings. (☞p.81)
MOSS	2.3: MOSS	Displayed if the separately sold EXB-MOSS option is installed. Make EXB-MOSS parameter settings. (☞p.82)
Prm1	3.1: Param1	MIDI, OSC, and pitch settings for each track. (☞p.82)
Prm2	3.2: Param2	Turn track playing by KARMA on/off, delay and scale settings for each track. (☞p.84)
KeyZ	3.3: Key Zone	Key zone settings for each track. (☞p.85)
VelZ	3.4: Vel Zone	Velocity zone settings for each track. (☞p.86)
MIDI1	4.1: MIDI Filter1	MIDI message transmission/reception filter settings for each track: Prog Change, After Touch etc. (☞p.87)
MIDI2	4.2: MIDI Filter2	Filter settings: JS, Ribbon Ctrl etc. (☞p.88)
MIDI3	4.3: MIDI Filter3	Filter settings: real-time Control Knob (☞p.89)
MIDI4	4.4: MIDI Filter4	Filter settings: SW, Other Ctrl Change (☞p.89)
RPPR	5.1: RPPR	Pattern recording and editing. RPPR settings. (☞p.90)
TEdit	5.2: Track Edit	Edit track playback data. Specify track names. (☞p.95)
KARMA	6.1: KARMA	KARMA GE selection and settings, MIDI channel, key zone parameters, and MIDI filter settings. (☞p.103)
K Mdl	6.2: KARMA Mdl	Module parameters (transpose, range of generated phrase, trigger etc.). (☞p.108)
K GE	6.3: KARMA GE	GE parameter settings and assignments to KARMA real-time Controls (☞p.109)
K RT	6.4: KARMA RT	KARMA RT parameters, Dynamic MIDI settings. (☞p.110)

BUS	7.1: BUS	Set BUS and master effect send level for each track. (☞p.111)
IFX	7.2: Insert FX	Insert effect routing, selection, and settings. (☞p.112)
MFX	7.3: Master FX	Master effect selection and settings. Master EQ settings. (☞p.113)

SEQ 1.1: Play/REC

Here you can select songs, and make basic settings such as selecting the program used by each track.

1.1-1: Play.REC (Play/REC)

Here you can select songs and turn RPPR on/off.



1.1-1a: Location, Meter Reso (Resolution), (Tempo), Tempo Mode

Location [001:01.000...999:16.191]

This is the current location of the song. From the left, the numbers are the measure, beat, and clock. When you modify these values, the current location will change.

⚠ When "MIDI Clock" (GLOBAL 2.1-1a) is **Internal**, changing the location will cause Song Position Pointer messages to be transmitted. If this parameter is set to **External**, Song Position Pointer messages from the specified source will change the location.

⚠ The range in which the beat and clock can be modified will depend on the currently specified time signature.

Meter

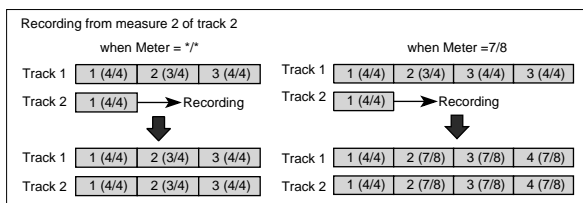
[*/*, 1/4...16/16]

This is the time signature at the current location of the song. The time signature can be changed at each measure.

/: This will be displayed when you press the [REC/WRITE] key. Specify this when you wish to use the time signature that is already recorded for that measure, and wish to record without changing the time signature.

1/4–16/4, 1/8–16/8, 1/16–16/16: This is the time signature at the current location of the song. After pressing the front panel [REC/WRITE] key, specify the time signature here. Then press the [START/STOP] key to begin recording, and the specified time signature will be recorded on the **Master Track** and on previously-recorded tracks. Be aware that if you press the [START/STOP] key during the pre-count to stop recording, the time signature will not be recorded.

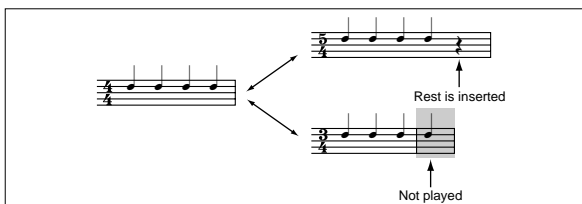
Normally, you will specify the time signature when you record the first track, and select ***/*** when recording subsequent tracks.



Changing the time signature in the middle of a measure

If you know beforehand the location at which you wish to change time signatures in the middle of a measure, use "Insert Measure" (5.2–1b) to specify and insert the time signature for each measure of the same time signature, and then record your musical data. Alternatively, if you wish to change the time signature in the middle of a song which already contains musical data, use "Track Select" (1.1–1c) to specify the **Master Track** (or any **Track01–16** which contains data), and use "Event Edit" (5.2–1c) to modify the time signature of the Bar event.

If the number of beats in a measure increases when you modify the time signature, rests will be inserted in the portion that was added. Conversely if the number of beats decreases, that portion will not be played. However if you return to the original time signature, the data that had been hidden will once again be played.



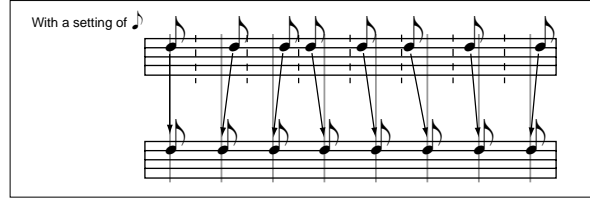
Reso (Real-time Quantize Resolution)

[Hi, 1/3...]

This corrects the timing of data as it is recorded in real-time. (It does not affect previously-recorded data.)

Hi (High Resolution): Timing will not be corrected. Data will be recorded at the maximum resolution ($\downarrow/192$).

1/3 – 1/4: Data will be corrected to the nearest interval of the specified timing as it is recorded. For example if you select $\downarrow/3$, data will be corrected to the nearest 32nd note triplet interval. If you select $\downarrow/4$, data will be corrected to the nearest quarter note interval.



Since all that musical data that is recorded will be corrected to the specified timing resolution, coarse settings of this parameter will cause continuous controllers such as pitch bend to be recorded in "stairstep" fashion.

In such cases, use a setting of **Hi** to record, and then use "Quantize" (5.2–1b) to correct only the desired type of data (notes etc.). It is best to avoid recording at a stiff resolution to begin with.

♪ (Tempo)

[040...240, EXT]

This sets the playback tempo of the song and the tempo of the KARMA function.

040...240: When the "Tempo Mode" is **Manu**, this tempo will be used for recording and playback. When "Tempo Mode" is **REC**, this tempo will be recorded on the master track.

EXT: This will appear when "MIDI Clock" (GLOBAL 2.1–1a) is **External**. The tempo of the internal sequencer will synchronize with the MIDI Clock messages received from an external sequencer etc. When "MIDI Clock" is **Internal**, the above tempo setting (040...240) will be used.

MIDI If **Tempo** is selected as an alternate modulation source, $\downarrow = 120$ will be the base value.

Tempo Mode

[Auto, Manu, REC]

Auto: The tempo will follow the tempo of the **Master Track**. The tempo of the master track can be specified by using "Event Edit" (5.2–1b) with Master Track chosen in "Track Select," (1.1–1c) or by the REC operation described below. When **Auto** is selected, it will not be possible to modify the "♪(Tempo)" setting while a song is playing or recording (or during standby).

Manu (Manual): The "♪(Tempo)" setting will be used.

REC: Tempo changes will be recorded on the **Master Track**. Select this after pressing the [REC/WRITE] key. When **REC** is selected and you are recording in real-time, modify the "Tempo" value to change the tempo. This cannot be selected when the Preferences page item "Recording Setup" is set to **Loop All Tracks**. Tempo changes can also be created using "Event Edit" (5.2–1b) or "Create Control Data" (5.2–1b).

note If you wish to record only the tempo changes, set "REC Setup" (1.1–6a) to **OverDub**, and the tempo will be recorded on the master track without being affected by the musical data of "Track Select."

1.1–1b: Song Select

Song Select

[000...199: name]

Indicates the song that you wish to record or play.

If you wish to create a new song, you can either select a number from the popup menu for which the song name is blank, or use the numeric keys [0]–[9] to directly specify the song number, then press the [ENTER] key to access the dialog box, and finally press the [F8] ("OK") key.

MIDI If “MIDI Clock” (GLOBAL 2.1–1a) is **Internal**, changing the song will cause Song Select and Song Position Pointer messages to be transmitted. If “MIDI Clock” is **External**, Song Select messages can be received from the specified source to change songs. When the song changes, tracks whose track status (“Status” (3.1–1a)) is **EXT**, **EX2** or **BTH** will transmit Bank Select, Program Change, Volume, Panpot, Poramento, Send1, 2, Post IFX Pan, and Post IFX send 1, 2 messages on the MIDI channel of the respective track.

1.1–1c: RPPR (Real-time Pattern Play/Rec), Track Select, Selected Track Information

RPPR [Off, On]

This turns the RPPR (Real-time Pattern Play/Recording) function on/off. RPPR lets you assign a pattern to each note of the keyboard, so that the pattern will playback (or be recorded) when you press the appropriate key.

On (checked): The RPPR function will be on. If a pattern has been assigned to each key in the 5.1–2: RPPR Setup page, pressing that key will perform the assigned pattern (☞ 5.1–2: RPPR Setup).

Track Select [T01...T16: name, Master Track]

Track01–Track16: Select the track(s) that will record or play song data.

The track names specified in “Rename Track” (5.1–1c). When you perform real-time recording on a single track, the musical data will be recorded on the track you select here. When you perform real-time recording on two or more tracks simultaneously (☞ “Multi REC” 1.1–6a), the “PLAY/MUTE/REC” (1.1–2(3)b) will select the recording track, regardless of the setting you make here.

Master Track: Select the master track when you wish to use the 5.2–1: Track Edit page menu commands to edit the tempo track. When using real-time recording or step recording, it is not possible to record the master track alone.

MIDI When you play the keyboard of this instrument and operate its controllers, the internal tone generator will sound according to the settings (program, level etc.) of the tracks that are selected here (if “Status” 3.1–1a is **INT** or **BTH**), and other tracks whose MIDI channels match will also sound at the same time (if “Status” is **INT** or **BTH**). Messages will also be transmitted on the MIDI channels of these tracks (whose “Status” is **EXT**, **EX2** or **BTH**).

Selected Track Information

This shows information on the “Track Select” that is currently selected for editing.

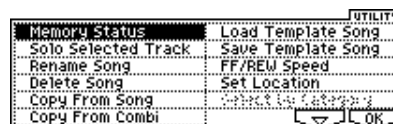
T (Track) No.: Bank No.: Prog No. and name

This displays the track number, and the bank, number, and name of the program selected for that track.

Ch 01...16

This shows the MIDI channel number specified for the track.

1.1–1d: UTILITY



For details on how to select the desired utility function, refer to “PROG 1.1–1c: UTILITY.”

Memory Status

This displays the remaining amount of sequencer memory.

Solo Selected Track

The Solo function will alternate on/off each time you select this command.

When **checked**, the Solo function will be turned on, and only the currently selected track will sound. Other tracks will be muted. To solo another track, select a parameter of the desired track. “Selected Track Information” (1.1–1c) will indicate [Solo].

To defeat the Solo function, select the “Solo Selected Track” page menu command once again.

Note Even if multiple “SOLO On/Off” (1.1–2(3)b) settings are **On**, turning on the Solo function here and selecting “SOLO On/Off” or the parameter of another track will cause only that track to be soloed and sounded.

Note If the tracks that have been muted by the Solo function have a “Status” (3.1–1a) setting of **EXT**, **EX2**, or **BTH**, the MIDI note-on/off messages of that track will not be transmitted.

Rename Song

Here you can rename the selected song. A name of up to sixteen characters can be input. (☞ BG p.39)

Delete Song

This command deletes the currently selected song.

- 1 Select this command to access the dialog box.



- 2 If you wish to execute the Delete Song command, press the [F8] (“OK”) key. To cancel, press the [F7] (“Cancel”) key. When you execute this command, the musical data, setting data, and patterns etc. of the currently selected song will be erased, and the memory area allocated to that song will be freed.

Copy From Song

Copy all settings and musical data from the song you specify to the currently selected song.

- 1 Select “Copy From Song” to access the dialog box.

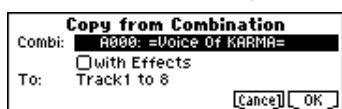


- ② In “From,” select the copy source song number.
- ③ Select the data that will be copied.
All: Copy all musical data (e.g., track events and patterns) and settings.
Without Track/Pattern Events: Only song settings other than Play Loop and RPPR will be copied.
- ④ To execute Copy Song, press [F8] (“OK”) key. To cancel without executing, press [F7] (“Cancel”) key.
 If you execute **All**, all musical data and settings of the currently selected song will be erased, and replaced by the copy source data.
 If you execute **Without Track/Pattern Events**, song settings other than Play Loop and RPPR will be erased, and replaced by the copy source data.

Copy From Combi (Copy From Combination)

Copy the settings of the combination you specify to the settings of the currently selected song.

- ① Select “Copy From Combi” to access the dialog box.



- ② In “Combi,” select the copy source combination.
- ③ Check or uncheck “with Effects” to specify whether effect and EQ settings will also be copied.
 If this is **checked**, the insert effect, master effect, and master EQ settings will also be copied.
- ④ In “To,” select the copy destination tracks (1–8 or 9–16).
- ⑤ To execute the copy, press [F8] (“OK”) key. To cancel without executing, press [F7] (“Cancel”) key.
 When you execute, the settings of the currently selected song will be erased, and replaced by the settings of the combination.

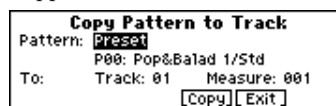
Load Template Song

This command loads a template song as a song. The built-in sequencer contains sixteen different **preset template songs** (P00–15) that contain preset settings for programs and effects appropriate for various musical styles. You are also free to create your own favorite settings for programs, track parameters, and effects, and save them as one of sixteen **user template songs** (U00–15) (≡“Save as User Template Song”).

- ① Select “Load Template Song” to access the dialog box.



- ② In “From,” specify the template song that you wish to load.
- ③ If you **check** “Copy Pattern to Track too?,” the “Copy Pattern To Track” dialog box will appear automatically after “Load Template Song” has been executed. If you execute **without checking** this, only the template song you specified in step ② will be loaded.
- ④ To load the template song, press the [F8] (“OK”) key. To cancel without loading, press the [F7] (“Cancel”) key. When you execute, song settings other than Play Loop and RPPR will be copied.
 If in step ③ you checked “Copy Pattern to Track too?” and pressed the [F8] (“OK”) key, the “Copy Pattern To Track” dialog box will appear.



This dialog box is the same as in 5.1: Pattern/RPPR, Pattern Edit tab, utility menu command “Copy To Track” (≡p.93).

Preset Template Song	Track No.: Name	Program	Corresponding Preset Pattern No.:Name
P00: Pop/Ballade	Track01: Drums	A036:Standard Kit	P00: Pop&Balad 1/Std ... P10: Pop(6/8) 3/Std
P01: Rock/Metal Rock	Track01: Drums	B020:Processed Kit	P11: Rock 1/Process ... P21: Rock11/Process
P02: R & B	Track01: Drums 1(Std 2)	B036:Standard Kit 2	P22: R&B 1/Std2 ... P27: R&B 6/Std2
	Track09: Drums 2(Std)	A036:Standard Kit	P28: R&B 7/Std ... P32: R&B11/Std
P03: Jazz	Track01: Drums	B004:Jazz/Brush Kits	P33: Jazz 1/Jazz ... P39: Jazz 7/Jazz
P04: Latin	Track01: Drums	B004:Jazz/Brush Kits	P40: Latin 1/Jazz ... P42: Latin 3/Jazz
	Track08: Percussion	B116:Percussion Kit	P46: Latin 7/Jazz ... P47: Latin 8/Jazz
P05: Reggae	Track01: Drums	B068:Drum'nBass Kit	P43: Latin 4/Perc ... P45: Latin 6/Perc
P06: Country	Track01: Drums	A036:Standard Kit	P48: Reggae 1/D'n'B ... P53: Reggae 6/D'n'B
P07: Folk	Track01: Drums	A036:Standard Kit	P54: Country 1/Std ... P57: Country 4/Std
P08: European Trad.	Track01: Drums	A036:Standard Kit	P58: Folk 1/Std ... P61: Folk 4/Std
	Track08: Percussion	B116:Percussion Kit	P62: E.Trad 1/Std ... P67: E.Trad(3/4)2/Std
P09: Orchestral	Track01: Percussion	A116:Orchestra&Ethnic	—
P10: Techno/Euro Beat	Track01: Drums	A020:House Kit	P68: Techno 1/House ... P78: Techno11/House
P11: House	Track01: Drums	A020:House Kit	P79: House 1/House ... P92: House14/House
P12: Drum'n'Bass	Track01: Drums	B068:Drum'n'Bass Kit	P93: Drum'nBs 1/D'n'B ... P108: Drum'nBs16/D'n'B
P13: Acid Jazz	Track01: Drums	B036:Standard Kit 2	P109: AcidJazz 1/Std2 ... P120: AcidJazz12/Std2
P14: Hip Hop/Rap	Track01: Drums	A068:HipHop Kit	P121: HipHop 1/HipHop ... P135: HipHop15/HipHop
P15: Big Beats	Track01: Drums 1(Hip/Hop)	A068:HipHop Kit	P136: Bigbeat 1/HipHop ... P143: Bigbeat 8/HipHop
	Track09: Drums 2(Tricky)	A004:!(Tricky) Kit!	P144: Bigbeat 9/Tricky ... P149: Bigbeat14/Tricky

- ⑤ In “Pattern,” select the pattern that you wish to copy. If you press the [START/STOP] key, the selected pattern will play.
In To “Track,” select the copy destination track.
In “Measure,” specify the beginning measure of the copy destination.

note Track 1 of all sixteen preset template songs contains a drum category program. (In preset template songs P02, P04, P08, and P15 drum category programs are specified for multiple tracks.)
The pattern names of the 150 preset patterns indicate the musical genre and part of the optimal drum category program. (☞ Lower diagram)

For example in **P00: Pop&Balad 1/Std**, the musical genre is “Pop&Balad 1,” and “Std” is part of the name of the drum category program that is most suitable. By loading the drum track for these preset template songs and the corresponding preset patterns, you can efficiently set up a drum track that is suited to each preset template song.

- ⑥ To execute, press the [F6] (“Copy”) key. When you execute, “Measure” will count up automatically. You may then copy patterns as well. To exit the command, press the [F7] (“Exit”) key.

Example)

Load preset template song P00: Pop/Ballade together with preset pattern P01: Pop&Balad 2/Std into song S000

- ① Select “Load Template Song” to access this dialog box.
- ② In “From,” select **P00: Pop/Ballade**.
- ③ Check “Copy Pattern to Track too?”
- ④ Press the [F8] (“OK”) key to access the “Copy Pattern To Track” dialog box.
- ⑤ Set “Pattern” to **Preset** to select preset patterns, and select one of the patterns **P00: Pop&Balad 1/Std**–**P07: Pop&Balad 8/Std** for the pattern name. (Preset template song **P00: Pop/Ballade** specifies program **A036: Standard Kit** for track 1.) If you wish to play the selected pattern, press the [START/STOP] key. If you wish to adjust the tempo, use the [TEMPO] knob.
For this example, select **P01: Pop&Balad 2/Std**.
- ⑥ Set To: “Track” to **01**, and “Measure” to **001**.
- ⑦ Press the [F6] (“Copy”) key once. The eight-measure preset pattern **P01: Pop&Balad 2/Std** has now been copied to the song. “Measure” will count-up automatically.

By repeating steps ⑤ and ⑦ you can continue to copy other patterns. When you press the [F7] (“Exit”) key, the dialog box will close.

Save Template Song (Save as User Template Song)

This command saves the program selections, track parameters, and effect settings etc. of the song as a user template song U00–15. The settings you save here can also be loaded in Song Play mode.

- ① Select “Save Template Song” to access the dialog box.



- ② In “To,” specify the user template song (U00–15) in which the data will be saved.
- ③ To save the template song, press the [F8] (“OK”) key. To cancel, press the [F7] (“Cancel”) key. Be aware that when you execute this command, all setting data of the save destination User Template Song will be erased and rewritten.

FF/REW Speed

This allows you to set the speed at which fast-forward or rewind will occur when you press the [FF] key or [REW] key.

- ① Select “FF/REW Speed” to access the dialog box.

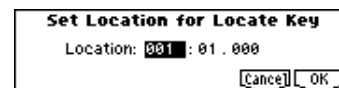


- ② In “Speed,” specify the speed (relative to the playback tempo) at which fast-forward and rewind will occur. With a setting of **2**, this will occur at double the playback tempo; with a setting of **3**, triple the tempo; and with a setting of **4**, quadruple the tempo. However in sections where the playback data is dense, the fast-forward or rewind speed may slow down.
- ③ If “Ignore Tempo” is **checked**, the playback tempo and note length will be ignored, and fast-forward and rewind will be performed as fast as possible. The speed of fast-forward and rewind will differ between sections where the playback data is dense and sections where it is sparse. If this item is **unchecked**, fast-forward and rewind will be performed at the speed you specify for “Speed.”
- ④ To execute the settings, press the [F8] (“OK”) key. To cancel, press the [F7] (“Cancel”) key.

Set Location (Set Location for Locate Key)

When you press the [LOCATE] key, you will move to the location specified here.

- ① Select “Set Location” to access the dialog box.



- ② In “Location,” specify the location to which you will move when you press the [LOCATE] key. If you specify **001:01:000**, you will move to the beginning of the song when you press the [LOCATE] key.
- ③ To execute the settings, press the [F8] (“OK”) key. To cancel, press the [F7] (“Cancel”) key.

note Even when this dialog box is not opened, you can set this value to the current location by holding down the [ENTER] key and pressing the [LOCATE] key.

1.1-2: Prog...8 (Program T01...08)

1.1-3: Prog...16 (Program T09...16)

Here you can make basic settings for playback and recording of songs and select the program that will be used by each track.



1.1-2(3)a: Program

Program Select

[A...F/000...127, G001...128 g001:1...g128:d]

Here you can select the program that will be used by each track.

F000...F127 can be selected if a separately sold EXB-MOSS option is installed.

When this parameter is selected, you can use the VALUE controller to make a selection. At this time, the BANK SELECT key LEDs will light to indicate the bank of the selected program.

The track number and the abbreviated category name of the selected program are displayed above "Program Select."

note By holding down the [TIMBRE/TRACK] key and pressing a [F1](T1/T9)–[F8](T8/T16) key you can move to the corresponding track "T1"–"T16."

The program bank can also be selected directly by using the BANK [A]–[G] keys.

note When this parameter is selected, you can use the Utility menu command "Select by Category" to select a program by category. (see p.2)

The program you select here will be used when the song is played or recorded from the beginning. If the program is changed while recording, the program change will be recorded as musical data, and the program will change during playback. You can also change the program manually during playback. However if musical data (program change data) is already recorded, the program will change at that point.

MIDI If the "Status" (3.1-1(2)a) is INT or BTH, the program can be specified by receiving a MIDI program change. When you switch songs or return to the beginning of the song, tracks whose "Status" is EXT, EX2, or BTH will transmit the bank and program number via MIDI. Tracks whose "Status" is EX2 will display the Bank as "-", and will transmit via MIDI the bank number specified by "Bank (EX2) MSB" and "Bank (EX2) LSB" in the Param1 page (3.1-1(2)a).

1.1-2(3)b: PLAY/MUTE/REC, SOLO On/Off

PLAY/MUTE/REC

[PLAY, MUTE, REC]

Specifies the mute status of each track, and select the recording tracks for multi-track recording. During playback or single track recording (normal recording), you can select PLAY or MUTE for tracks other than the recording track. During multi-track recording, each track can be set to PLAY, MUTE, or REC. Use the VALUE [▲][▼] keys, the [VALUE] slider, or the [VALUE] dial to change the setting.

PLAY: The track will play.

MUTE: The track will be muted (silent).

REC: This will appear in single track recording (normal recording). It cannot be selected.

If you have selected multi-track recording (Preference page "Multi REC" on), select REC for the tracks that you wish to record.

SOLO On/Off

[SOLO On, SOLO Off]

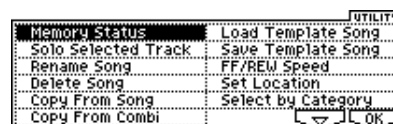
Turn the Solo function on/off.

Select the box located at the right of "PLAY/MUTE/REC," and turn the setting on/off. A track for which this is turned on will show an "S" in the box, and only that track will sound. The other tracks will be muted.

MIDI In the case of tracks whose "Status" (3.1-1(2)a) is BTH, EXT, or EX2, a track that has been muted by the Mute or Solo functions will not transmit note on/off data on the MIDI channel specified for that track.

▲ If the utility menu command "Solo Selected Track" (1.1-1d) is on, its solo state will take priority. When you press "SOLO On/Off" or a parameter of another track, only that track will be soloed, and will be heard.

1.1-2(3)c: UTILITY



see "Memory Status," "Solo Selected Track," "Rename Song," "Delete Song," "Copy From Song," "Copy From Combi," "Load Template Song," "Save Template Song," "FF/REW Speed," "Set Location" (1.1-1d)

Select by Category

Select the program for each track by category.

This will appear and can be selected when "Program Select" is selected. (see PROG 1.1-1a)

1.1-4: Mix..8 (Mixer T01...08)

1.1-5: Mix..16 (Mixer T09...16)

Here you can set the pan and volume of each track. The pan and volume that you specify here will be used when you playback or record from the beginning of the song. If you change the settings during recording, the changes will be recorded as musical data, and pan and volume will change during playback. You can also change the settings during playback. However when the song reaches a location where pan or volume data was recorded, the settings will change accordingly.



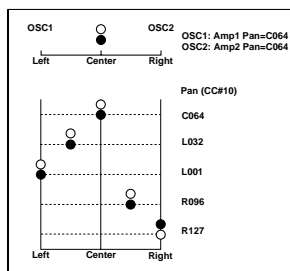
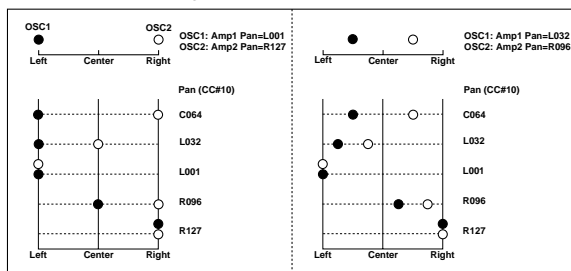
1.1-4(5)a: Pan, Volume

Pan (Panpot)

[RND, L001...C064...R127]

Sets the pan of tracks 1-16.

L001...C064...R127: A setting of L001 is far left, and R127 is far right. A setting of C064 will reproduce the pan setting of the oscillator in Program mode.



If a mono-type insertion effect is inserted, this setting will be ignored. In this case, the 7.2: Insert Effect Setup page "Pan (CC#8)" setting will adjust the pan of the sound following the insertion effect.

RND: The sound will be panned randomly at each note-on.

MIDI If "Status" (3.1-1(2)a) is INT or BTH, CC#10 Panpot can be received to control the panning. When receiving CC#10, a value of 0 or 1 is far left, 64 is center, and 127 is far right. When you change the song or return to the beginning of the song, tracks whose "Status" is EXT, EX2 or BTH will transmit the pan you specify here as a MIDI message (except for RND).

Volume

[000...127]

Set the volume of tracks 1-16.

MIDI When "Status" (3.1-1(2)a) is INT or BTH, CC#7 Volume can be received to control the volume. The volume of a track is determined by multiplying the MIDI Volume (CC#7) and Expression (CC#11) values. When you change the song or return to the beginning of the song, tracks whose "Status" is EXT, EX2 or BTH will transmit the volume you specify here as a MIDI Volume message.

1.1-4(5)b: UTILITY

"Memory Status", "Solo Selected Track", "Rename Song", "Delete Song", "Copy From Song", "Copy From Combi", "Load Template Song", "Save Template Song", "FF/REW Speed", "Set Location" (1.1-1d)

1.1-6: Pref. (Preference)

Here you can select the method of real-time recording, and set the metronome.



1.1-6a: Rec Setup, Metronome

Indicates the method of real-time recording. Refer to BG p.62 for the real-time recording.

REC Setup:

Recording Mode

[Over Write...Loop All Tracks]

Over Write

When recording for the first time, you will normally select this method.

To begin recording, press the [REC/WRITE] key and then the [START/STOP] key. To stop recording, press the [START/STOP] key once again.

Be aware that when this method of recording is used to record on a track that already contains data, any previously existing data will be erased from the measure at which you begin recording and from all subsequent measures.

Over Dub

Select this when you wish to add data to a previously-recorded track.

To begin recording, press the [REC/WRITE] key and then the [START/STOP] key. To stop recording, press the [START/STOP] key once again.

Previously-recorded data will remain in the track, and the newly-recorded data will be added.

Manual Punch In

Select this method when you wish to use the [REC/WRITE] key or a foot switch to re-record selected portions of a previously-recorded track.

Press the [START/STOP] key to playback the song. When you reach the measure at which you wish to begin re-writing the data, press the [REC/WRITE] key or the foot switch, and recording will begin. When you are finished recording, press the [REC/WRITE] key or the foot switch once again, and recording will end.

The area between the points where you pressed the [REC/WRITE] key or the foot switch the first and second times will be replaced by the newly recorded data.

Auto Punch In

Select this method when you wish to automatically re-record selected portions of a previously-recorded track. If you select **Auto Punch In**, the display will indicate "M***-M*** (Auto P Start Meas-Auto P End Meas)" at the right, allowing you to specify the range of measures that will be rewritten.

Press the [REC/WRITE] key and then the [START/STOP] key, and playback will occur until the specified measure is reached. Then, recording will occur only over the specified area ("Auto P Start Meas"- "Auto P End Meas"), rewriting it with the newly recorded data.

Loop All Tracks

Select this method when you wish to repeatedly record a specified area of a track, and continue adding data. This is suitable for creating drum patterns, etc.

If you select **Loop All Tracks**, the display will indicate "M***-M*** (Loop Start Meas-Loop End Meas)" at the right, allowing you to specify the range of measures that will be recorded repeatedly.

Press the [REC/WRITE] key and then the [START/STOP] key, and playback will occur until the specified measure is reached. Then, recording will occur repeatedly over the specified area ("Loop Start Meas"- "Loop End Meas"). Previously-recorded data will remain, and the new data will be added. While recording, you can check "Remove Data" to delete unwanted data.

⚠ If you check "Multi REC," Loop All Tracks cannot be selected.

Auto P Start Meas-Auto P End Meas

[M001...M999-M001...M999]

When "Recording Mode" is set to **Auto Punch In**, specify the measures at which recording will start and end.

Loop Start Meas-Loop End Meas

[M001...M999-M001...M999]

When "Recording Mode" is set to **Loop All Tracks**, specify the measures over which recording will continue repeating.

Remove Data

[Off, On]

You can delete unwanted musical data while recording with **Loop All Tracks**.

This is available when **Loop All Tracks** is chosen in "Recording Mode."

On (checked): During recording, press the key (note number) that corresponds to the musical data you wish to delete. All occurrences of that note number will be deleted for the interval that you continue holding down the key. Controller data can also be erased in a similar way. For example while you move and hold the joystick in the X (horizontal) direction, bender data will be erased. While you apply pressure to the keyboard, after touch data will be erased.

Also, you can press and hold down the [REC/WRITE] key to delete all musical data for as long as the key is held.

Multi REC

[Off, On]

On (checked): Multi-track recording mode will be selected. Check this when you wish to record multiple tracks simultaneously.

If this is **checked**, the "PLAY/MUTE/REC" (1.1-2(3)b) setting of all tracks will be set to **REC**.

At this time, use the Program page (1.1-2(3)a) "PLAY/MUTE/REC" setting to specify the tracks on which multi-track recording will occur. (BG p.64)

The Multi REC setting also allows MIDI data on multiple channels to be received from a multi-track sequencer connected to this instrument, and recorded simultaneously on multiple tracks.

In this case, MIDI data of matching MIDI channels will be recorded on tracks whose "PLAY/MUTE/REC" (1.1-2(3)b) is set to **REC**, regardless of the "Track Select" (1.1-1c) setting. When you do this, it is a good idea to set "MIDI Clock" (GLOBAL 2.1-1a) to **External** so that this instrument will synchronize to the external sequencer. However, tempo changes will not be recorded.

Off (unchecked): Single track recording mode will be selected. Recording will occur on the track you select in "Track Select."

Metronome:

Here you can make metronome settings.

Sound

[REC Only, REC/Play, Off]

REC Only: The metronome will sound only during recording.

REC/Play: The metronome will sound during recording and playback.

Off: The metronome will not sound. However, the pre-count will sound before recording begins.

This parameter is linked to SEQ 5.1: RPPR Pattern "Metronome Sound" (5.1-1b).

Precount

[0...2]

Specifies the pre-count that will occur before recording begins.

With a setting of 0, recording will begin the instant you press the [START/STOP] key (after first pressing the [REC/WRITE] key).

Level

[000...127]

Sets the volume of the metronome.

BUS (BUS Select)

[L/R, L, R, 1, 2, 1/2]

Select the output destination of the metronome sound.

L/R, L, R: Output from OUTPUT (MAIN) L/Mono and/or R.
1, 2, 1/2: Output from OUTPUT (INDIVIDUAL) 1, 2, respectively.

■ 1.1-6b: UTILITY

ⓘ "Memory Status", "Solo Selected Track", "Rename Song", "Delete Song", "Copy From Song", "Copy From Combi", "Load Template Song", "Save Template Song", "FF/REW Speed", "Set Location" (1.1-1d)

1.1-7: K.RTC (KARMA RTC)



1.1-7a: RT Knob/SW Name

This screen displays the names of the KARMA Real-time Controls knobs and switches, and the knob and switch settings of the song.

The [---] area displayed before each knob or switch name shows the abbreviated category name for the program selected by the track that will be played by the KARMA module controlled by operating the knob or switch. If there are multiple programs of different categories, this will indicate [MLTI].

Parameter assignments are specified in the SEQ 6.3: KARMA GE: Parm page (6.3-1(2)(3)(4)) and SEQUENCE 6.4: KARMA RT RTPrm page (6.4-1(2)).

The name can be edited in the SEQ 6.4-4/5: KARMA RT, Name 1/2 page.

The settings of the KARMA Real-time Controls knobs and switches can be switched between two different settings by using the SCENE [1]/[2] keys. The knob and switch settings displayed here will also change according to the SCENE 1/2 setting.

Graphic display of knobs and switches

When you operate a knob or switch to modify the setting it originally had when the song was selected, the graphic display of the knob or switch will be highlighted in black. When you return the knob or switch to the setting it originally had when the song was selected, the display will return to the previous state.

This provides a convenient way for you to return to the original state after you have operated a knob or switch.

A A Sequencer mode song has a different structure than a program or combination, and a different reference value is used to highlight the knob or switch graphic. In the case of a program or combination, the knob or switch value that is written will be the reference value. However in Sequencer mode, the settings at the moment that the song was selected will be the reference value. (The settings when the song was selected will be the settings at the time of loading or last editing.) The operation is as described below.

- ① Select song 000.
The position of knob 1 when song 000 was selected will be the center (64).
At this time, the knob 1 graphic will show 1.
- ② Turn knob 1 all the way to the right (127).
The knob 1 graphic will be highlighted as 1.
- ③ Select a different song (e.g., song 001).
- ④ Select song 000 once again.
The knob 1 setting will be the far right setting (127).
The knob 1 graphic will be 1.

A In Sequencer mode, it is not possible to use the “Restore entire program” operation that is available in Program and Combination modes. You can use the “Restore only SCENE settings” and “Restore only knob and switch settings” operations to revert to the settings at the time the song was selected. (esp.6 Pro-

gram mode “Restoring only SCENE settings,” “Restoring only the knob and switch settings.”)

It is a good idea to save your favorite knob and switch settings on a floppy disk or data filer.

■ 1.1-7b: UTILITY

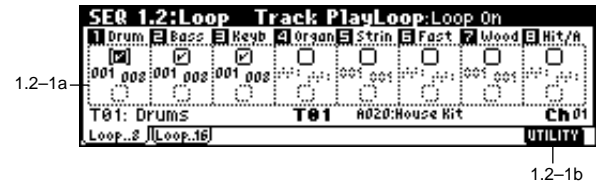
“Memory Status”, “Solo Selected Track”, “Rename Song”, “Delete Song”, “Copy From Song”, “Copy From Comb”, “Load Template Song”, “Save Template Song”, “FF/REW Speed”, “Set Location” (1.1-1d)

SEQ 1.2: Loop

1.2-1: Loop...8 (Track Play Loop T01...08)

1.2-2: Loop...16 (Track Play Loop T09...16)

When playing/recording a song, you can independently loop the playback of tracks 1-16.



1.2-1(2)a: Track Play Loop

Loop On [Off, On]

Turn looping on/off for each track 1-16.

On (checked): That track will loop between “Loop Start Meas” and “Loop End Meas.”

Loop Start Meas (Loop Start Measure) [001...999]

Specifies the first measure of the loop.

Loop End Meas (Loop End Measure) [001...999]

Specifies the last measure of the loop.

Play Intro [Off, On]

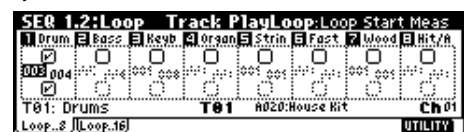
On (checked): After the measures before the specified “Loop Start Meas” are played once, the region of “Loop Start Meas” – “Loop End Meas” will be played repeatedly. For example, you can use this on a drum track to make it play a fill-in and then begin looping.

Off (unchecked): Playback will begin from the “Loop Start Meas,” and will begin looping immediately. (This is how Version 1 operated.)

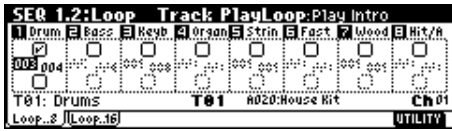
A This will be valid if “Track Play Loop” is checked and “Loop Start Meas” is set to other than 001.

Example)

When “Play Intro” is checked



Track 1 will loop as follows.
 M001-M002-M003-M004-M003-M004-M003-M004...
 When "Play Intro" is not checked



Track 1 will loop as follows.
 M003-M004-M003-M004-M003-M004-M003-M004...

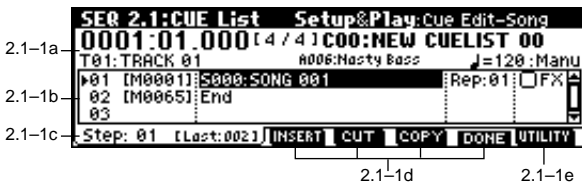
1.2-1(2)b: UTILITY

☞ "Memory Status", "Solo Selected Track", "Rename Song", "Delete Song", "Copy From Song", "Copy From Combi", "Load Template Song", "Save Template Song", "FF/REW Speed", "Set Location" (1.1-1d)

SEQ 2.1: Cue List

2.1-1: Cue List

The cue list allows you to playback multiple songs in succession. You can specify a number of repetitions for each song. This instrument allows you to create twenty cue lists. In a single cue list you can freely connect up to 99 songs. Each unit in a cue list is called a "step," and you can specify a song number and a repeat (number of repetitions) for each step. For example you could create each part of a song (intro, melody A, melody B, break, solo backing, ending etc.) as an individual song, and use a cue list to play the intro twice, melody A four times, melody B four times, the break twice, melody A four times ... etc. to produce the entire song. In cases when you wish to change the structure of the song, this Cue List function can help you work more efficiently. The utility menu command "Convert to Song" (2.1-1e) lets you convert the songs in a cue list into a single song. For example you can use a cue list to create the backing, convert the cue list to a song, and then add solo phrases on unused tracks.



2.1-1a: Location, Meter, Cue List Select, Track Select, Selected Track Information, ♩, Tempo Mode

Location [0001:01.000...9999:15.191]

This displays the current location within the selected cue list. From the left, the numbers indicate the measure, beat, and clock.

The range of the beat and clock will depend on the time signature of the corresponding song.

MIDI When "MIDI Clock" (Global 2.1-1a) is **Internal**, changing the location within a cue list will cause Song Position Pointer messages to be transmitted. If "MIDI Clock" is **External**, this message can be received from the specified source to change the location within the cue list.

If the location exceeds the allowable data range of a Song Position Pointer message, it will not be transmitted.

Meter (Time Signature) [1/4...16/16]

This displays the time signature of the currently-playing song.

Cue List Select [C00...C19: name]

Indicates the cue list that you wish to play.

When using a cue list to play songs, you must first load the necessary data into internal memory, either from floppy disk, or by a MIDI data dump from an external sequencer (☞ p.140).

MIDI When "MIDI Clock" (GLOBAL 2.1-1a) is **Internal**, selecting a cue list in this page will cause a Song Select message (corresponding to the cue list number) and Song Position Pointer message to be transmitted. When "MIDI Clock" is **External**, a Song Select message from the specified source will switch cue lists.

Track Select [T01...T16: name]

Indicates the track that you wish to play manually from the keyboard along with the playback. While a cue list is playing, you can play along using the track settings and musical data of the song selected by the current "Step" (2.1-1c). The track you select here will also follow the track settings and musical data of the currently playing song. If you wish to continue using the same program to play along from the keyboard with consecutive songs, specify the same program for this track in the songs of each Step.

Selected Track Information

This area shows the program bank number, program number, and name of the track selected in "Track Select."

♩ (Tempo) [040...240, EXT]

Specifies the tempo at which the song in the cue list will be played (☞ "1.1-1a: Tempo").

Tempo Mode [Auto, Manu]

Auto: Playback will use the tempo specified by the currently playing song. During playback, the "♩ (Tempo)" setting cannot be modified.

Manu (Manual): Tempo specified in the song will be ignored, and playback will use the tempo specified above for "♩ (Tempo)."

2.1-1b: Step, Cue Edit-Song, Rep (Cue Edit-Repeat), FX (Cue Edit-Load FX)

Here you can create and edit a Cue List. Immediately after the power is turned on, the cue list will show a default cue list of two "Steps," consisting of "Step" 01 (S000: NEW SONG) and "Step" 02 (End).

To create or edit a cue list, press the [F7] ("EDIT") key. If you now select a song for "Step" 01, that song will play once. If you set "Rep (Repeat)" to 02, that song will play twice. Press [F7] ("EDIT"), and with "Step" 01 selected, press the [F4] ("Insert") key to insert a step.

For example with "Song" S001 selected for "Step" 01, set "Rep" to 02, select "Song" S002 for "Step" 02 and set "Rep" to 02. When you press the [START/STOP] key, song 1 (S001) will be played twice, and then song 2 will be played twice. In this way, arrange the desired songs in the cue list and specify the number of times that each will be played.

Step [Measure] [01...100 (M0001...M9999)]

This shows the step number and its beginning measure. When playback is stopped, the step currently selected by "Step" (2.1-1c) will be a black triangle. When you use the [START/STOP] key to begin playback, it will begin from this step. While a cue list is playing, the playing step will be a black triangle.

"M**** (Measure)" shows the beginning measure of each step. It cannot be edited.

Cue Edit-Song [S000...S199: name, End, Continue to Step01]

This selects the song for the step. It cannot be selected during playback.

You can also select whether playback will end with the last step in the cue list, or whether playback will return to "Step" 01 and continue endlessly.

End: Playback will end.

Continue to Step01: Playback will return to "Step" 01, and the cue list will continue playing endlessly. To stop, press the [START/STOP] key.

Rep (Cue Edit-Repeat) [01...64, FS]

Specifies the number of times that the song of this step will be repeated.

FS: A foot switch connected to the rear panel can be used to specify the point at which the song will stop repeating.


When you press the foot switch, that repetition of the song will finish playing, and then playback will continue to the next step. Set "Foot Switch Assign" (GLOBAL 6.1-1a) to **Cue Repeat Control**.

FX (Cue Edit-Load FX) [Off, On]

Specifies whether the effect settings will also change simultaneously when the playback advances to the song of the next step.

On (checked): The effect settings will change to those of the newly selected song.

Off (unchecked): The effect settings will not change.

 Depending on the effect settings, a certain amount of time may be required to switch effects. In this case, playback will not be smoothly connected from song to song.

If you want to transition smoothly from song to song, **check "FX" in "Step" 01**. For the remaining steps, do **not check "FX"**. With these settings, the effects will be set before playback begins, so there will be no time lag to interrupt the smooth transition between songs. Although it is not possible to change the effect types in

the middle of a cue list, you can use the dynamic modulation function or MIDI control changes (effect control) to apply reverb more deeply to certain songs, or raise the LFO speed for other songs, etc. When using a cue list to construct a song, we recommend this method.

When you execute the "Convert to Song" (2.1-1e) page menu command, the effect settings of the "Step" 01 song will be specified at the beginning of the song that is created by the conversion.

Even when "FX" is **not checked**, there may be a time lag in the transition from one song to the next, depending on the musical data in the song. There may also be cases in which the musical data at the transition between songs does not play at the correct timing. To fix this, you can edit the musical data of the song, or convert the cue list to a single song. If you use "Convert to Song" (2.1-1e) to convert the cue list to a song, there will be no time lag at the transition, and the musical data will play at the correct timing.

2.1-1c: Step (Current Step)

Step (Current Step) [01...100]

Indicates the step that will be inserted, cut or copied. If you wish to playback from a step in the middle of the cue list, select the desired step here, and press the [START/STOP] key.

Last Step [Last: 001...100]

This will be displayed at the right of "Step" for the last step.

2.1-1d: EDIT/DONE, INSERT, CUT, COPY

EDIT/DONE ([F7])

Press this to create or edit a cue list. When you press this key, the display will change from "EDIT" to "DONE."

When you are finished creating or editing the cue list, press "DONE" (the [F7] key).

INSERT ([F4])

When you press the [F4] ("Insert") key, the step data that was temporarily saved in the buffer by the [F6] ("Copy") key or [F5] ("Cut") key will be inserted at the "Current Step." (If copy or cut has not been executed, default data will be inserted.)

CUT ([F5])

When you press the [F5] ("Cut") key, the "Current Step" will be cut, and its data will be saved temporarily in the buffer. If you Insert immediately after you cut, the data will return the state in which it was before you cut.

COPY ([F6])

When you press the [F6] ("Copy") key, the data of the "Current Step" will be saved temporarily in the buffer. Press the [F4] ("Insert") key to insert the copied step into the "Step."

■ 2.1-1e: UTILITY



☞ “Memory Status”, “FF/REW Speed”, “Set Location” (1.1-1d)

Rename Cue List

This command lets you rename the selected cue list. In the “Rename Cue List” dialog box, press the [F5] (“Name”) key, and enter the desired name. You can input up to 16 characters. (☞BG p.39)

Delete Cue List

This command deletes the currently selected cue list.

- ① Select “Delete Cue List” to access the dialog box.

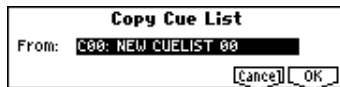


- ② To execute, press the [F8] (“OK”) key. To cancel without executing, press the [F7] (“Cancel”) key. When you execute this command, the settings of the currently selected cue list will be deleted.

Copy Cue List

This command copies the settings of another cue list to the currently selected cue list.

- ① Select “Copy Cue List” to access the dialog box.



- ② In “From,” specify the copy source cue list.
- ③ To execute, press the [F8] (“OK”) key. To cancel without executing, press the [F7] (“Cancel”) key. When you execute this command, the settings of the currently selected cue list will be deleted and rewritten by the copy source data.

Convert to Song (Convert Cue List to Song)

This command converts a cue list consisting of multiple songs to a single song. Although it is not possible to record additional tracks into a cue list, you can convert the cue list to a song, and then record solos etc. onto open tracks. Also, it will be necessary to convert a cue list to a song if you wish to write it to a floppy disk as SMF data. During the conversion, the track and effect settings of the song specified for “Step” 01 will be copied to the beginning of the resulting song, and all track and effect settings of subsequent songs will use the settings of the song for “Step” 01.

The “Convert to Song” command converts a cue list to a song as described below.

Song/Track parameters will use the settings of the “Step” 01 song.

🔊 The MIDI channel of each track will be according to the settings of the “Step” 01 song. If “Step” 02 and following songs have different settings, it may not be possible to convert the playback result of the cue list into a song. As far as possible, try to keep the MIDI channel assignments consistent between songs that you intend to use as part of a play list that will be converted into a song.

The following track parameters will not be reflected in the conversion. As with the MIDI channels, we recommend that you keep these settings consistent between all songs in the cue list.

SOLO ON/OFF, Status, MIDI Channel, Bank Select (When Status = EX2), Force OSC Mode, OSC Select, Delay, Use Programs Scale, MIDI Filter 1-4, Key Zone, Velocity Zone

Converting Song/Track parameters into track events

Second and subsequent repetitions of the “Step” 01 song, and the settings of “Step” 02 and following songs will all be converted into track events (musical data). The following data will be converted.

Track1-16	Bank/Program, Pan, Volume, Portamento, Detune, Bend Range
Master Track	Tempo, Meter

If “Pan” (1.1-4(5)a) is **RND**, it will be converted to **C064**. If “Portamento” (3.1-3(4)a) is **PRG**, or if “Bend Range” (3.1-5(6)a) is **PRG** or a **negative value**, these will not be reflected in the conversion.

🔊 “Detune” (3.1-5(6)a) will be divided into RPN Fine Tuning and Coarse Tuning, and converted into events. For example if the “Detune” setting of +600, Fine Tuning will be 00 and Coarse Tuning will be 6. Fine Tuning will modify the playback pitch (Detune). Coarse Tuning will change the notes that are played back (Transpose). For this reason with some programs such as drum programs, the playback result produced by a cue list may not be reproduced when the cue list is converted into a song.

Converting “Track Play Loop” (SEQ 1, 2: Loop, Track Play-loop page)

If “Loop On” is on, the area from “Loop Start Meas” to “Loop End Meas” will be expanded as far as the last measure in the master track.

Example)

If Track Play Loop is M005–M008, and the master track contains 10 measures, the data will be expanded from the beginning of the track as M005, 6, 7, 8, M005, 6, 7, 8, M005, 6.

Converting patterns

Patterns in the “Step” 01 song will be copied as patterns of the converted song.

If there is a second or subsequent repeat for “Step” 01, or if the tracks of “Step” 02 and subsequent songs contain patterns, they will be expanded into track events (musical data).

“Transpose” settings

If the “Transpose” (3.1–5(6)a) of the tracks in “Step” 02 and subsequent songs differ from the settings of the “Step” 01 song, the note numbers of the note data will be shifted.

Example)

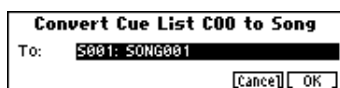
If “Step” 01 “Transpose” = +1 and “Step” 02 “Transpose” –1, the actual note numbers of the “Step” 02 track note data will be shifted downward by 2.

If “Rep” is set to FS (Foot Switch), it will be converted as “Rep” 1.

When you execute “Convert to Song” to convert a cue list to a song, the repeat settings within the cue list and the pattern and track play loop settings of the songs used by the cue list will all be converted into events such as note data. For this reason, the amount of data will increase significantly, and in some cases there may not be enough internal memory to perform the conversion. In particular if the cue list uses long songs, or if numerous repeats have been specified, or if many patterns are used by the songs, you should try executing the “Convert to Song” command from time to time as you create the cue list, in order to verify the amount of memory that will be required for the conversion.

A cue list that is longer than 999 measures cannot be converted into a song.

- ① Select the cue list (C00–C19) that you wish to convert into a song.
- ② Select “Convert to Song” to access the dialog box.



- ③ In “To,” specify the song into which the cue list will be converted. If you select a new song, a dialog box will ask you for confirmation. Press the [F8] (“OK”) key to create a new song and convert the cue list to that song.
- ④ To execute the conversion, press the [F8] (“OK”) key. To cancel, press the [F7] (“Cancel”) key. If you select an existing song that already contains settings and/or musical data, executing this command will erase the data of that song and rewrite it with the data that was converted from the cue list. Before you execute, be sure that you will not be losing important data. After executing this command, you can press the [COMPARE] key to return to the state before execution.

Copy Song

This command creates a song from a specified portion of a song in a cue list. For example if you have an eight-measure song and want to repeat measures 5–8, you can use this command to create a four-measure song out of that portion. Then you can assign the resulting song to a step in a cue list, and repeat it.

- ① In “Step,” select the desired step.

- ② Select “Copy Song” to access the dialog box.



- ③ In “From Measure,” specify the first measure in the copy source song. In “To End of Meas,” specify the last measure.
- ④ In “To,” specify the song into which the data will be converted. If you select a new song, a dialog box will ask you for confirmation. Press the [F8] (“OK”) key to create a new song and copy the data to that song. If you select an existing song that already contains settings and/or musical data, executing this command will erase the data of that song and rewrite it with the data from the copy source. Before you execute, be sure that you will not be losing important data.
- ⑤ If you check “Replace to original Song in Cue” and execute this command, the “Step” song will be replaced by the newly created song. If you execute without checking this box, the newly created song can be selected later for the desired step of the cue list.
- ⑥ To execute the Copy Song operation, press the [F8] (“OK”) key. To cancel, press the [F7] (“Cancel”) key.

SEQ 2.2: Controller

2.2–1: Ctrls (Controls)

Here you can set the functions that the [SW1] key, [SW2] key, and the B-mode functions that the REAL-TIME CONTROL knobs [1]–[4] will have in Sequencer mode.

When these switches or knobs are operated during recording, the MIDI messages that you assign here will be recorded.

SEQ 2.2:Controller		Controls:Knob1–B Assign	
2.2-1a	Knob B Assign	SW1/2 Assign	
	Knob1-B:Knob Mod.1 (CC#17)	SW1:SW1 Mod. (CC#00)	
	Knob2-B:Knob Mod.2 (CC#19)	:Toggle	
	Knob3-B:Knob Mod.3 (CC#20)	SW2:SW2 Mod. (CC#01)	
	Knob4-B:Knob Mod.4 (CC#21)	:Toggle	
	Ctrl:		UTILITY

2.2-1b

2.2-1c

2.2–1b: Knob B Assign

Here you can set the B-mode functions (mainly various control changes) that the front panel REAL-TIME CONTROL knobs [1]–[4] will have in Sequencer mode (p.231 “Realtime Control Knobs B Assign List”). The functions you specify here will operate when you rotate the front panel REAL-TIME CONTROL knobs [1]–[4] in B-mode. Since the functions assigned to these knobs by the program of each track will not be valid, you can make new assignments here.

Knob1-B (Knob1-B Assign)	AMSource	[Off...MIDI CC#95]
Knob2-B (Knob2-B Assign)	AMSource	[Off...MIDI CC#95]
Knob3-B (Knob3-B Assign)	AMSource	[Off...MIDI CC#95]
Knob4-B (Knob4-B Assign)	AMSource	[Off...MIDI CC#95]

“Knob B Assign” (PROG 2.2–1a).

2.2-1b: SW1/2 Assign

Here you can assign functions to the front panel [SW1] and [SW2] keys (p.230 "SW1, SW2 Assign List"). Since the functions assigned to these switches and knobs by the program of each track will not be valid, you can make new assignments here.

SW1 (SW1 Assign) **AMSource** [Off, ..., After T Lock]
 SW1 Mode [Toggle, Momentary]
 SW2 (SW2 Assign) **AMSource** [Off, ..., After T Lock]
 SW2 Mode [Toggle, Momentary]

☞ "SW 1/2 Assign" (PROG 2.2-1b).

2.2-1c: UTILITY



☞ "Memory Status", "Solo Selected Track", "Rename Song", "Delete Song", "Copy From Song", "Copy From Combi", "Load Template Song", "Save Template Song", "FF/REW Speed", "Set Location" (1.1-1d)

SEQ2.3: MOSS

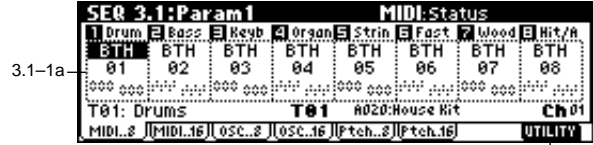
This page is displayed when the separately sold EXB-MOSS option has been installed.
 (☞ EXB-MOSS owner's manual & p.269 "EXB-MOSS option")

SEQ 3.1: Param 1

3.1-1: MIDI...8 (MIDI T01...08)

3.1-2: MIDI...16 (MIDI T09...16)

Here you can make MIDI-related settings for each track.



3.1-1b

3.1-1(2)a: Status, MIDI Channel, Bank(EX2) MSB/LSB

Status [INT, Off, BTH, EXT, EX2]

This sets the status of MIDI and the internal tone generator for each track.

INT: When the musical data recorded in the track is played back, or when you use "Track Select" (1.1-1c) to select a track that is set to INT and play the keyboard and operate the controllers, the internal tone generator of this instrument will sound, and MIDI data will not be transmitted to an external device.

Off: The program will not sound, nor will MIDI data be transmitted.

BTH: The operation of both INT and EXT will be performed. When the musical data recorded in the track is played back, or when you select a track that is set to BTH and play the keyboard and operate the controllers, the internal tone generator of this instrument will sound, and at the same time MIDI data will also be transmitted to an external device.

EXT: When the musical data recorded in the track is played back, or when you select a track that is set to EXT and play the keyboard and operate the controllers, MIDI data will be transmitted to an external device, but the internal tone generator of this instrument will not sound.

When you switch songs or reset to the beginning of the song, tracks that are set to EXT will transmit program change, volume, panpot, portamento, send 1, 2, post IFX pan, and post IFX send 1, 2 MIDI messages.

EX2: "Bank Select" will be enabled. Instead of the A-g(d) bank numbers that can be selected on this instrument, the bank number you specify here will be transmitted. In other respects this is the same as EXT.

MIDI MIDI data is transmitted and received on the MIDI channel that is specified separately for each track by "MIDI Channel."

	Recorded data Keyboard and controller operations		Received data	
	Internal tone generator	MIDI OUT	Internal tone generator	MIDI OUT
Status				
INT	●	×	●	—
EXT, EX2	×	●	×	—
BTH	●	●	●	—

MIDI Channel [01...16]

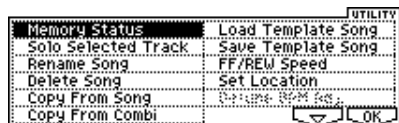
Specifies the MIDI channel that the track will use to transmit and receive musical data. The MIDI channel you specify here will be the receive channel when "Status" is INT, the transmit channel when it is EXT or EX2, and the receive/transmit channel when it is BTH. Tracks set to INT which have the same MIDI channel will sound and be controlled identically when they receive MIDI data or data from the sequencer tracks.

Bank(EX2) MSB [000...127]

Bank(EX2) LSB [000...127]

When "Status" is set to EX2, this sets the bank number that will be transmitted. When "Status" is other than EX2, this setting has no effect.

3.1-1(2)b: UTILITY

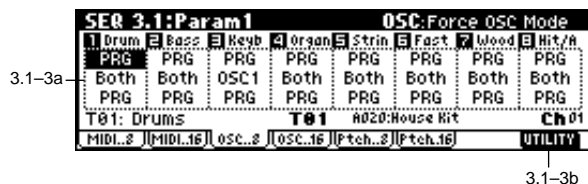


☞ "Memory Status", "Solo Selected Track", "Rename Song", "Delete Song", "Copy From Song", "Copy From Combi", "Load Template Song", "Save Template Song", "FF/REW Speed", "Set Location" (1.1-1d)

3.1-3: OSC..8 (OSC T01...08)

3.1-4: OSC..16 (OSC T09...16)

These parameters specify how each track will be sounded.



3.1-3a

3.1-3b

MIDI The portamento setting you make here will be used when the song is played or recorded from the beginning. If you change the setting while recording, it will be recorded as part of the musical data. (However if you set this to PRG, it will not be recorded.) You can change this setting during playback. However if you come to any Portamento On/Off data or Portamento Time data that was recorded, the settings will change accordingly.

When the track whose "Status" (3.1-1a) is INT or BTH, MIDI control change (CC) #5 (Portamento Time) and CC#65 (Portamento Switch) can be received to control this and change the setting. (If the setting is PRG, CC#05 Portamento Time will not be received.)

When you switch songs or return to the beginning of the song, tracks whose "Status" is BTH, EXT, or EX2 will transmit this setting via MIDI. If this is Off, CC#65 with a value of 0 will be transmitted. If this is 000-127, a CC#65 of 127 and CC#05 of 1-127 will be transmitted. If this is set to PRG, nothing will be transmitted.

This data is transmitted on the MIDI channel specified for each track by "MIDI Channel" (3.1-1a).

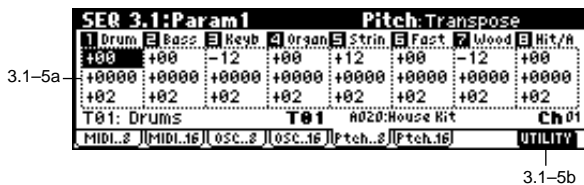
3.1-3(4)b: UTILITY

☞ "Memory Status", "Solo Selected Track", "Rename Song", "Delete Song", "Copy From Song", "Copy From Combi", "Load Template Song", "Save Template Song", "FF/REW Speed", "Set Location" (1.1-1d)

3.1-5: Ptch..8 (Pitch T01...08)

3.1-6: Ptch..16 (Pitch T09...16)

Here you can make pitch-related settings for each track.



3.1-5a

3.1-5b

3.1-3(4)a: Force OSC Mode, OSC Select, Portamento

Force OSC Mode [PRG, Poly, MN, LGT]

Indicates the "Voice Assign Mode" (PROG 2.1-1b) of the program selected for each track 1-16 (☞COMBI 3.1-2a).

OSC Select [Both, OS1, OS2]

Specifies the "Oscillator Mode" (PROG 2.1-1a) of the program selected for each track 1-16. If the "Oscillator Mode" is Double, you can use this setting to make only one or the other oscillator sound (☞COMBI 3.1-2a).

Portamento [PRG, Off, 001...127]

Specifies the portamento effect for each track 1-16 (☞COMBI 3.1-2a).

3-5(6)a: Transpose, Detune, Bend Range

Transpose [-24...+24]

Adjusts the pitch of each track in semitone steps. 12 steps are one octave.

Detune (BPM Adj.) [-1200... +1200]

Adjusts the pitch of each track in one-cent steps from the normal pitch.

0: Normal pitch.

note You can use the "Detune BPM Adjust" (3.1-5(6)b) page menu command to make a calculation in BPM units and set Detune automatically.

MIDI "Transpose" and "Detune" settings do not affect the note data that is transmitted via MIDI. "Transpose" and "Detune" are controlled by received MIDI RPN messages. The "Oscillator Mode" (PROG 2.1-1a) of the programs selected for tracks 1-16 will be controlled as follows.

- If “Oscillator Mode” is **Single** or **Double**, MIDI RPN Coarse Tune messages can be received to control and change the “Transpose” setting, and Fine Tune messages to control and change the “Detune” setting.
- If “Oscillator Mode” is **Drums**, MIDI RPN Coarse Tune and Fine Tune messages can be received to control and change the “Detune” setting. The range of control will be ± 1 octave when Coarse Tune and Fine Tune are added. These messages will be received on the MIDI channel that is specified for each track by “MIDI Channel” (3.1–1a).

Bend Range [PRG, -24...+24]

Specifies the range of pitch change that will occur when the pitch bender is operated.

PRG: The pitch range specified by the program will be used. **-24+24:** Regardless of the setting of the program, pitch bending will use the range you specify here.

MIDI This setting can be controlled and changed by received MIDI RPN Pitch Bend Range messages. (These messages will not be received if the setting is **PRG**.) (esp.p.60 COMBI 6.1–6a Tx Filter “GE Bend”)

3.1–5(6)b: UTILITY



esp “Memory Status”, “Solo Selected Track”, “Rename Song”, “Delete Song”, “Copy From Song”, “Copy From Combi”, “Load Template Song”, “Save Template Song”, “FF/REW Speed”, “Set Location” (1.1–1d)

Detune BPM Adj.

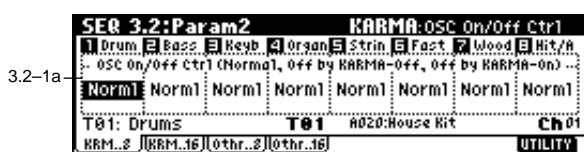
When the program selected for a track uses a phrase or rhythm loop multisample (esp PROG 2.1–2(3)b, GLOBAL 5.1–1b/2a), you can use this command to change the BPM of the phrase or rhythm. The BPM can be adjusted by modifying the pitch. This command is available for a track when the “Detune” setting of that track is selected. When you execute this command, the selected “Detune” value will be adjusted. For the procedure, refer to “Detune BPM Adjust” (COMBI 3.1–3b).

SEQ 3.2: Param2

3.2–1: KRM..8 (KARMA T01...08)

3.2–2: KRM..16 (KARMA T09...16)

Specifies how KARMA ON/OFF will control the sound of each track.



3.2–1b

3.2–1(2)a: OSC On/Off Ctrl

OSC On/Off Ctrl [Norml, by Off, by On]

Norml (Normal): The KARMA [ON/OFF] key will not control the sound of the track. In most cases, you should select the **Norml** setting.

by Off (Off by KARMA-Off): When the KARMA [ON/OFF] key is **on**, the track will sound as usual. When the KARMA [ON/OFF] key is **off**, the track will not sound.

Use this setting if multiple tracks are set to the same MIDI channel and you want a specific one of these tracks to be muted only when the KARMA function is off.

by On (Off by KARMA-On): When the KARMA [ON/OFF] key is **on**, the track will not sound. When the KARMA [ON/OFF] key is **off**, the track will sound as usual.

Use this setting if multiple tracks are set to the same MIDI channel, and you want only a specific track to be muted when the tracks are being controlled by the KARMA module.

For example you can use this to play from the keyboard using a two-track layer when the KARMA function is off, and play the phrase on one track when the KARMA function is on.

If the “Status” (3.1–1a) of each track is **INT**, you can use the **OSC On/Off Ctrl** setting to stop the oscillator of each track from sounding.

! If you set “OSC On/Off Ctrl” to **by Off** or **by On** settings and operate the KARMA [ON/OFF] key while real-time-recording a song, you must be aware of the following points.

- In order to control this parameter during playback, operations of the KARMA [ON/OFF] key must be recorded in real-time.
- Set GLOBAL 6.1: Controller KARMA 2 page “KARMA Real-time Controls ON/OFF” (6.1–3a) to **MIDI CC#14**. If this is assigned to **MIDI CC#14**, operations of the KARMA [ON/OFF] key can be recorded in real-time.
- Operations will also be recorded if you assign this key to **MIDI CC#00–95**, but in order to avoid confusion when receiving another CC#, you should use CC#14.
- “KARMA Real-time Controls ON/OFF” (6.1–3a) will also be set to **MIDI CC#14** if you execute the utility menu command “Reset KARMA Ctrls Assign” with “To:” set to **Default Setting**. After executing, turn the assignment **Off** for other KARMA Real-time Controls that you do not need to record.

3.2–1(2)b: UTILITY

esp “Memory Status,” “Solo Selected Track,” “Rename Song,” “Delete Song,” “Copy From Song,” “Copy From Combi,” “Load Template Song,” “Save Template Song,” “FF/FEW Speed,” “Set Location” (1.1–1d)

3.2-3: Othr..8 (Other T01...08)

3.2-4: Othr..16 (Other T09...16)

Here you can make additional settings for each track.



3.2-3c

3.2-3(4)a: Delay [ms], Use Prog's Scale

Delay [ms] (Delay Time) [0000...5000, KeyOff]

Specifies a delay time from when a track receives a note-on until it actually sounds.

KeyOff: The sound will begin when note-off occurs. In this case, the sound will continue indefinitely unless the amp EG Sustain Level of the program is other than 0. This setting is useful for simulating harpsichord sounds. Normally you will leave this at 0.

Use Prog's Scale (Use Program's Scale) [On, Off]

Each track can use the scale that is specified for the program by "Type."

On (checked): The scale of the program will be used.
Off (unchecked): The scale specified by "Type" (3.2-3(4)b) will be used.

3.2-3(4)b: Scale

Specifies the scale that will be used for the song.

Type (Song's Scale) [Equal Temperament...User Octave Scale15]

Indicates the type of scale (see "Type" PROG 2.1-1c).

Key [C...B]

Indicates the tonic key of the selected scale (see "Key" PROG 2.1-1c).

Random [0...7]

As this value is increased, an increasingly random deviation will be added to the pitch at each note-on (see "Random" PROG 2.1-1c).

3.2-3(4)c: UTILITY

see "Memory Status", "Solo Selected Track", "Rename Song", "Delete Song", "Copy From Song", "Copy From Combi", "Load Template Song", "Save Template Song", "FF/REW Speed", "Set Location" (1.1-1d)

SEQ 3.3: Key Zone

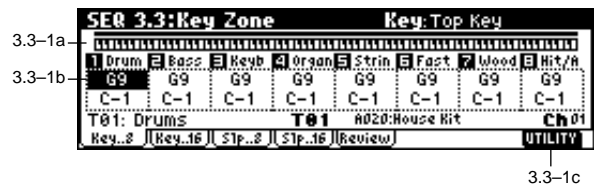
Here you can specify the range of keys that will be sounded by each track.

Top/Bottom Key settings specify the range of notes that will be sounded by tracks 1-8, 9-16, and Top/Bottom Slope settings specify the range from the top/bottom key until the original volume is reached.

MIDI These settings do not affect MIDI transmission/reception. All note data that is received will be recorded into the internal sequencer, and all note data from the internal sequencer or from the keyboard will be transmitted.

3.3-1: Key..8 (Key T01...08)

3.3-2: Key..16 (Key T09...16)



3.3-1c

3.3-1(2)a: Key Zone Map

This shows the range of note data that will sound the currently selected track. The note range that will be sounded is shown as a line, and the slope portion is grayed. (see p.52 COMBI 3.3-1a)

3.3-1(2)b: Top Key, Bottom Key

Top Key [C-1...G9]

Specifies the top key (upper limit) that will be sounded by each track 1-8, 9-16.

Bottom Key [C-1...G9]

Specifies the bottom key (lower limit) that will be sounded by each track 1-8, 9-16. For a diagram of Key and Slope parameters, refer to "COMBI 3.3: Ed-Key Zone."

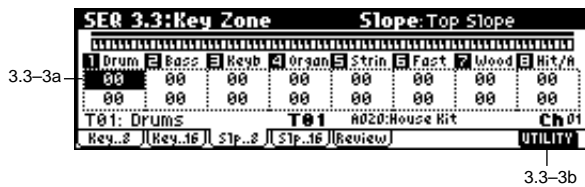
note You can also enter a value for these parameters by playing a note while you hold down the [ENTER] key.

■ 3.3-1(2)c: UTILITY

☞ “Memory Status”, “Solo Selected Track”, “Rename Song”, “Delete Song”, “Copy From Song”, “Copy From Combi”, “Load Template Song”, “Save Template Song”, “FF/REW Speed”, “Set Location” (1.1-1d)

3.3-3: Slp..8 (Slope T01...08)

3.3-4: Slp..16 (Slope T09...16)



3.3-3b

3.3-3(4)a: Top Slope, Bottom Slope

Top Slope [00...72]

Specifies the key range (12 is one octave) from the top key until the original volume is reached.

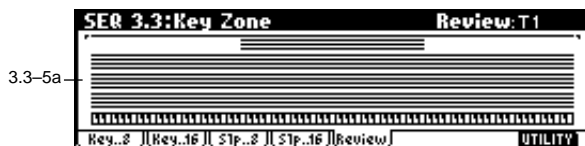
Bottom Slope [00...72]

Specifies the key range (12 is one octave) from the bottom key until the original volume is reached.

■ 3.3-3(4)b: UTILITY

☞ “Memory Status”, “Solo Selected Track”, “Rename Song”, “Delete Song”, “Copy From Song”, “Copy From Combi”, “Load Template Song”, “Save Template Song”, “FF/REW Speed”, “Set Location” (1.1-1d)

3.3-5: Review



3.3-5b

3.3-5a: Key Zone Map (All)

T1...T16

This shows the range of note data that will be sounded by tracks 1-16. The note range that will be sounded is shown as a line, and the slope portion is grayed.

■ 3.3-5b: UTILITY

☞ “Memory Status”, “Solo Selected Track”, “Rename Song”, “Delete Song”, “Copy From Song”, “Copy From Combi”, “Load Template Song”, “Save Template Song”, “FF/REW Speed”, “Set Location” (1.1-1d)

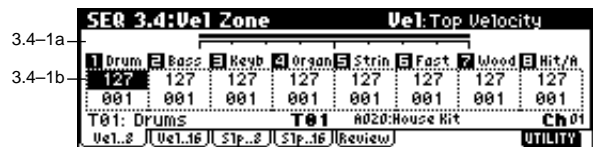
SEQ 3.4: Vel Zone

Top/Bottom Velocity specify the range of velocities that will be sounded by tracks 1-8 and 9-16, and Top/Bottom Slope specify the range over which the volume will be adjusted.

MIDI These settings do not affect MIDI transmission/reception. All note data that is received will be recorded into the internal sequencer, and all note data from the internal sequencer or from the keyboard will be transmitted.

3.4-1: Vel..8 (Vel T01...08)

3.4-2: Vel..16 (Vel T09...16)



3.4-1c

3.4-1(2)a: Velocity Zone Map (1)

This shows the range of velocities that will sound the currently selected track. The velocity range that will be sounded is shown as a line, and the slope portion is grayed. (☞p.53 COMBI 3.4-1a)

3.4-1(2)b: Top Velocity, Bottom Velocity

Top Velocity [1...127]

Specifies the maximum velocity that will be sounded by each track 1-16.

Bottom Velocity [1...127]

Specifies the minimum velocity that will be sounded by each track 1-16.

For a diagram of these parameters, refer to “COMBI 3.4: Ed-Vel Zone.”

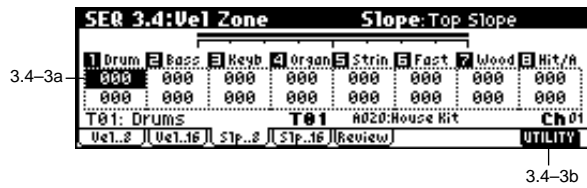
note You can also enter a value for these parameters by playing a note while you hold down the [ENTER] key.

■ 3.4-1(2)c: UTILITY

☞ “Memory Status”, “Solo Selected Track”, “Rename Song”, “Delete Song”, “Copy From Song”, “Copy From Combi”, “Load Template Song”, “Save Template Song”, “FF/REW Speed”, “Set Location” (1.1-1d)

3.4-3: Slp..8 (Slope T01...08)

3.4-4: Slp..16 (Slope T09...16)



3.4-3(4)a: Top Slope, Bottom Slope

Top Slope [0...120]

Specifies the range of values over which the volume will be adjusted from the top velocity until the original volume is reached.

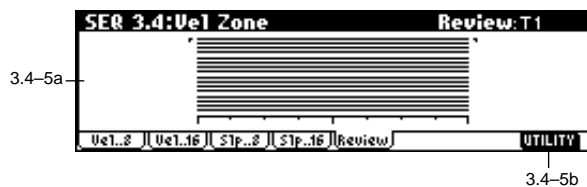
Bottom Slope [0...120]

Specifies the range of values over which the volume will be adjusted from the bottom velocity until the original volume is reached.

■ 3.4-3(4)b: UTILITY

☞ “Memory Status”, “Solo Selected Track”, “Rename Song”, “Delete Song”, “Copy From Song”, “Copy From Combi”, “Load Template Song”, “Save Template Song”, “FF/REW Speed”, “Set Location” (1.1-1d)

3.4-5: Review



3.4-5a: Velocity Zone Map (All)

T1...T16

This shows the range of velocity that will be sounded by tracks 1-16. The note range that will be sounded is shown as a line, and the slope portion is grayed.

■ 3.4-5b: UTILITY

☞ “Memory Status”, “Solo Selected Track”, “Rename Song”, “Delete Song”, “Copy From Song”, “Copy From Combi”, “Load Template Song”, “Save Template Song”, “FF/REW Speed”, “Set Location” (1.1-1d)

SEQ 4.1: MIDI Filter 1

Here you can select whether or not to apply filtering to the MIDI data received by tracks 1-16. For example even if two tracks are receiving the same MIDI channels, one can be made to respond to damper pedal activity while the other does not.

note These MIDI filter settings have no effect on the MIDI messages that have already been recorded.

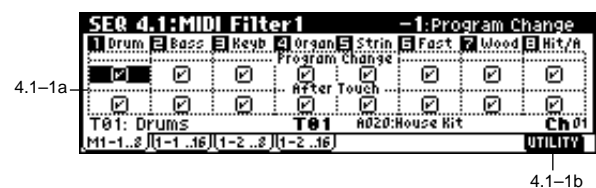
note These MIDI filter settings do not affect the transmission of MIDI messages that have already been recorded. These settings affect the MIDI messages that are transmitted when you adjust program, pan, volume, portamento and send 1/2 parameters of a track whose “Status” (3.1-1(2)a) is set to **BTH**, **EXT**, or **EX2**.

On (checked): Reception of MIDI data is enabled. Tracks whose “Status” (3.1-1(2)a) is **INT** or **BTH** will receive MIDI messages whose channel matches and whose types are checked. The types of effect that are checked will be applied to the program of each track when this instrument’s controllers are operated or when MIDI data is received. (The effect dynamic modulation function is not affected by these settings.) Settings that regulate MIDI transmission/reception of this instrument itself are made in “MIDI Filter” (GLOBAL 2.1-1b).

If the user-assignable controllers that can be filtered in the MIDI Filter 3 and MIDI Filter 4 pages are set to MIDI control changes, filtering will be performed for these control changes. In this case, any control change filtering that is being performed in the MIDI Filter 1 and MIDI Filter 2 pages will be given priority. Furthermore, if the same control change is assigned to multiple controllers for which there are filter settings in the MIDI Filter 3 and 4 pages, checking any one of these will enable that control change. **Off (unchecked):** Reception of MIDI data is disabled.

4.1-1: M1-1..8 (MIDI Filter1-1 T01...08)

4.1-2: 1-1..16 (MIDI Filter1-1 T09...16)



4.1-1(2)a: Program Change, After Touch

Program Change [Off, On]

Specifies whether or not MIDI program change messages will be received.

After Touch [Off, On]

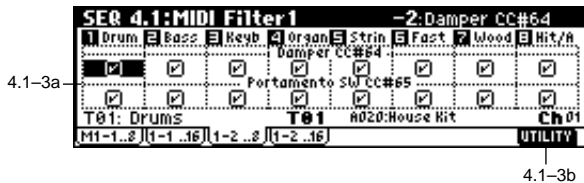
Specifies whether or not MIDI after touch messages will be received.

■ 4.1-1(2)b: UTILITY

☞ “Memory Status”, “Solo Selected Track”, “Rename Song”, “Delete Song”, “Copy From Song”, “Copy From Combi”, “Load Template Song”, “Save Template Song”, “FF/REW Speed”, “Set Location” (1.1-1d)

4.1-3: 1-2..8 (MIDI Filter1-2 T01...08)

4.1-4: 1-2..16 (MIDI Filter1-2 T09...16)



4.1-3a

4.1-3b

4.1-3(4)a: Damper, Portamento SW

Damper CC#64 [Off, On]

Specifies whether or not MIDI control change message #64 Hold (damper pedal) will be received.

Portamento SW CC#65 [Off, On]

Specifies whether or not MIDI control change message #65 Portamento On/Off will be received.

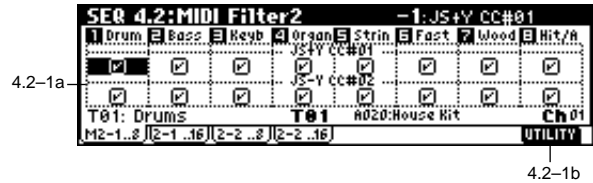
4.1-3(4)b: UTILITY

☞ “Memory Status”, “Solo Selected Track”, “Rename Song”, “Delete Song”, “Copy From Song”, “Copy From Combi”, “Load Template Song”, “Save Template Song”, “FF/REW Speed”, “Set Location” (1.1-1d)

SEQ 4.2: MIDI Filter2

4.2-1: M2-1..8 (MIDI Filter2-1 T01...08)

4.2-2: 2-1..16 (MIDI Filter2-1 T09...16)



4.2-1a

4.2-1b

4.2-1(2)a: JS+Y, JS-Y

JS+Y CC#01 [Off, On]

Specifies whether or not MIDI control message #1 (the +Y axis of this instrument’s joystick, or assigned to B-mode of the REAL-TIME CONTROL knobs [1]-[4]) will be received.

JS-Y CC#02 [Off, On]

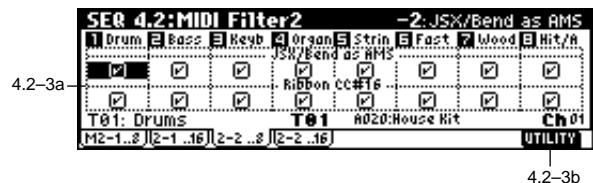
Specifies whether or not MIDI control message #2 (the -Y axis of this instrument’s joystick, or assigned to B-mode of the REAL-TIME CONTROL knobs [1]-[4]) will be received.

■ 4.2-1(2)b: UTILITY

☞ “Memory Status”, “Solo Selected Track”, “Rename Song”, “Delete Song”, “Copy From Song”, “Copy From Combi”, “Load Template Song”, “Save Template Song”, “FF/REW Speed”, “Set Location” (1.1-1d)

4.2-3: 2-2..8 (MIDI Filter2-2 T01...08)

4.2-4: 2-2..16 (MIDI Filter2-2 T09...16)



4.2-3a

4.2-3b

4.2-3(4)a: JSX/Bend as AMS, Ribbon

JSX/Bend as AMS [Off, On]

Allow incoming MIDI pitch bend messages (the X-axis of this instrument’s joystick) to control the AMS (☞ “Alternate Modulation Source”) that is specified for JS X. (This is not a reception filter for MIDI pitch bend messages.)

Ribbon CC#16 [Off, On]

Specifies whether MIDI control change message #16 (specified as the B-mode assignment of REAL-TIME CONTROLS knobs [1]–[4], or the ribbon controller of a TRITON etc.) will be received.

■ 4.2–3(4)b: UTILITY

☞ “Memory Status”, “Solo Selected Track”, “Rename Song”, “Delete Song”, “Copy From Song”, “Copy From Combi”, “Load Template Song”, “Save Template Song”, “FF/REW Speed”, “Set Location” (1.1–1d)

SEQ 4.3: MIDI Filter3

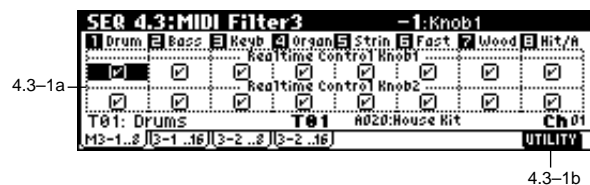
Specifies whether the A- and B-mode operations of REAL-TIME CONTROLS knobs [1]–[4] will be received. MIDI control messages are fixed as the A mode operation of each knob. In B mode the knobs correspond to the messages you assign in the 2.2: Controller Controls page.

4.3–1: M3–1..8 (MIDI Filter3–1 T01...08)

4.3–2: 3–1..16 (MIDI Filter3–1 T09...16)

4.3–3: 3–2..8 (MIDI Filter3–2 T01...08)

4.3–4: 3–2..16 (MIDI Filter3–2 T09...16)



4.3–1(2)a: Real-time Control Knob 1, 2

Knob1 [Off, On]

Specifies whether or not the A mode [1] knob MIDI control change message #74 (this instrument's low pass filter cutoff frequency) and the B mode [1] knob MIDI control change message will be received.

Knob2 [Off, On]

Specifies whether or not the A-mode [2] knob MIDI control change message #71 (this instrument's low pass filter resonance or high pass filter cutoff frequency) and the B mode [2] knob MIDI control change message will be received.

4.3–3(4)a: Real-time Control Knob 3, 4

Knob3 [Off, On]

Specifies whether or not the A mode [3] knob MIDI control change message #79 (this instrument's filter EG intensity) and the B mode [3] knob MIDI control change message will be received.

Knob4 [Off, On]

Specifies whether or not the A mode [4] knob MIDI control change message #72 (the release time of this instrument's filter and amp EG's) and the B mode [4] knob MIDI control change message will be received.

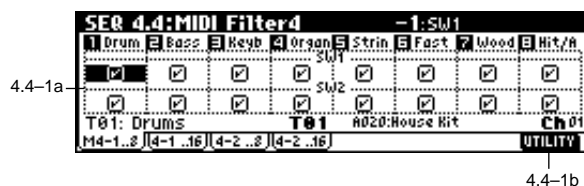
■ 4.3–1(2)b, 4.3–3(4)b: UTILITY

☞ “Memory Status”, “Solo Selected Track”, “Rename Song”, “Delete Song”, “Copy From Song”, “Copy From Combi”, “Load Template Song”, “Save Template Song”, “FF/REW Speed”, “Set Location” (1.1–1d)

SEQ 4.4: MIDI Filter4

4.4–1: M4–1..8 (MIDI Filter4–1 T01...08)

4.4–2: 4–2..16 (MIDI Filter4–1 T09...16)



4.4–1(2)a: SW1, SW2

SW1, SW2 [Off, On]

Specifies whether or not the effect of the [SW1] and [SW2] keys will be received. The function of these keys can be set in SEQ 2.2: Controller page. This is valid when the switches are set to SW1 Mod.:CC#80, SW2 Mod.:CC#81 or Porta.SW:CC#65.

■ 4.4–1(2)b: UTILITY

☞ “Memory Status”, “Solo Selected Track”, “Rename Song”, “Delete Song”, “Copy From Song”, “Copy From Combi”, “Load Template Song”, “Save Template Song”, “FF/REW Speed”, “Set Location” (1.1–1d)

4.4-3: 4-2..8 (MIDI Filter4-2 T01...08)

4.4-4: 4-2..16 (MIDI Filter4-2 T09...16)



4.4-3(4)a: Foot Pedal/Switch, Other Control Change

Foot Pedal/Switch [Off, On]

Specifies whether or not the effect of the ASSIGNABLE PEDAL/SWITCH will be received. The function of this switch is set in GLOBAL 6.1: Controller. This is valid when the switch is set to a MIDI control change.

Other Control Change [Off, On]

Specifies whether or not MIDI controller messages other than those included in MIDI Filter 1-4 will be received.

4.4-3(4)b: UTILITY

Memory Status, Solo Selected Track, Rename Song, Delete Song, Copy From Song, Copy From Combi, Load Template Song, Save Template Song, FF/REW Speed, Set Location (1.1-1d)

SEQ 5.1: RPPR

On this instrument you can use preset patterns P000-149, and user patterns U00-99. One song can contain up to one hundred user patterns. Preset patterns suitable for use in a drum track are provided in memory, and can be selected from any song.

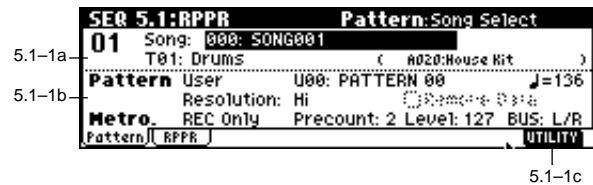
Preset patterns cannot be edited, but you may copy a preset pattern to a user pattern, and edit.

User patterns can be created by real-time recording, step recording, the Get From Track command (obtaining data from a track), or the Copy Pattern command (copying from another pattern) (see BG p.67).

These patterns can be assigned to each key by the RPPR (Real-time Pattern Play/Recording) function and played by pressing a single key, and the resulting performance can be recorded on the sequencer (see 5.1-2: RPPR Setup page).

5.1-1: Pattern

If you wish to record pattern data, use "Pattern" and "Pattern Select" to select a user pattern and pattern number. Next, use the "Pattern Parameter" page menu command to set the number of measures in the pattern and its time signature. Then you can perform real-time recording in the Pattern Edit tab, or step recording by using the "Step Recording (Loop)" page menu command. Finally, use page menu commands as desired to perform event editing or other types of editing.



5.1-1a: Location, Song Select, Track Select

Location

This shows the current location of the selected pattern, in measure units.

Select [000...199: name]

Selects the song that you wish to use. (see 1.1-1b)

Track Select [T01...T16: name]

Selects the track that will record/play the pattern data. (see 1.1-1c)

The program bank, number, and name of the selected track will be displayed at the right.

5-1-1b: Pattern, Metro. (Metronome)

Pattern:

Pattern (Pattern Bank) [Preset, User]

Indicates the type of pattern.
If you select **Preset**, recording will not be possible. You will be able to select and execute the utility menu commands "Copy Pattern," "Bounce Pattern," "Put To Track," and "Copy To Track."

Pattern Select [P00...149, U00..U99]

Indicates the pattern. User patterns can be renamed by the utility menu command "Rename Pattern."

Tempo [040...240, EXT]

Specifies the playback tempo of the pattern. Refer to "Tempo" (1.1-1a).

Resolution [Hi, 3/4 ... 1/2]

Specifies a correction to the timing when real-time recording a pattern. (☞1.1-6a "Reso (Resolution)")

Remove Data [Off, On]

Deletes unwanted musical data while recording a pattern. (☞p.1.1-1a "Remove Data")

Metro. (Metronome):

The metronome parameters you specify here are linked with the 1.1: Play/REC, Preference page Metronome parameters (1.1-6a).

Metronome Sound [REC Only, REC/Play, Off]

Specifies whether the metronome will sound during recording or playback. (☞1.1-6a "Sound (Metronome Sound)")

Precount [0...2]

Specifies the number of measures in the pre-count before recording begins. (☞1.1-6a "Precount")

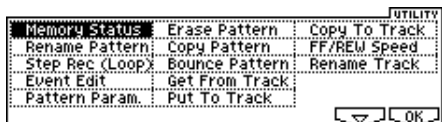
Level [000...127]

Specifies the volume of the metronome. (☞1.1-6a "Level")

BUS (BUS Select) [L/R, L, R, 1, 2, 1/2]

Specifies the output destination of the metronome sound. (☞1.1-6a "BUS")

5.1-1c: UTILITY



☞ "Memory Status," "Rename Track" (1.1-1d)

For details on how to select the desired utility function, refer to "PROG 1.1-1c: UTILITY."

Rename Pattern

Press the [F5] ("Name") key to access the dialog box, and rename the selected pattern. You may input up to sixteen characters. (☞BG p.39)

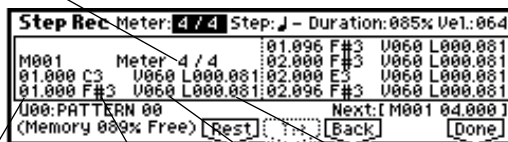
Step Rec (Loop)

Here you can perform step recording into a pattern. This is available when a user pattern is selected.

- ① In "Pattern Bank" and "Pattern Select," specify the pattern. By default, the pattern length is one measure. If you wish to change the number of measures in the pattern, set the Utility "Pattern Param."

- ② Select the "Step Rec (Loop)" to access the dialog box.

Time signature



Location within the measure (beat, clock) Note number Velocity Length (beat, clock)

- ③ The remaining steps are the same as when step recording a track. Refer to steps ③ and following of "Step Recording" (5.2-1b). However, step recording a pattern differs from step recording a track in that when you reach the end of the pattern, you will automatically return to the beginning of the pattern and continue recording, allowing you to add more data.

Event Edit

Here you can edit individual events of the musical data in a pattern that you input.

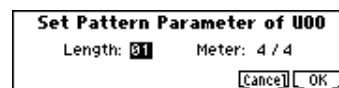
Use "Pattern Bank" and "Pattern Select" to specify the pattern that you wish to edit.

For the remaining steps, refer to "Event Edit" (5.2-1b).

Pattern Param.

This command specifies the number of measures and the time signature of the selected pattern.

- ① Use "Pattern Bank" and "Pattern Select" to specify the pattern.
- ② Select "Pattern Param." to access the dialog box.

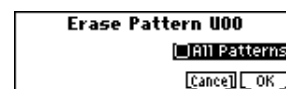


- ③ In "Length," specify the number of measures in the pattern.
- ④ In "Meter," specify the time signature of the pattern.
- ⑤ To execute the Pattern Parameter settings, press the [F8] ("OK") key. To cancel, press the [F7] ("Cancel") key.

Erase Pattern

This command erases the musical data from the selected pattern.

- ① Use "Pattern Bank" and "Pattern Select" to specify the pattern.
- ② Select "Erase Pattern" to access the dialog box.

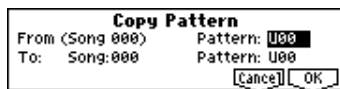


- ③ If you check "All Pattern," all user patterns in the song will be erased.
If "All Patterns" is **not checked**, only the pattern specified in ① will be erased.
- ④ To execute the Erase Pattern command, press the [F8] ("OK") key. To cancel, press the [F7] ("Cancel") key.

Copy Pattern

This command copies the settings and musical data of the selected pattern to another pattern.
User patterns belong to a particular song, but you can use the Copy Pattern command to use a pattern in another song. While preset patterns cannot be edited, you can copy a preset pattern to a user pattern and then edit and save it as a user pattern. Be aware that when you execute the Copy Pattern operation, the pattern settings and musical data of the copy destination will be erased.

- ① Select "Copy Pattern" to access the dialog box.

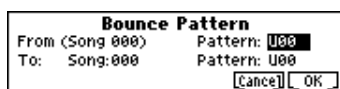


- ② In From: "Pattern," specify the copy source pattern. (By default, this will be the pattern that was selected in the page.)
- ③ In To: "Song" and "Pattern," specify the copy destination song and pattern. For "Pattern," only user patterns U00–U99 can be specified.
- ④ To execute the Copy Pattern command, press the [F8] ("OK") key. To cancel, press the [F7] ("Cancel") key.

Bounce Pattern

This command combines the musical data of the bounce source pattern and bounce destination pattern, and places the combined musical data in the bounce destination. The time signature and length of the pattern following execution will be according to the settings of the bounce destination. If MIDI control data exists in the selected pattern and in the bounce destination pattern, the resulting playback following the bounce operation may produce unexpected results. We recommend that you use "Event Edit" (5.1–1c) to prepare the MIDI control data of the two patterns before executing the Bounce Pattern command.

- ① Use "Pattern Bank" and "Pattern Select" to specify the bounce source pattern.
- ② Select "Bounce Pattern" to access the dialog box.



- ③ In From "Pattern," select the bounce source pattern. (By default, the pattern that are selected in the page will be chosen.)
- ④ In To: "Song" and "Pattern," select the bounce destination song and pattern. For "Pattern," only user patterns U00–U99 can be specified.
- ⑤ To execute the Bounce Pattern command, press the [F8] ("OK") key. To cancel, press the [F7] ("Cancel") key.

Get From Track

This command loads musical data from a track into the specified pattern.

- ① Use "Pattern" and "Pattern Select" to specify the pattern.
- ② In "Pattern Param.," specify the pattern length of the "get" destination.
- ③ Select "Get From Track" to access the dialog box.



- ④ In "From: Song," select the "get" source song.
- ⑤ In "Track," select the "get" source track.
- ⑥ In "Measure," specify the first measure of the "get" source.
- ⑦ To execute the Get From Track command, press the [F8] ("OK") key. To cancel, press the [F7] ("Cancel") key.

Put To Track

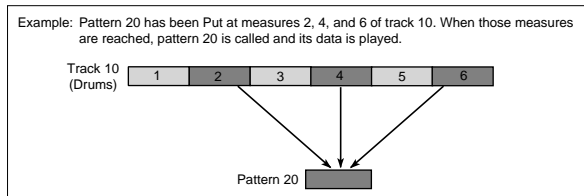
This command places a pattern into a track.
Unlike the Copy to Track command, this command only places the pattern number in the song, so that when playback reaches that point, the pattern will be recalled. The musical data of the pattern will not actually exist in the track.
By creating patterns that contain frequently-used phrases or drum patterns, and then placing them on the tracks, you can conserve memory.
Be aware that when you edit a pattern, all locations in the song where that pattern has been placed will be affected.

When you execute the Put to Track command, the musical data will be affected as follows.

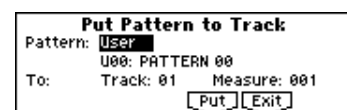
- Musical data previously existing at the "put" destination will be erased.
- The pattern that you "put" will playback according to the time signature that is specified by the measures of the "put" destination.
- Control data such as pitch bend etc. (but not including volume data) previously existing in the track will be reset immediately before the measure at which the pattern was "put."

If you wish to use control data such as pitch bend in the measures in which a pattern is "put," you must first write the control data into the pattern (see BG p.67).

To delete a pattern that has been placed in a track you can use "Erase Measure" (5.2–1b), specifying the area in which the pattern was "put," and setting "Kind" to All.



- ① Select "Put to Track" to access the dialog box

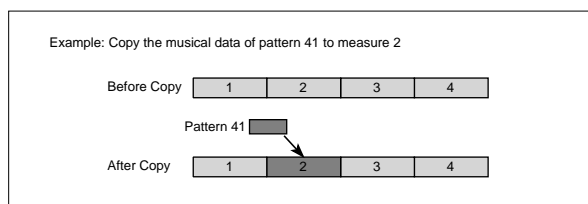


- ② In "Pattern" and "Pattern Select," select the "put" source pattern. (By default, this will be the pattern selected in page)
- ③ In "To: Track," select the "put" destination track.
- ④ In "Measure," specify the first measure of the "put" destination.
- ⑤ To execute the Put to Track command, press the [F8] ("OK") key. When you execute the command, "Measure" will automatically count up. If you wish to, you can continue "putting" the pattern. To exit the command, press the [F7] ("Exit") key.

Copy To Track

This command copies the specified area of musical data from the specified pattern to a track as musical data. Unlike the Put To Track command, this command actually writes the musical data of the pattern into the track, so that you can edit the copied data in the track. Even if you later edit the copy source pattern, the musical data of the song will not be affected. When you execute the Copy to Track command, the musical data will be affected as follows.

- Musical data previously existing in the copy destination measures will be erased.
- The musical data that is copied will playback according to the time signature specified at the beginning of the copy destination measures.



The procedure is the same as for the Put to Track command. (☞ "Put To Track" (5.1-1c).

Rename Track

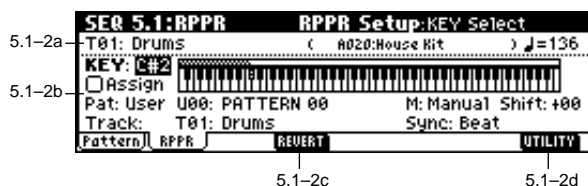
Press the [F5] ("Name") key to access the dialog box and rename the selected song. Up to sixteen characters can be input. (☞ BG p.39)

5.1-2: RPPR Setup

Here you can make settings for the RPPR (Real-time Pattern Play/Recording) function. RPPR lets you assign a pattern from a song to each key, and then playback patterns simply by pressing individual notes on the keyboard. The results can also be recorded.

For each song, you can assign either a preset pattern or a user pattern to each of the seventy two keys in the range C#2-C8. For each key, you can specify the pattern, track number, and how the pattern will be played.

- 🔍 The KARMA function is not operated by patterns played back by RPPR. When RPPR is on, keys for which no pattern is assigned will sound the track selected by "Track Select." RPPR will not be triggered by notes generated by the KARMA function.
- 🔍 When Local Control is OFF ("Local Control On" GLOBAL 2.1-1a), the keyboard will not trigger RPPR pattern playback. Notes received at MIDI IN on the channel of the track currently selected by "Track Select" will trigger patterns. If you have recorded only the trigger notes on an external sequencer and wish to playback the external sequencer to trigger RPPR patterns on this instrument, set Local Control OFF. If you want the note data generated by RPPR to be recorded on the external sequencer, set Local Control ON, and turn off the echo back function of the external sequencer.
- 🔍 In the RPPR Setup page, RPPR is turned on automatically. This will be the same result as when the RPPR check box (1.1-1c) in each page is checked.



5.1-2a: Track Select, J (Tempo)

Track Select [T01...T16: name]

Indicates the track that will trigger RPPR. When note data is received on the MIDI channel of the selected track, the corresponding pattern will play. (☞ 1.1-1c)

The program bank, number, and name of the selected track will be displayed at the right.

J (Tempo) [040...240, EXT]

Specifies the playback tempo for RPPR. Refer to "J (Tempo)" (☞ 1.1-1a).

5.1-2b: RPPR Setup

Keyboard & Assigned drawing

This shows the selected key, and the keys to which a pattern has been assigned by the RPPR function. (Assignments are not possible for the keys displayed in gray.)



KEY (Key Select) [C#2...C8]

Indicates the key that you wish to edit. The following parameters will apply to the key that you select here. This can also be selected by holding down the [ENTER] key and playing a note on the keyboard.

Assign [Off, On]

On (checked): When you play the key specified by "KEY," the pattern selected in "Pat (Pattern Bank)," "Pattern Select" will be triggered.

Off (unchecked): That key will sound the currently selected track at the corresponding pitch, just as in normal Sequencer mode.

Pattern (Pattern Bank) [Pre, User]

Pattern Select [P000...149, U00...99]

Indicates the RPPR pattern for the key selected in "KEY." If the selected user pattern contains no musical data, there will be no sound when you press that key.

Track [T01...T16: name]

Indicates the track that will be used for the RPPR pattern selected for the "KEY." When you play the key, the pattern will be played according to the settings of the track you select here. Track settings are made in 1.1: Play/REC, 4.4: MIDI Filter 4. When you record in real-time with the RPPN function turned on, the data will be recorded on the track you select here. (For the recording procedure, refer to BG p.72)

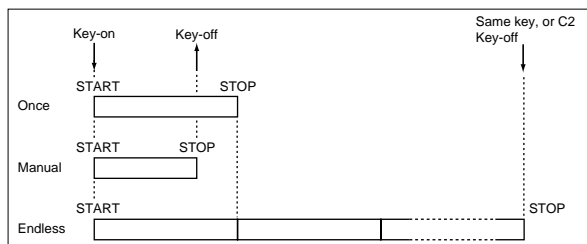
M (Mode) [Once, Manual, Endless]

Specifies how the pattern of the specified "KEY" will be played.

Once: When you press the key, the pattern will playback only once to the end.

Manual: The pattern will continue repeating as long as you continue holding the key, and will stop when you release the key.

Endless: The pattern will continue repeating even after you release the key. To stop the pattern playback, press any note below C2, or press the same key once again.



Shift [-12...+12]

Adjust the playback pitch of the pattern for the specified "KEY" in semitone steps over a range of ± 1 octave. With a setting of 0, the pattern will be played at its original pitch.

Sync [Off, Beat, Measure, SEQ]

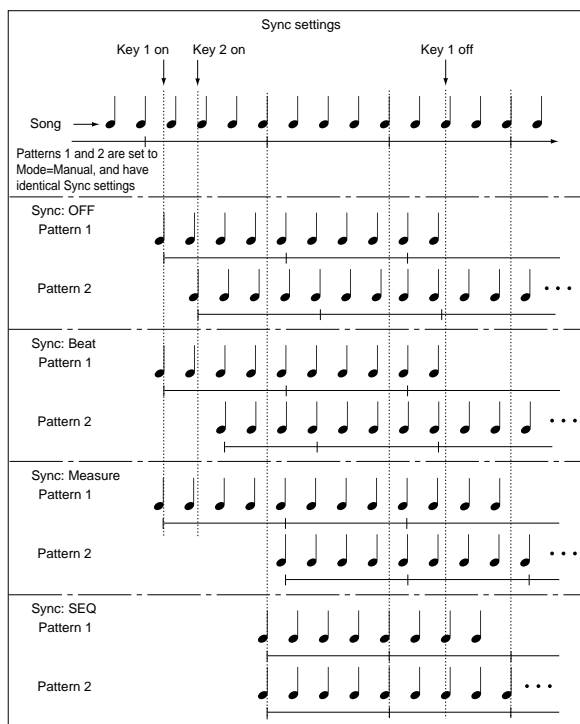
Specifies how the pattern playback will be synchronized when you press the specified "KEY."

Off: The pattern will begin playing at the moment you press the note.

Beat: The pattern will synchronize to the beats of the pattern that was started by the first key (i.e., the first note-on that occurs from a condition where no notes of the keyboard are pressed). This setting is suitable when you wish to play phrase patterns in unison.

Measure: The pattern will synchronize to the measures of the pattern that was started by the first key. This setting is suitable for rhythm, bass or drum patterns.

SEQ: The pattern will synchronize to the measures of the sequencer song.



- When **Beat** or **Measure** are selected, pattern playback will begin when you press the first key. The second and subsequent patterns that are triggered from the keyboard will synchronize to the pattern that was started by the first key; with a setting of **Beat** they will synchronize in steps of a beat, and with a setting of **Measure** they will synchronize in steps of a measure.
- When **SEQ** is selected, the pattern will playback in synchronization with the measures of the sequencer song. The pattern will synchronize with the currently-playing song, so you must start the song before you play notes on the keyboard.
- **Beat**, **Measure**, and **SEQ** will cause the pattern to start immediately if you play the key within a thirty-second note of the timing of the respective beat or measure, but if you play the key later than this, the start of the pattern will be delayed by a beat.

Stopping playback of a RPPR pattern

By pressing C2 or any lower note, all the patterns being played by RPPR will stop.

The patterns of keys whose "Sync" setting is **Off** will stop immediately, but the playback of other keys will stop at the beginning of the next beat or measure. Pattern playback of keys whose "Sync" setting is other than **Off** can be stopped immediately by rapidly pressing C2 or any lower note twice in succession.

■ 5.1–2c: REVERT

Revert

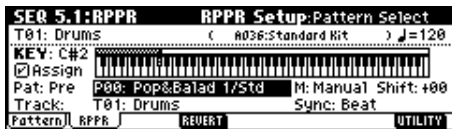
This copies “Pat (Pattern Bank),” “Pattern Select” and “Track” settings from the previously-edited “KEY” whose “Assign” is **checked** to the currently-edited “KEY.”

Example)

Using RPPR to assign preset patterns P00, P01, and P02 to keys

Before you begin, assign a drum program such as A036 to track 1.

- ① Select C#2 as the “KEY.” Check “Assign,” and set “Pat (Pattern Bank),” “Pattern Select,” and “Track.”



- ② Select D2 as the “KEY.”
- ③ Press the [F4] (“Revert”) key, and the “Pat (Pattern Bank),” “Pattern Select” (Pat: Pre, P00: Pop&Balad 1/Std) and “Track” (T01: Drums) that you selected in step ① will be copied automatically.
- ④ Change only the “Pattern Select.” Select “Pattern Select,” and press the [INC] key to select P01: Pop&Balad 2/Std.
- ⑤ Select D#2 as the “KEY.”
- ⑥ Press the [F4] (“Revert”) key, and the “Pat (Pattern Bank),” “Pattern Select” (Pat: Pre, P01: Pop&Balad 2/Std) and “Track” (T01: Drums) that you selected in step ④ will be copied automatically.
- ⑦ As you did in step ④, set “Pattern Select” to P02: Pop&Balad 3/Std.

In this way you can use the “Revert” to efficiently assign “Pat (Pattern Bank),” “Pattern Select” and “Track” to each “KEY” of an RPPR Setup. This function is particularly convenient when the patterns you are assigning to each key are numbered consecutively or close to each other, and are used in the same track, as in the example shown above.

■ 5.1–2d: UTILITY

☞ “Memory Status” (1.1–1d), “Rename Track” (5.1–1c)

SEQ 5.2: Track Edit

5.2–1: Track Edit

Here you can edit the settings of the currently selected track and the musical data that has already been recorded, as well as perform step recording.

When you wish to edit musical data or perform step recording, first use the tab page window to select the track and specify the desired area. Then select the appropriate utility menu command.



5.2–1a

5.2–1b

5.2–1a: Track Select, Measure (From)/Meas. (To End of)

Track Select [T01...T16, Master Trk]

Use the cursor keys [▲][▼] to select the track in which you wish to record or edit (or use as the copy source).

If you wish to select all tracks, you do not need to select T01...T16. Simply check “All Tracks” in the dialog box of the utility menu command.

Master Trk: You can edit the tempo and time signature of the master track.

Measure (From) [001...999]

Specify the first measure that will be edited (or used as the copy source) or step-recorded.

Meas. (To End of) [001...999]

Specify the last measure that will be edited (or used as the copy source).

■ 5.2–1b: UTILITY



☞ “Memory Status” (1.1–1d), “Rename Track” (5.1–1c)

Step Recording

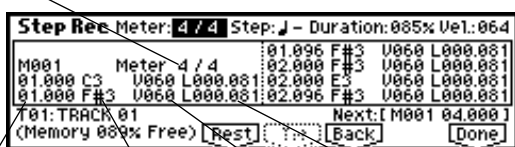
Step recording allows you to specify the length and velocity of each note numerically, and to input the pitches from the keyboard. You can use the [F4] (“Rest”) key and [F5] (“Tie”) key to input a rest or tie.

⚠ Be aware that if you step-record onto a track which already contains sequence data, all data will be erased from the measure specified in “Measure (From)” and all subsequent measures.

It is best to use the "Create/Ers. Ctrl" Create mode to input data whose data whose value changes continuously, such as pitch bend, and to use "Event Edit" to input individual data items such as program changes.

- Use "Track Select" to select the track into which you wish to input data, and use Track Edit tab item "Measure (From)" to specify the measure at which you wish to begin input.
- When you select "Step Recording", the following dialog box will appear.

Time signature



Location within the measure (beat, clock) Note number Velocity Length (beat, clock)

- In "Meter," set the time signature. This will show the time signature that has already been set for the measure. If you change the time signature setting, the time signature data of the measures you record will change, and all tracks will change to the time signature you specified.
- In "Step (Step Time)," specify the length of the basic step that you wish to input, in terms of a note value. The number of clocks in each note value is shown below.

(0:24)	(0:48)	(0:96)	(1:00)	(2:00)	(4:00)
(0:36)	(0:72)	(0:144)	(1:96)	(3:00)	(6:00)
(0:16)	(0:32)	(0:64)	(0:128)	(1:64)	(2:128)

- In "Duration," specify the length that the note will actually be held, relative to the "Step (Step Time)." In general, 100% will be tenuto, 85% will be normal, and 50% will be staccato.
- Use "Vel (Velocity)" to specify the velocity value (keyboard playing strength) of the note data. With the [PAUSE] key pressed, you can hold down the [ENTER] key and play a note on the keyboard to specify the velocity value. If you set this to Key, the actual velocity at which you played the key will be input.
- Note events can be input as described below, using commands from the keyboard and function keys.

• Inputting notes

When you press a key on the keyboard, that note number will be input as a note of the length specified in ④. When you press a chord on the keyboard, those note numbers will be input as chords of the length specified in ④. Since each of the note numbers you press before releasing all of the keys will be input at the same location, the notes will be input as a chord even if they are actually played at different times. Each time you press and release the keyboard, the location will advance by the length specified in ④.

• Inputting rests

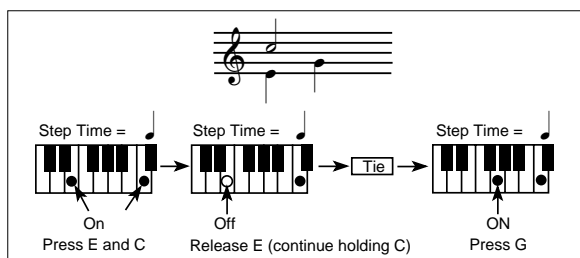
Press the [F4] ("Rest") key to input a rest of the length specified in ④.

• Inputting a tie

If you press the [F5] ("Tie") key without pressing the keyboard, the previously-input note will be tied, and lengthened by the amount specified in ④.

If you press the [F5] ("Tie") key while holding down a note, the note you are playing will be tied, and lengthened by the amount specified in ④.

You can even input notes as shown in the following diagram.



• Deleting a note or rest

To delete a note or rest, press the [F6] ("Back") key. The location will move backward by the amount specified in ④, and the data in that interval will be deleted.

• Auditioning the next note before input

If you wish to make sure of the next note before you actually input it, press the [PAUSE] key (the LED will light). Now when you press a key, you will hear sound but the note will not be input. Press the [PAUSE] key once again (the LED will go dark) to cancel the pause mode and resume input.

- When you are finished with step recording, press the [F8] ("Done") key. If you press the [COMPARE] key, you will return to the condition of before you began step recording.

Event Edit

Here you can edit individual events of music data that were input.

- Use "Track Select" to select the track that you wish to edit, and use the Track Edit tab "Measure (From)" field to specify the measure at which you wish to begin editing.
- If you selected **Track01-16** in "Track Select," selecting this command will open the **Set Event Filters** dialog box.

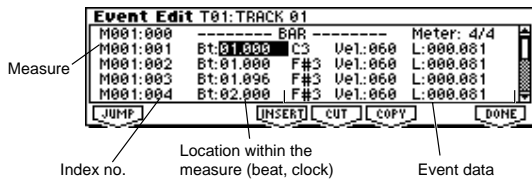


In the Set Event Filters dialog box you can select the types of events (musical data) that will appear and can be edited in the event edit window.

For "Note" you can set "Btm (Bottom)" and "Top" to specify the range of notes. These settings can also be entered by holding down the [ENTER] key and pressing a key. Normally you will leave these set at C-1 and G9. "Control Change" lets you specify the control change number. Normally you will leave this set at ALL. If you selected **Master Track** in "Track Select," this dialog box will not appear.

You can also check various other events ("Pitch Bend," "Program Change," "After Touch," and "Poly After Touch").

- ③ Press the [F8] (“OK”) key to open the Event Edit dialog box.



- ④ Use the cursor keys [▲], [◀], [▼], [▶] to select the event that you wish to edit. You can also press the [F1] (“JUMP”) key and use “M (Measure)” and “Index” so that the events of the measure being edited and the index number within that measure are displayed at the beginning of the dialog box.
- ⑤ Select the event that you wish to edit, and use the [VALUE] dial etc. to modify its value(s).
- By modifying the value of the “Bt” (Beat. Tick) location within the measure, you can move the event within the measure.
 - You can edit each event by modifying its data value(s). When you select a note event, it will sound.
- ⑥ You can press the keys located at the function of the dialog box to edit events as follows.
- **Inserting an event**
Select the location “Bt” at which you wish to insert an event, and press the [F4] (“Insert”) key to insert an event.
 - **Deleting an event**
Select the event that you wish to delete, and press the [F5] (“Cut”) key to delete the event.
 - **Moving an event**
You can use the [F5] (“Cut”) key and [F4] (“Insert”) key to move an event (by “cut and paste”). Use the [F5] (“Cut”) key to delete the event that you wish to move, then use the [F4] (“Insert”) key to insert it at the desired location. You can also move an event by modifying its “Bt” value.
 - **Copying an event**
Select the event that you wish to copy, and press the [F6] (“Copy”) key. Then select the copy destination and press the [F4] (“Insert”) key to insert the event at that location.
- ⑦ The end of the pattern is indicated as **End of Pattern**. When you are finished event editing, press the [F8] (“OK”) key. If you press the [COMPARE] key, you will return to the state before you began event editing.

The following table shows the types of musical data that can be edited by “Event Edit” and the range of their values.

BAR (displayed only) (Measure line)	Meter: 1/4...16/16 *1 (Time signature)
C-1...G9 *2 (Note data)	V: 1...127 *2 (Velocity) L: 000.000...15984.000 (Length: beats, clocks)
PAFT (Polyphonic after touch)	C-1...G9 (Note number) 0...127 (Value)
CTRL (Control change)	C: 0...101 (Control change number) 0...127 (Value)
PROG (Program change)	Bank: A...F, 000...127, G, g(1)..g(9) g(d), --- (Program bank) P: 0...127, 1...128 (G, g(1)..g(d)) (Program number)
AFTT (After Touch)	0...127 (value)
BEND (Pitch bend)	-8192...+8191 (value)

*1 Be aware that since the time signature is recorded in the master track, modifying it from any track will affect the same measure of all tracks, causing them to be played in that time signature.

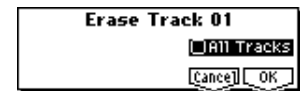
*2 Note data and velocity values can also be entered by holding down the [ENTER] key and playing a note on the keyboard.

Pattern numbers will be displayed in locations in which a pattern has been “put” (placed). At the end of the track there will be an indication of End of Track.

Erase Track

This command erases the data from the specified track. However, it is not possible to erase the master track by itself.

- ① In “Track Select,” select the track that you wish to erase.
- ② Select this command to open the following dialog box.



If you check “All Tracks,” the musical data of all tracks will be erased.

- ③ To execute the Erase Track command, press the [F8] (“OK”) key. To cancel, press the [F7] (“Cancel”) key.

Copy/Bounc. Trk (Copy/Bounce Track)

Copy Track

Copies the musical data of the copy source track to the specified track. Be aware that when you execute Copy Track, the data that previously existed in the copy destination track will be erased.

Bounce Track

Combines the musical data of the bounce source and bounce destination, and move this data into the bounce destination. All musical data that had been in the bounce source will be erased.

If the bounce source track and bounce destination track contain MIDI control data, this operation may produce unexpected results. If this happens, use the Erase mode of the “Event Edit” or “Create/Ers. Ctrl” utilities to edit the MIDI control data of the two tracks beforehand.

- 1 Select "Copy/Bounc. Trk" to access the dialog box.

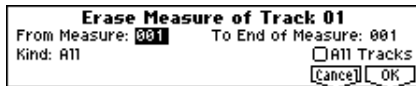


- 2 Set "Mode" to either Copy or Bounce.
- 3 Set "From" to the copy source (bounce source) track, and set "To" to the copy destination (bounce destination). (By default, "From" will be initially set to the "Track Select" track.)
- 4 To execute, press the [F8] ("OK") key. To cancel without executing, press the [F7] ("Cancel") key.

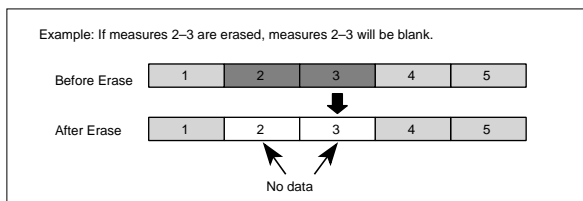
Erase Measure

This command erases the specified type(s) of musical data from the specified range of measures. The Erase Measure command can also be used to delete only a specific type of data. Unlike the Delete Measure command, executing the Erase Measure command does not cause the subsequent measures of musical data to be moved forward.

- 1 Use "Track Select" to select a track.
- 2 Select "Erase Measure" to access the dialog box.



- 3 In "From Measure" select the first measure to be erased, and in "To End of Measure" select the last measure to be erased. (By default, "From Measure" and "To End of Measure" will be set to the range that you specified in the Track Edit page.)
- 4 In "Kind," specify the type of data that will be erased. **All** will erase all types of data from the track, **Note** will erase note data, **Ctrl.C** will erase control change data, **AffT** will erase both channel pressure and polyphonic key pressure data, **BEND** will erase pitch bend data, and **PROG** will erase program change data.
- 5 If you **check** "All Tracks," the specified type of data will be erased from all tracks.
- 6 To execute the Erase Measure command, press the [F8] ("OK") key. To cancel, press the [F7] ("Cancel") key.



- ⚠ If control data extends across a line between measures that were erased and measures that were not erased, only the data within the range being erased will be erased. However if note data extends across two or more measures, deleting any of the intervening measures will delete that note data from the following measures as well.

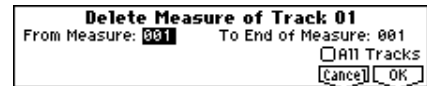
note Note data can also be erased using "Shift/Er. Note". Use this command when you wish to erase a specific range of notes, or to erase notes from a specific "Beat.Tick."

note You can also erase control changes by using the Erase mode of "Creat/Ers. Ctrl." Use this when you wish to specify the type of control change to be deleted, or to use "Beat.Tick" units to specify the range from which the data will be deleted.

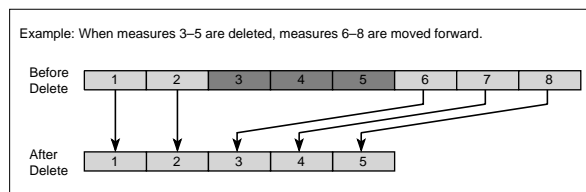
Delete Measure

This command deletes the specified measures. When the Delete Measure command is executed, the musical data following the deleted measures will be moved forward in units of a measure.

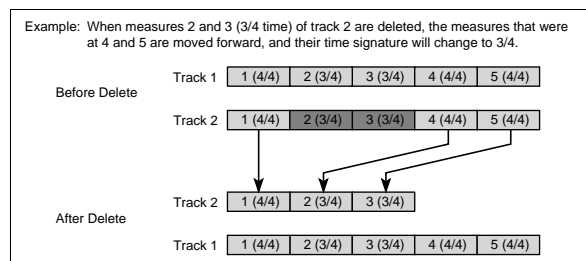
- 1 Use "Track Select" to select the track.
- 2 Select "Delete Measure" to access the dialog box.



- 3 In "From Measure" select the first measure that you wish to delete, and in "To End of Measure" select the last measure that you wish to delete. (By default, "From Measure" and "To End of Measure" will be the range that you specified in the Track Edit page.)
- 4 If you wish to delete musical data from all tracks including the master track, **check** "All Tracks." If this is **not checked**, data will be deleted only from the track that was selected by "Track Select."
- 5 To execute the Delete Measure command, press the [F8] ("OK") key. To cancel, press the [F7] ("Cancel") key.



- ⚠ If in ④ you uncheck "All Tracks" and execute this operation, the measures will not be deleted from the master track. Time signature and tempo data will remain unchanged, and the time signature and tempo of the measures that were moved forward as a result of the Delete operation will change.



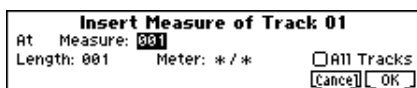
- ⚠ If in ④ you check "All Tracks" and execute this operation, the specified measures of musical data will be deleted from all tracks including the master track, and the time signature and tempo will also move forward by the number of measures that were deleted. If control data extends across a line between measures that were deleted and measures that were not deleted, only the data within the range being deleted will be erased. However if note data extends across two or more measures, deleting any of the intervening measures will delete that note data from the following measures as well.

Insert Measure

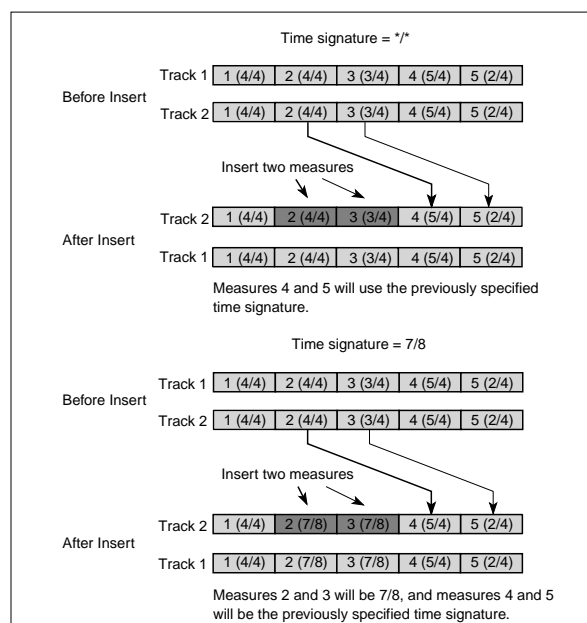
This command inserts the specified number of measures into the specified track. When you execute the Insert Measure command, the musical data following the insert location will be moved backward.

If musical data is inserted into an area across which note data has been tied, a note-off will be created immediately before the inserted measure, and the subsequent portion of the note will be deleted.

- ① In "Track Select," specify the track into which you wish to insert.
- ② Select "Insert Measure" to access the dialog box.



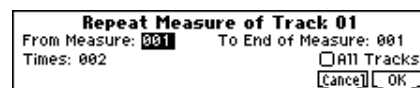
- ③ In "At Measure," specify the measure location at which the data will be inserted. (The measure you specified in Track Edit page "Measure (From)" will be set as a default.)
- ④ In "Length," specify the number of measures that will be inserted.
- ⑤ In "Meter," specify the time signature of the measures that will be inserted.
If you want the inserted measures to match the existing time signature, specify */*. With any setting other than */*, the time signature of the inserted measures will change, and the specified time signature will apply to all tracks for those measures.
- ⑥ If you wish to insert measures into all tracks including the master track, **check** "All Tracks." The musical data following the inserted measures will playback in the same way it did before the measures were inserted. If "All Tracks" is **unchecked**, the measures will be inserted into the specified track. At this time, the musical data following the inserted location will be moved backward by the number of measures that were inserted. However, the time signature and tempo will not move.
- ⑦ To execute the Insert Measure command, press the [F8] ("OK") key. To cancel, press the [F7] ("Cancel") key.



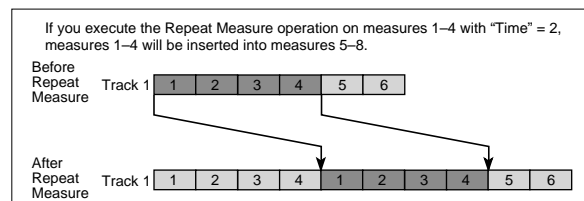
Repeat Measure

This command repeatedly inserts the specified measures for the specified number of times. When you execute the Repeat Measure command, the measures will be inserted following the measure specified by "To End of Measure," and musical data following the inserted data will be moved backward.

- ① Use "Track Select" to select the track whose measures you wish to repeat.
- ② Select "Repeat Measure" to access the dialog box.



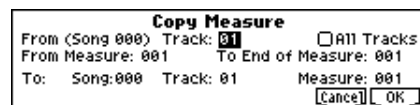
- ③ In "From Measure" and "To End of Measure," specify the range of measures that will be repeated. (By default, "From Measure" and "To End of Measure" will be set to the range you specified in the Track Edit page.)
- ④ In "Times," specify the number of repetitions. For example if you set "From Measure" to 001, "To End of Measure" to 004, and "Times" to 2, the musical data of measures 1-4 will be inserted into measures 5-8. The result will be that measures 1-4 will be played twice.
- ⑤ If you wish to repeat the musical data of all tracks including the master track, **check** "All Tracks."
- ⑥ To execute the Repeat Measure command, press the [F8] ("OK") key. To cancel, press the [F7] ("Cancel") key.



Copy Measure

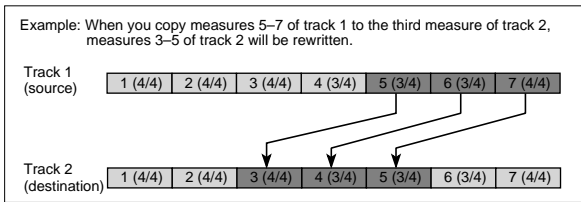
This command copies measures of musical data from the copy source to the specified measure location. When you execute the Copy Measure command, the track data at the copy destination will be rewritten.

- ① Select the copy source song.
- ② Select "Copy Measure" to access the dialog box.



- ③ In "From: Track," select the copy source track. (By default, this will be the track you selected in "Track Select.")
If you **check** "All Tracks," the musical data of all tracks including the master track will be copied.
- ④ In "From Measure" and "To End of Measure," specify the range of copy source measures. (By default, "From Measure" and "To End of Measure" will be the range that you specified in the Track Edit page.)

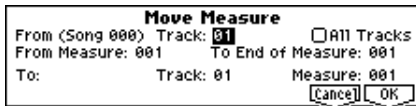
- ⑤ In "To: Song," specify the copy destination song. In "Track" (when "All Tracks" is **unchecked**) specify the copy destination track. In "Measure," specify the first measure where the copied measures will be inserted.
- ⑥ To execute the Copy Measure operation, press the [F8] ("OK") key. To cancel, press the [F7] ("Cancel") key.



Move Measure

This command moves measures of musical data to a specified destination. When you execute the Move Measure command, musical data following the move source will be moved forward according to the number of measures moved, and musical data following the move destination will be moved backward correspondingly.

- ① Select "Move Measure" to access the dialog box.



- ② In "From: Track," select the move source track. (By default, this will be the track you selected in "Track Select.")
If you **check** "All Tracks," musical data of all tracks including the master track will be moved.
- ③ In "From Measure" and "To End of Measure," specify the range of measures that will be moved. (By default, "From Measure" and "To End of Measure" will be the range that you specified in the Track Edit page.)
- ④ In "To: Track" (if "All Tracks" is **unchecked**), specify the move destination track. In "Measure," specify the first measure of the move destination.
- ⑤ To execute the Move Measure command, press the [F8] ("OK") key. To cancel, press the [F7] ("Cancel") key.

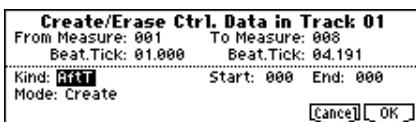
Create/Ers. Ctrl (Create/Erase Control Data)

This command inserts (creates) or erases data such as control changes, aftertouch, pitch bend, or tempo in the specified region.

Create Ctrl (Create Control Data)

Here's how you can insert (create) various types of data in the region you specify.

- ① In "Track Select," specify the track in which you wish to create control data. If you wish to create tempo data, set this to the **Master Track**. In this case, "Kind" in step ⑤ will be **Tempo**.
- ② Select "Create/Ers. Ctrl" to access the dialog box.



- ③ Specify the region in which the control data will be inserted. Use "From Measure" to specify the measures, and "Beat. Tick" to specify the beat and clock. (By default, "From Measure" and "To Measure" will be set to the region you specified in the Track Edit page.)

- ④ Set "Mode" to **Create**.

- ⑤ "Kind" to the type of musical data (event) that you wish to create.

Ctrl.C: Control change data will be inserted. In this case, use "#" to specify the control change number.

AftT: Aftertouch data will be inserted.

BEND: Pitch bend data will be inserted.

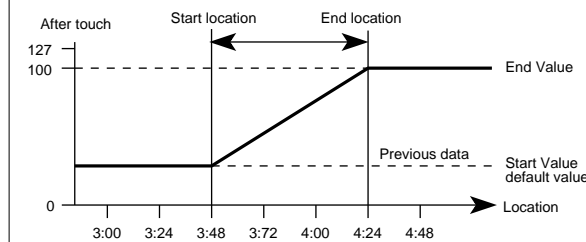
- ⑥ Specify the start location value and end location value of the data that will be inserted.

"Start" specifies the value at the start location, and "End" specifies the value at the end location.

By default, the value at the start location will be set for "Start." If you want to create control data that changes smoothly from the value at the start location, you should leave the start location value unchanged, and set only the end location value.

- ⑦ To execute the Create Control Data command, press the [F8] ("OK") key. To cancel without executing, press the [F7] ("Cancel") key.

Example: The controller is aftertouch. Starting location is 3:48, ending location is 4:24, and end value is set to 100. This will cause the aftertouch value to begin changing from 3:48, and reach a value of 100 at 4:24.

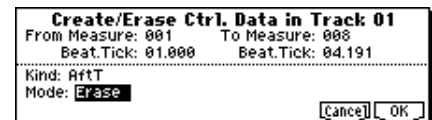


Executing the Create Control Data command will use up a substantial amount of sequencer memory. This means that if there is only a small amount of free memory remaining, it may not be possible to create the data. If this occurs, you should first use "Quantize" to quantize the data, deleting unneeded control data. Alternatively, you can apply the Quantize function to the data that was inserted by Create Control Data.

Ers. Ctrl Data (Erase Control Data)

Here's how you can erase various types of data from the region you specify.

- ① In "Track Select," specify the track from which you wish to erase control data. If you wish to erase tempo data, set this to the **Master Track**. In this case, "Kind" in step ⑤ will be **Tempo**.
- ② Select "Create/Ers. Ctrl" to access the dialog box.



- ③ Specify the region from which the control data will be erased. Use "From Measure" to "To Measure" to specify the measures, and "Beat.Tick" to specify the beat and clock. (By default, "From Measure" and "To Measure" will be set to the region you specified in the Track Edit page.)

- ④ Set "Mode" to **Erase**.

- ⑤ "Kind" to the type of musical data (event) that you wish to erase.

Ctrl.C: Control change data will be erased. In this case, use "#" to specify the control change number.

AftT: Aftertouch data will be erased.

BEND: Pitch bend data will be erased.

- ⑥ To execute the Erase Control Data operation, press the [F8] ("OK") key. To cancel without executing, press the [F7] ("Cancel") key.

note If you wish to erase all control changes from a certain range of measures, it is also possible to do this by using "Erase Measure" and selecting **Ctrl.C** as the data to be erased. However if you use the Erase Control Data described above, you can specify the range using "Beat.Tick," and erase only specific control change data.

Quantize

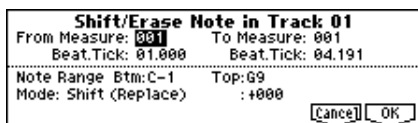
This command corrects the timing of musical data that has already been input.

When you execute the Quantize operation, the musical data will be affected as follows.

- When you execute Quantize on note data, the timing of the note-on will be corrected, but the length (duration of the note) will not be affected.
- If the Quantize resolution is set to **Hi**, the timing will be adjusted to units of the base resolution ($\text{♩}/192$), so note data will not be affected. However, continuous controller data such as joystick or after touch which occupies a large amount of memory will be processed so that two or more data events of an identical type existing at a single interval of the timing resolution will be combined into a single event, thus conserving memory.

Similarly, two or more data events of an identical type existing at the identical timing will be combined into one, also conserving memory.

- ① In "Track Select," specify the track.
- ② Select "Quantize" to access the dialog box.



- ③ Specify the range that will be quantized. In "From Measure" and "To Measure," specify the measures. In "Beat.Tick" specify the beat and clock. (By default, "From Measure" and "To End of Measure" will be the range that you specified in the Track Edit page.)

- ④ Use "Kind" to select the type of musical data (events) that will be quantized.

All: All musical data will be quantized.

Note: Note data will be quantized. Use the "Range" parameters "Btm (Bottom)" and "Top" to specify the range of notes. This is useful when you wish to quantize only specific notes (for example, just the snare sound of the drum track). "Btm (Bottom)" sets the lower limit of the notes. If you wish to quantize all notes, set this to **C-1**. "Top" sets the upper limit of the notes. If you wish to quantize all notes, set this to **G9**. The note can also be set by holding down the [Enter] key and playing a key.

Ctrl.C: Control changes will be quantized. To limit the type of control changes, use "#" to specify the number. **AftT:** Both channel pressure and poly key pressure data will be quantized.

BEND: Pitch bend data will be quantized.

PROG: Program change data will be quantized.

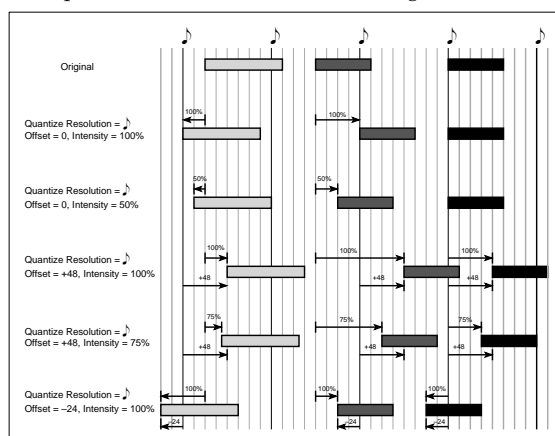
- ⑤ In "Resolution," specify the timing resolution to which the data will be corrected.

By setting a lower resolution you can save more memory, but the timing of the playback may not be acceptable.

- ⑥ In "Offset," specify the number of clock by which the data will be moved forward or backward relative to the standard timing. A setting of **96** will be ♩ , and **48** will be ♩ . Positive (+) settings will adjust the data forward, and negative (-) settings will adjust the data backward. This allows you to simulate "pushing" or "dragging" the beat.

- ⑦ In "Intensity," specify the degree of sensitivity to which the timing will be corrected; i.e., how close to the locations specified by ⑤ and ⑥ the data will be moved. With a setting of **0**, no correction will take place. With a setting of **100**, the data will be moved all the way to the timing intervals specified by ⑤ and ⑥.

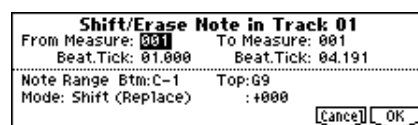
- ⑧ To execute the Quantize command, press the [F8] ("OK") key. To cancel, press the [F7] ("Cancel") key. By varying the Offset and Intensity settings you can create quantize effects such as the following.



Shift/Er. Note (Shift/Erase Note)

This command shifts (moves) or erases the specified note numbers in a specified track and range of measures.

- ① In "Track Select," select the track on which you wish to execute the Shift/Erase Note command.
- ② Select "Shift/Ers. Note" to access the dialog box.



- ③ Specify the range in which you wish to shift or erase note numbers. In "From Measure" and "To Measure," specify the measures. In "Beat.Tick," specify the beat and clock. (By default, "From Measure" and "To Measure" will be the range that you specified in the Track Edit page.)

- Specify the range of notes that you wish to shift or erase. "Note Range: Btm (Bottom)" specifies the lower limit, and "Top" specifies the upper limit. If you wish to edit all notes, set "Btm (Bottom)" to C-1 and "Top" to G9. These settings can also be made by holding down the [ENTER] key as you play a note.

To shift notes

- For "Mode," select "Shift (Replace)" or "Shift (Create)," and use the parameter at the right to specify the amount by which the notes will be shifted. The amount of shift can be adjusted in semitone steps, over a range of -127 to +127. +1 raises the note by a semitone.
- Use either "Shift (Replace)" to move the note numbers, or "Shift (Create)" to add new note numbers. For example if you have specified a drum program for the track, you can use "Replace" to change the snare sound into a different snare sound, or use "Create" to layer a sound effect on the snare sound. Or you could use this on a guitar phrase to add a lower octave to the notes.
- To execute the Shift Note command, press the [F8] ("OK") key. To cancel without executing, press the [F7] ("Cancel") key.

To erase notes

- For "Mode," select **Erase**. If you wish to erase all note data from a certain range of measures, this can also be done by using "Erase Measure" and specifying **Note**. However if you use the operation described here, you will be able to use "Beat Tick" to specify the range, and erase only the specific notes you wish.
- To execute the Erase Note command, press the [F8] ("OK") key. To cancel without executing, press the [F7] ("Cancel") key.

Modify Velocity

This command modifies the velocity values of notes in the specified area so that they will change over time according to a selected curve.

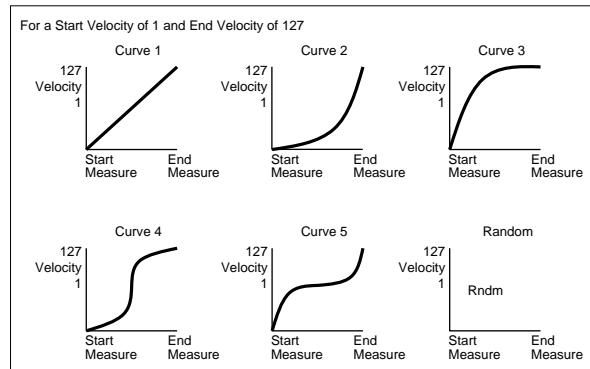
- In "Track Select," specify the track whose velocity will be modified.
- Select "Modify Velocity" to access the dialog box.

Modify Velocity in Track 01			
From Measure: 001	To Measure: 004		
Beat Tick: 01.000	Beat Tick: 04.191		
Note Range Btm: C-1	Top: G9		
Velocity Start: 001	End: 127		
Intensity: 100%	Curve: 1		
			[Cancel] [OK]

- Specify the range in which note velocity will be modified. "From Measure" and "To Measure" specify the measure, and "Beat Tick" specify the beat and clock. (By default, "From Measure" and "To Measure" will be set to the range that you specified in the Track Edit page.)
- Specify the range of notes that will be affected by the Modify Velocity command. Note Range "Btm (Bottom)" is the lower limit, and "Top" is the upper limit. If you wish to edit all notes, set "Btm (Bottom)" to C-1 and "Top" to G9. These settings can also be made by holding down the [ENTER] key as you play a note on the keyboard.

- In "Velocity Start" specify the value at which the velocity data will start, and in "Velocity End" specify the final velocity value. These settings can also be made by holding down the [ENTER] key as you play a note on the keyboard.
- In "Intensity," specify the degree to which the velocity data will be adjusted toward the curve you specify in ⑦. With a setting of 0 [%], the velocity will not change. With a setting of 100 [%], the velocity will be exactly as described by the curve.
- "Curve"* lets you select from six types of curve to specify how the velocity will change over time.
- To execute the Modify Velocity operation, press the [F8] ("OK") key. To cancel, press the [F7] ("Cancel") key.

* The six curves are as follows.



Set Song Length

This command changes the length of the specified song. When it is executed, the length of the master track will change, and the number of measures played will change.

- Select "Set Song Length" to access the dialog box.

Set Song Length	
Length: 064	[Cancel] [OK]

- In "Length," specify the length of the song.
- To execute the Set Song Length command, press the [F8] ("OK") key. To cancel without executing, press the [F7] ("Cancel") key.


⚠ Be aware that if you shorten the song, data will also be deleted from the tracks other than the master track.

SEQ 6.1: KARMA

Here you can make settings for the KARMA functions used in Sequencer mode. A Sequencer mode song can use four KARMA modules (modules [A], [B], [C], and [D]).

In Sequencer mode, you can use the KARMA function on song tracks or for pattern real-time recording. The note-on/off and MIDI control data generated by the KARMA modules can be recorded as events on a track or pattern. At this time, you can use the KARMA Real-time Controls knobs [1]–[8] or switches [1]/[2] to control the phrase or pattern in real-time while you record.


When playing back a song or pattern, you can use the KARMA function in real-time on your keyboard playing, or in conjunction with real-time performance using the RPPR function.

 The data from the internal sequencer is not input to the KARMA modules. Note data from the internal sequencer cannot be used as triggers to cause the KARMA function to generate phrases.

The KARMA function can be switched by the KARMA Real-time Controls [ON/OFF] key. The state of the KARMA Real-time Controls [LATCH] and [SCENE] keys, [SW1] and [SW2] switches, [1]–[8] knobs, and the note settings/velocity of the CHORD TRIGGER [1]–[4] keys can be saved for each song.

By using the utility menu command “Copy KARMA Module,” you can easily copy the KARMA module settings of a program or combination. Use this when you wish to use Sequencer mode to record the KARMA phrase or pattern of Program mode.

By using the utility menu command “Copy From Combi,” you can copy the entire settings of a combination, and real-time record a performance that uses the KARMA function (Multi REC).

 The tempo of the song and the KARMA function cannot be set independently.

If “MIDI Clock” (GLOBAL 2.1–1a) is set to **Internal**, you can use the start timing of the internal sequencer to synchronize the KARMA module.

- If you press the [START/STOP] key while the KARMA function is operating, the KARMA function will synchronize to the timing of the sequencer.
- If you then press the [START/STOP] key again, the KARMA function will stop playing, as will the sequencer. If you wish to stop only the KARMA function, press the (KARMA) [ON/OFF] key.

MIDI When “MIDI Clock” (GLOBAL 2.1–1a) is set to **External**, you can use the MIDI real-time Clock command from a connected external MIDI device to perform the same control. (About synchronizing the KARMA function, BG p.88)

6.1–1: Setup

The GE can be selected independently for each KARMA module. In Sequencer mode, you can use four KARMA modules (modules [A], [B], [C] and [D])



6.1–1a: GE Category, GE Select

GE Category [00: name...]

This displays the category of the GE that is selected for each KARMA module.

 p.5 PROG 1.1–3a: KARMA GE Setup, “GE Category”

GE Select [0000: Arp Model 1 Up/Dn...]

Select the GE.

 p.5 PROG 1.1–3a: KARMA GE Setup, “GE Select”

6.1–1b: GE Name, Run Check Box, Solo Check Box

GE Name


This displays the name of the GE selected in “GE Select.”


Run Check Box [Off, On]

The KARMA module(s) that are **On (checked)** will operate.

Solo Check Box [Off, On]

Check this when you wish to verify the operation of a specific KARMA module when the KARMA function is running.

 p.47 COMBI 1.1–4b: Setup, Solo Check Box

 This will be cleared if you change the song or temporarily exit the mode. It will not be memorized even if you save.

6.1–1c: Selected GE Information, Init K.RTC

This displays information on the KARMA module ([A], [B], [C], [D]) that is currently selected for editing.

GE No., GE Name


 p.47 COMBI 1.1–4c: Setup, “GE No., GE Name”

MIDI In/Out Ch

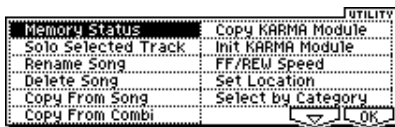
 p.47 COMBI 1.1–4c: Setup, “MIDI In/Out Ch”

These settings are made in SEQ 6.1–2: MIDI I/O, “Input Channel” and “Output Channel” (6.1–2a).

Init K.RTC (KARMA Real-time Controls–Use GE’s Value) [Off, On]

 p.47 COMBI 1.1–4c: Setup, “Init K.RTC”

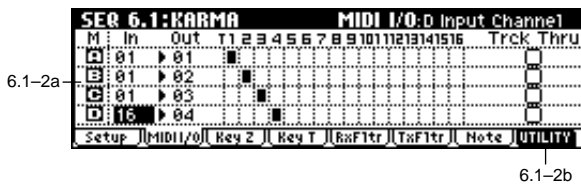
6.1-1d: UTILITY



- ☞ “Memory Status,” “Solo Selected Track,” “Rename Song,” “Delete Song,” “Copy From Song,” “Copy From Combi,” “FF/REW Speed,” “Set Location,” (1.1-1d) “Copy KARMA Module” (PROG 6.1-1c), “Select by Category” (PROG 3.1-3b) “Init KARMA Module” (COMBI 6.1-1d)

6.1-2: MIDI I/O

Specifies the MIDI input/output channels for the four KARMA modules used by a Sequencer mode song. MIDI data from the keyboard or the MIDI IN connector that matches the MIDI input channel specified for a KARMA module will be input to that KARMA module. (See the diagram below, “KARMA – MIDI Input/Output Channel.”) The MIDI data from each KARMA module will be transmitted on the MIDI output channel specified for that KARMA module, and will be sounded by tracks with matching channels. For real-time recording, data will be recorded on tracks with matching channels.



6.1-2b

note These settings make it possible to use multiple KARMA modules, and simultaneously play multiple tracks of different MIDI channels. If you wish to real-time record such a performance, use multi-track recording mode (Multi REC (1.1-6a)).

6.1-2a: Input Channel, Output Channel, T.Thru (KARMA Off)

A/B/C/D Input Channel [01...16, Tch]

Specifies the MIDI input channel for each KARMA module. MIDI data from the keyboard or MIDI IN connector that matches the specified MIDI channel will be input to that KARMA module.

Tch: Automatically match the MIDI channel (3.1-1(2)a) of the track selected by “Track Select” (1.1-1c).

A/B/C/D Output Channel [01...16, Tch]

Specifies the MIDI output channel for each KARMA module. The MIDI data from each KARMA module will be transmitted on the specified MIDI channel, and will be sounded by tracks with the matching channel.

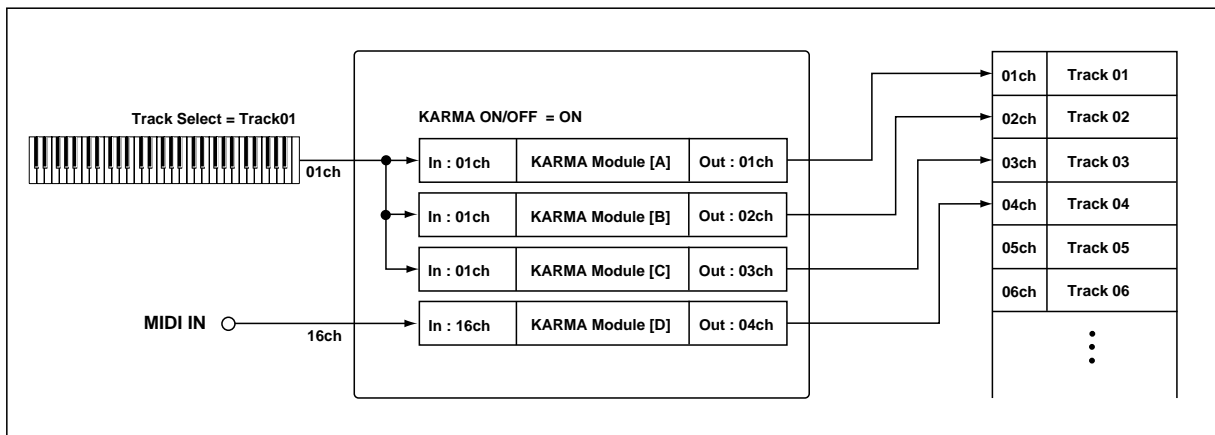
Tch: Automatically match the MIDI channel (3.1-1(2)a) of the track selected by “Track Select” (1.1-1c).

[Example 1]

With the following settings, switching “Track Select” (the track you play) to change programs will also switch to a different KARMA module at the same time, causing a different phrase to play. (See the diagram “Example 1” at the bottom of the next page.)

- ① Set Track 1 as follows.
 - “Program Select”: a **Guitar** category program
 - “MIDI Channel”: **01**
- ② Set Track 2 as follows.
 - “Program Select”: a **Bass** category program
 - “MIDI Channel”: **02**
- ③ Set KARMA module [A] as follows.
 - “GE Select”: a riff of GE category **Guitar**
 - “Input Channel”: **01**
 - “Output Channel” **01**

KARMA - MIDI Input / Output Channel



- ④ Set KARMA module [B] as follows.
 “GE Select”: a riff of GE category **Bass**
 “Input Channel”: **02**
 “Output Channel” **02**
- ⑤ In “Track Select,” select **T01:Track01**, and play the keyboard.
 (KARMA function on)
 The Guitar riff of KARMA module [A] will be sounded by the Guitar type program.
- ⑥ In “Track Select,” select **T02:Track02**, and play the keyboard.
 (KARMA function on)
 The Bass riff of KARMA module [B] will be sounded by the Bass type program.

[Example 2]

With the following settings, switching “Track Select” (the track you play) to change programs will not switch to a different KARMA module --- the same phrase will still be played. (See the diagram “Example 2” at the bottom of this page.)

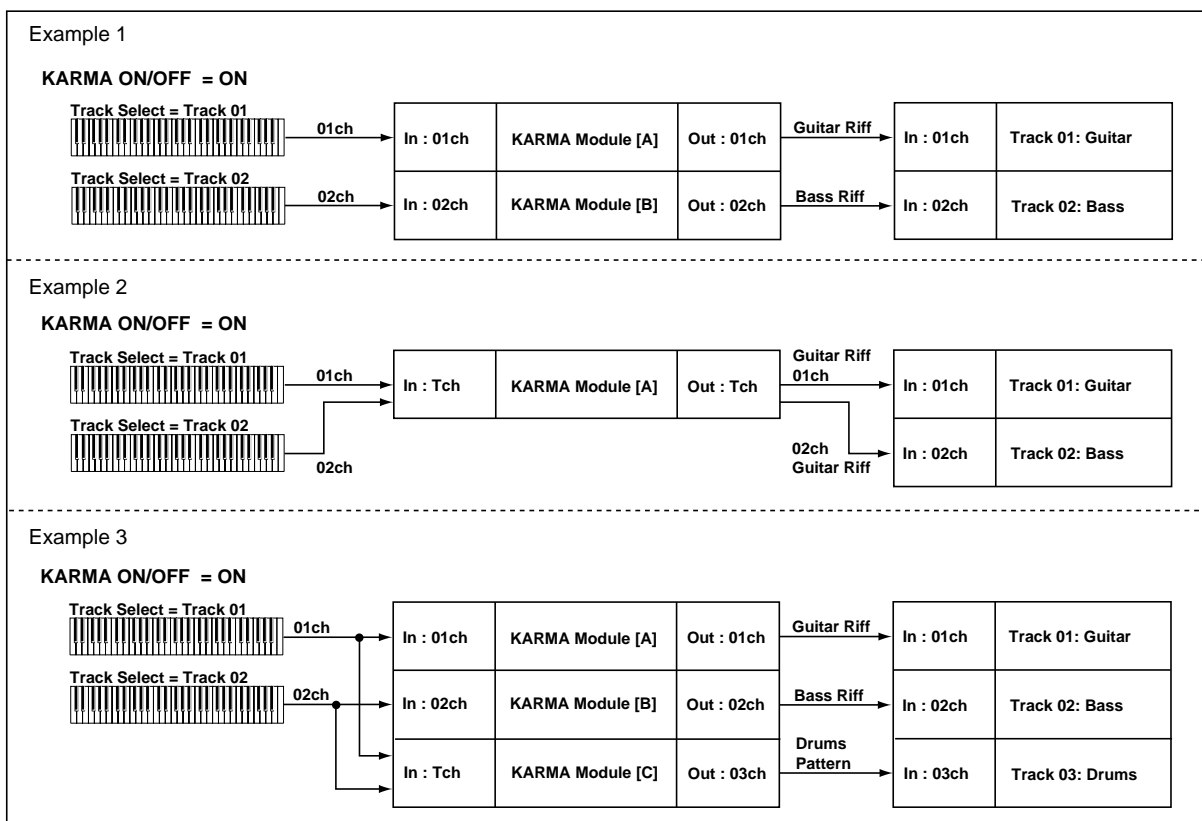
- ① Set Track 1 as follows.
 “Program Select”: a **Guitar** category program
 “MIDI Channel”: **01**
- ② Set Track 2 as follows.
 “Program Select”: a **Bass** category program
 “MIDI Channel”: **02**
- ③ Set KARMA module [A] as follows.
 “GE Select”: a riff of GE category **Guitar**
 “Input Channel”: **Tch**
 “Output Channel” **Tch**
- ④ In “Track Select,” select **T01:Track01**, and play the keyboard.
 The Guitar riff of KARMA module [A] will be sounded by the Guitar type program.

- ⑤ In “Track Select,” select **T02:Track02**, and play the keyboard.
 The Guitar riff of KARMA module [A] will be sounded by the Bass type program.

[Example 3]

With the following settings, switching “Track Select” (the track you play) to change programs will also switch to a different KARMA module at the same time, causing a different phrase to play. At this time, the rhythm track can be triggered and controlled from either track. (See the diagram “Example 3” at the bottom of this page.)

- ① Set Track 1 as follows.
 “Program Select”: a **Guitar** category program
 “MIDI Channel”: **01**
- ② Set Track 2 as follows.
 “Program Select”: a **Bass** category program
 “MIDI Channel”: **02**
- ③ Set Track 3 as follows.
 “Program Select”: a drum program (a **Drums** category program)
 “MIDI Channel”: **03**
- ④ Set KARMA module [A] as follows.
 “GE Select”: a riff of GE category **Guitar**
 “Input Channel”: **01**
 “Output Channel” **01**



- ⑤ Set KARMA module [B] as follows.
 “GE Select”: a riff of GE category **Bass**
 “Input Channel”: **02**
 “Output Channel” **02**
- ⑥ Set KARMA module [C] as follows.
 “GE Select”: a drum pattern (a pattern of GE category **Drums**)
 “Input Channel”: **Tch**
 “Output Channel” **03**
- ⑦ In “Track Select,” select **T01:Track01**, and play the keyboard.
 (KARMA function on)
 The Guitar riff of KARMA module [A] will be sounded by the Guitar type program.
 Simultaneously, the drum pattern of KARMA module [C] will be sounded by the Drums program.
- ⑧ In “Track Select,” select **T02:Track02**, and play the keyboard.
 (KARMA function on)
 The Bass riff of KARMA module [B] will be sounded by the Bass type program.
 Simultaneously, the drum pattern of KARMA module [C] will be sounded by the Drums program.

KARMA Routing Map

This shows the track that will be sounded by each KARMA module, according to the MIDI output channel of each KARMA module and the MIDI channel (3.1-1a) of each track.

Track Thru (T.Thru (KRM Off)) [Off, On]

“Input Channel” and “Output Channel” settings are normally valid only when the KARMA [ON/OFF] key is **on**. As an exception, “Track Thru” specifies whether the MIDI data that passes through the KARMA module will be sent (Thru) to the track when the KARMA [ON/OFF] key is **off**.

On (checked): MIDI data that passes through the KARMA module will be sent on the “Output Channel” to the track when the KARMA [ON/OFF] key is **off**.

Off (unchecked): MIDI data that passes through the KARMA module will not be sent to the track when the KARMA [ON/OFF] key is **off**.

For examples of using this setting, see p.58 Combination mode COMBI 6.1-2a: MIDI I/O, “Timb Thru.”

6.1-2b: UTILITY

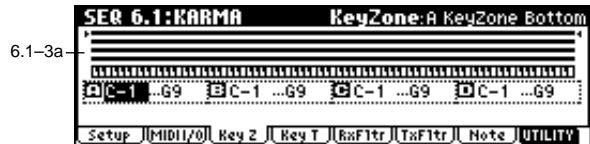
- ☞ “Memory Status,” “Solo Selected Track,” “Rename Song,” “Delete Song,” “Copy From Song,” “Copy From Combi,” “FF/REW Speed,” “Set Location,” (1.1-1d)
- “Copy KARMA Module” (PROG 6.1-1c), “Select by Category” (PROG 3.1-3b)
- “Init KARMA Module” (COMBI 6.1-1d)

6.1-3: KeyZ (Key Zone)

Specify the range of note data (the key zone) that will control each KARMA module.

☞ p.27 PROG 6.1-2a: Key Z/Thru

MIDI In Sequencer mode, the MIDI data for each KARMA module is transmitted and received on the “Input Channel” and “Output Channel” (6.1-2a) specified for each module.



6.1-3b

6.1-3a: Zone Map, KeyZone Bottom, KeyZone Top

Zone Map

Solid lines indicate the key zone settings for each of the four KARMA modules.

☞ p.27 PROG 6.1-2a: Key Z/Thru, “Zone Map”

A/B/C/D KeyZone Bottom [C-1...G9]

A/B/C/D KeyZone Top [C-1...G9]

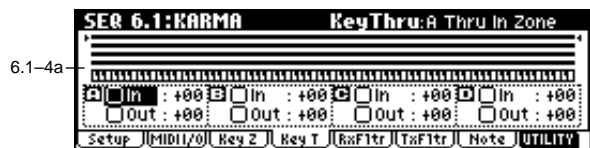
☞ p.27 PROG 6.1-2a: Key Z/Thru, “KeyZone Bottom,” “KeyZone Top”

6.1-3b: UTILITY

- ☞ “Memory Status,” “Solo Selected Track,” “Rename Song,” “Delete Song,” “Copy From Song,” “Copy From Combi,” “FF/REW Speed,” “Set Location,” (1.1-1d)
- “Copy KARMA Module” (PROG 6.1-1c), “Select by Category” (PROG 3.1-3b)
- “Init KARMA Module” (COMBI 6.1-1d)

6.1-4: Key T (KeyThru)

☞ p.27 PROG 6.1-2b: Key Z/Thru



6.1-4b

6.1-4a: Thru In Zone, Transpose InZ, Thru Out Zone, Transpose OutZ

A/B/C/D Thru In Zone [Off, On]

A/B/C/D Transpose InZ [-36...+36]

A/B/C/D Thru out Zone [Off, On]

A/B/C/D Transpose OutZ [-36...+36]

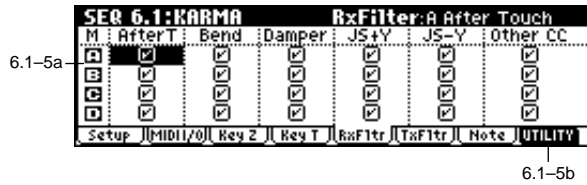
☞ p.27 PROG 6.1-2b: Key Z/Thru

6.1-4b: UTILITY

☞ “Memory Status,” “Solo Selected Track,” “Rename Song,” “Delete Song,” “Copy From Song,” “Copy From Combi,” “FF/REW Speed,” “Set Location,” (1.1-1d)
 “Copy KARMA Module” (PROG 6.1-1c), “Select by Category” (PROG 3.1-3b)

6.1-5: RxFltr (Receive Filter)

☞ p.28 PROG 6.1-3a: Rx Filter
 p.60 COMBI 6.1-5a: Rx Filter



6.1-5b

6.1-5a: Rx Filter

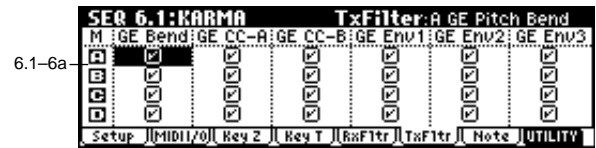
A/B/C/D AfterT (After Touch)	[Off, On]
A/B/C/D Bend (Pitch Bend)	[Off, On]
A/B/C/D Damper (Damper CC#64)	[Off, On]
A/B/C/D JS+Y (JS+Y CC#01)	[Off, On]
A/B/C/D JS-Y (JS-Y CC#02)	[Off, On]
A/B/C/D Other CC	[Off, On]

☞ p.28 PROG 6.1-3a: Rx Filter

6.1-5b: UTILITY

☞ “Memory Status,” “Solo Selected Track,” “Rename Song,” “Delete Song,” “Copy From Song,” “Copy From Combi,” “FF/REW Speed,” “Set Location,” (1.1-1d)
 “Copy KARMA Module” (PROG 6.1-1c), “Select by Category” (PROG 3.1-3b)
 “Init KARMA Module” (COMBI 6.1-1d)

6.1-6: TxFltr (Transmit Filter)



6.1-6b

☞ p.28 PROG 6.1-4: TxFltr (TX Filter)
 p.60 COMBI 6.1-6: TxFltr (TX Filter)

6.1-6a: Tx Filter

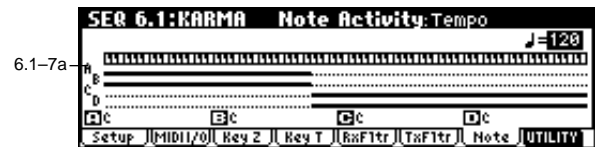
A/B/C/D GE Bend (GE Pitch Bend)	[Off, On]
A/B/C/D GE CC-A	[Off, On]
A/B/C/D GE CC-B	[Off, On]
A/B/C/D GE Env.1	[Off, On]
A/B/C/D GE Env.2	[Off, On]
A/B/C/D GE Env.3	[Off, On]

☞ p.28 PROG 6.1-4a: Tx Filter

6.1-6b: UTILITY

☞ “Memory Status,” “Solo Selected Track,” “Rename Song,” “Delete Song,” “Copy From Song,” “Copy From Combi,” “FF/REW Speed,” “Set Location,” (1.1-1d)
 “Copy KARMA Module” (PROG 6.1-1c), “Select by Category” (PROG 3.1-3b)
 “Init KARMA Module” (COMBI 6.1-1d)

6.1-7: Note (Note Activity)



6.1-7b

6.1-7a: Note Activity Display, Chord Name

Note Activity Display A, B, C, D

Chord Name A, B, C, D

☞ p.48 COMBI 1.1-6: Note (Note Activity)

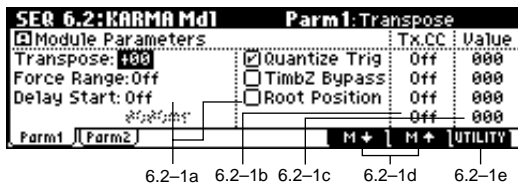
6.1-7b: UTILITY

☞ “Memory Status,” “Solo Selected Track,” “Rename Song,” “Delete Song,” “Copy From Song,” “Copy From Combi,” “FF/REW Speed,” “Set Location,” (1.1-1d)
 “Copy KARMA Module” (PROG 6.1-1c)
 “Init KARMA Module” (COMBI 6.1-1d)

SEQ 6.2: KARMA Mdl

Here you can set the KARMA module parameters. In Sequencer mode, you can use four KARMA modules (modules [A], [B], [C], and [D]) just as in Combination mode. Use the [F6] (**M+**) key and [F7] (**M+**) key (6.2-1d) to select the KARMA module that you wish to edit.

6.2-1: Parm1 (Parameter 1)



6.2-1a: Module Parameters

The selected KARMA module is indicated as [A], [B], [C], or [D].

Transpose [-36...+36]

Force Range
[Off, Lowest, Highest, C3-B3[1], C3-B3[2]]

Delay Start [Off, Fixed, $\frac{1}{3}$...4x_o]

Delay Start Fixed [0000ms...5000ms]

Quantize Trig [Off, On]

☞ p.29 PROG 6.2-1a: Module Parameter, BG p.88 "About the KARMA function — KARMA function synchronization"

TimbZ Bypass (TimbZone Bypass) [Off, On]

Specifies whether the key zone settings (3.3-1b) and velocity zone settings (3.4-1(2)b) of the track will be applied to the phrase or pattern generated by the KARMA module.

On (checked): The key zone settings and velocity zone settings of the track will be bypassed for the phrase or pattern generated by the KARMA module. The settings of the track will be ignored, and the notes generated by the KARMA module will be sounded.

Off (unchecked): The key zone settings and velocity zone settings of the track will be applied to the phrase or pattern generated by the KARMA module. Notes generated by the KARMA module will not sound if they are outside the key zone or velocity zone of the track.

Root Position [Off, On]

☞ p.29 PROG 6.2-1a: Module Parameter

6.2-1b: Tx CC (Transmit CC)

☞ p.30 PROG 6.2-1b: Tx CC

This data will be transmitted on the "Output Channel" (6.1-2a) of the KARMA module.

Tx CC1...4 Number [Off, 000...095]

☞ p.30 PROG 6.2-1b: Tx CC

⚠ If you turn on KARMA [ON/OFF] when a song for which KARMA [ON/OFF] is on is selected, the specified MIDI control change message will be transmitted. If the selected GE is generating the control change that you specified here, the effect of the control change generated by the GE will take priority.

6.2-1c: Value (Tx CC Value)

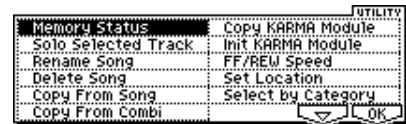
Value (Tx CC1...4 Value) [000...127]

☞ p.30 PROG 6.2-1c: Value (Tx CC Value)

6.2-1d: **M+**, **M+**

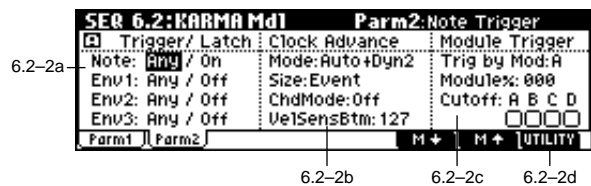
Use the [F6] (**M+**) key and [F7] (**M+**) key to select the KARMA module that you wish to edit.

■ 6.2-1e: UTILITY



☞ "Memory Status," "Solo Selected Track," "Rename Song," "Delete Song," "Copy From Song," "Copy From Combi," "FF/REW Speed," "Set Location," (1.1-1d) "Copy KARMA Module" (PROG 6.1-1c), "Select by Category" (PROG 3.1-3b) "Init KARMA Module" (COMBI 6.1-1d)

6.2-2: Parm2 (Parameter 2)



6.2-2a: Trigger/Latch

Specifies the trigger conditions and latch on/off settings for the GE selected for each KARMA module [A]–[D].

Note:

Note Trigger [Any, AKR, 1st, Dyn]

☞ p.31 PROG 6.2-2a: Trigger/Latch, "Note Trigger"

Note Latch [Off, On]

☞ p.31 PROG 6.2-2a: Trigger/Latch, "Note Latch"

In Sequencer mode, this can be turned on/off for each KARMA module. KARMA modules for which this setting is turned on will be in Latch On mode when the [LATCH] key is on (LED lit).

☞ p.31 PROG 6.2-2a: Trigger/Latch, "Note Latch"

Env1:/Env2:/Env3:

Env1 Trigger/Env2 Trigger/Env3 Trigger
[Any, AKR, 1st, Dyn]

Env1 Latch/Env2 Latch/Env3 Latch
[Off, Sus1, Rel1, Sus2, Rel2]

☞ p.31 PROG 6.2-2a: Trigger/Latch.

6.2-2b: Clock Advance

☞ p.32 PROG 6.2-2b: Clock Advance

Mode (Clk Adv. Mode) [Auto...Auto+Dyn2]
Size (Clk Adv. Size) [3...7, Event]
ChdMode (Chord Mode)
 [Off, 1st, Chrd1, Chrd2, Chrd3]
VelSensBtm (Vel Sens Bottom) [001...127]

☞ p.32 PROG 6.2-2b: Clock Advance

6.2-2c: Module Trigger

Trigger by Mod (Trigger by Module) [Off, A, B, C, D]
Module% [000...100]
Cutoff (Cutoff Module) [Off, On]

☞ p.62 COMBI 6.2-2C: Parm2, Module Trigger

6.2-2d: UTILITY

☞ "Memory Status," "Solo Selected Track," "Rename Song,"
 "Delete Song," "Copy From Song," "Copy From Combi,"
 "FF/REW Speed," "Set Location," (1.1-1d)
 "Copy KARMA Module" (PROG 6.1-1c), "Select by Category"
 (PROG 3.1-3b)
 "Init KARMA Module" (COMBI 6.1-1d)

SEQ 6.3: KARMA GE

Here you can edit the parameters of the GE selected for each KARMA module. If you assign the GE parameters to the KARMA Real-time Controls, you will also be able to control the phrase or pattern in real-time while you play or record.

Use the [F6] (M+) key and [F7] (M+) key (6.2-1d) to select the KARMA module that you wish to edit.

6.3-1: GE P..4 (GE Parameter 1...4)

6.3-2: GE P..8 (GE Parameter 5...8)

6.3-3: GE P..12 (GE Parameter 9...12)

6.3-4: GE P..16 (GE Parameter 13...16)

SEQ 6.3:KARMA GE	Parm:Parm01	Value	Asgn	Pol
GE Parameter				
01.Rhythm: Swing %		0030	01	+
02.Rhythm: Ties-Random Factor [1]		0099	---	+
03.Velocity: Pools-Random Factor [1]		0099	---	+
04.Cluster: Pools-Random Factor [1]		0099	---	+
GE P..4	GE P..8	GE P..12	GE P..16	M+ M+ UTILITY

6.3-1a

6.3-1b

6.3-1(2)(3)(4)a: GE Parameter, Value, Asgn (Assign), Pol (Polarity)

GE Parameter

Value

Asgn (Assign) [---, 01...Dyn4]

Pol (Polarity) [-, +]

☞ p.32 PROG 6.3-1a: "GE Parameter Value," "Asgn," "Pol"

6.3-1(2)(3)(4)b: UTILITY

UTILITY
Memory Status
Solo Selected Track
Rename Song
Delete Song
Copy From Song
Copy From Combi
Copy KARMA Module
Init KARMA Module
FF/REW Speed
Set Location
Select by Category
OK

☞ "Memory Status," "Solo Selected Track," "Rename Song,"
 "Delete Song," "Copy From Song," "Copy From Combi,"
 "FF/REW Speed," "Set Location," (1.1-1d)
 "Copy KARMA Module" (PROG 6.1-1c), "Select by Category"
 (PROG 3.1-3b)
 "Init KARMA Module" (COMBI 6.1-1d)

SEQ 6.4: KARMA RT

☞ p.34 PROG 6.4-1: RTP..4 (RT Parameter 1-4), 6.4-2: RTP..8 (RT Parameter 5-8)

6.4-1: RTP..4 (RT Parameter 1...4)

6.4-2: RTP..8 (RT Parameter 5...8)

SEQ 6.4:KARMA RT		RTPrm:Parm3 Module A									
Grp	Parameter	Min	Max	Val	A	B	C	D	Asgn		
6.4-1a	1:Mix	Run	+0000	+0001	+0001	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Dyn2	
6.4-1b	2:Mix	Run	+0000	+0001	+0001	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Dyn3	
6.4-1c	3:Mix	Run	+0000	+0001	+0001	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	
6.4-1d	4:Off	---	+0000	+0000	+0000	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	---	

6.4-1e

6.4-1(2)a/b/c/d: RT Parm 1...4, RT Parm 5...8

Grp (Parm Group)	[Off, Mix, Ctrl, Trig, Zone]
Parameter	[---, Run...Tr.Oct/5 OutZ]
Min (Parm Min Value)	[---, -0036...+5000]
Max (Parm Max Value)	[---, -0036...+5000]
Value (Parm Value)	[---, -0036...+5000]
A/B/C/D (Parm Module A/B/C/D)	[Off, On]
Asgn (Parm Assign)	[---, 01...Dyn4]

☞ p.34 PROG 6.4-1(2)a/b/c/d: RT Parm 1...4, RT Parm 5...8

6.4-1(2)e: UTILITY

MEMORY STATUS		UTILITY	
Solo Selected Track	Copy KARMA Module		
Rename Song	Init KARMA Module		
Delete Song	FF/REW Speed		
Copy From Song	Set Location		
Copy From Combi			

☞ "Memory Status," "Solo Selected Track," "Rename Song," "Delete Song," "Copy From Song," "Copy From Combi," "FF/REW Speed," "Set Location," (1.1-1d) "Copy KARMA Module" (PROG 6.1-1c) "Init KARMA Module" (COMBI 6.1-1d)

6.4-3: DynMIDI (Dynamic MIDI)

☞ p.36 PROG 6.4-3: DynMIDI (Dynamic MIDI)

SEQ 6.4:KARMA RT		DynMIDI: Dyn1 Input Module									
Input/Source	Btm/Top	Act	Destination	A	B	C	D	L	Pol		
6.4-3a	Off	000/127	C	Off	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
6.4-3b	A/ JS X	000/002	T	RTParm Ctrl1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
6.4-3c	A/ JS X	125/127	T	RTParm Ctrl1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
6.4-3d	A/ JS-Y #02	000/127	M	Trig Nt&Env	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

6.4-3e

6.4-3a/b/c/d: Dyn MIDI1...4

Input (Dyn1...4 Input Module) [A...D]

Select the KARMA module ([A], [B], [C], or [D]) that will be the input "Source" for Dynamic MIDI.

MIDI control data that matches the "Input Channel" (6.1-2a) of the KARMA module you specify here will be used as the "Source." If the "Source" is "Note In Z" or "Note Out Z," the zone will be the key zone (6.1-3a) of the KARMA module you select here.

Source (Dyn1...4 Source) [Off, JS+Y #01...Vel Out Z]

Btm (Dyn1...4 Range-Btm) [000...127]

Top (Dyn1...4 Range-Top) [000...127]

Act (Dyn1...4 Src Action) [M, T, C]

Destination (Dyn1...4 Destination) [Off, RTParm Ctrl...Buffer Latch]

A/B/C/D (Dyn1...4 Module A/B/C/D) [Off, Off]

L (Dyn1...4 Last Triggered) [Off, On]

Pol (Dyn1...4 Polarity) [Off, On]

☞ p.36 PROG 6.4-3a/b/c/d: Dyn MIDI1...4
p.63 COMBI 6.4-3a/b/c/d: Dyn MIDI1...4

6.4-3e: UTILITY

MEMORY STATUS		UTILITY	
Solo Selected Track	Copy KARMA Module		
Rename Song	Init KARMA Module		
Delete Song	FF/REW Speed		
Copy From Song	Set Location		
Copy From Combi			

☞ "Memory Status," "Solo Selected Track," "Rename Song," "Delete Song," "Copy From Song," "Copy From Combi," "FF/REW Speed," "Set Location," (1.1-1d) "Copy KARMA Module" (PROG 6.1-1c) "Init KARMA Module" (COMBI 6.1-1d)

6.4-4: Name1

6.4-5: Name2

SEQ 6.4:KARMA RT		Name1:Knob 1									
6.4-4a	01: [MLT1] 039: Rhythm Swing %										
	02: [Bass] 047: Rhythm Complexity [1]										
	03: [Bass] 063: Duration % (Gate) [1]										
	04: [Orga] 042: Rhythm Randomize										
	05: [Keyb] 048: Rhythm Complexity [2]										

6.4-4b

6.4-4(5)a: Knob 1...8, Switch 1/2

☞ p.36 PROG 6.4-4: Name1, PROG 6.4-5: Name2

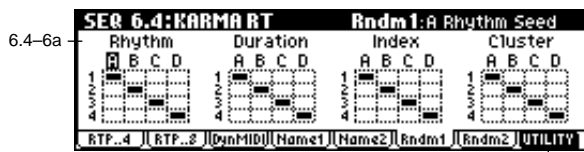
6.4-4(5)b: UTILITY



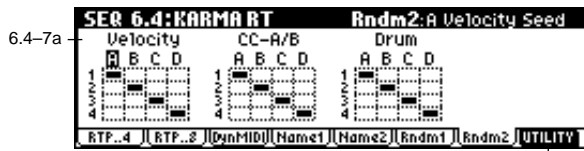
☞ “Memory Status,” “Solo Selected Track,” “Rename Song,” “Delete Song,” “Copy From Song,” “Copy From Combi,” “FF/REW Speed,” “Set Location,” (1.1-1d) “Copy KARMA Module” (PROG 6.1-1c) “Init KARMA Module” (COMBI 6.1-1d)

6.4-6: Rndm1 (Random 1)

6.4-7: Rndm2 (Random 2)



6.4-6b



6.4-7b

6.4-6(7)a: Rhythm, Duration, Index, Cluster, Velocity, CC-A/B, Drum

Rhythm (Rhythm Seed)	[1, 2, 3, 4]
Duration (Duration Seed)	[1, 2, 3, 4]
Index (Index Seed)	[1, 2, 3, 4]
Cluster (Cluster Seed)	[1, 2, 3, 4]
Velocity (Velocity Seed)	[1, 2, 3, 4]
CC-A/B (CC-A/B Seed)	[1, 2, 3, 4]
Drum (Drum Seed)	[1, 2, 3, 4]

☞ p.64 COMBI 6.4-6(7)a: Rndm 1/2

6.4-6(7)b: UTILITY



☞ “Memory Status,” “Solo Selected Track,” “Rename Song,” “Delete Song,” “Copy From Song,” “Copy From Combi,” “FF/REW Speed,” “Set Location,” (1.1-1d) “Copy KARMA Module” (PROG 6.1-1c), “Select by Category” (PROG 3.1-3b) “Init KARMA Module” (COMBI 6.1-1d)

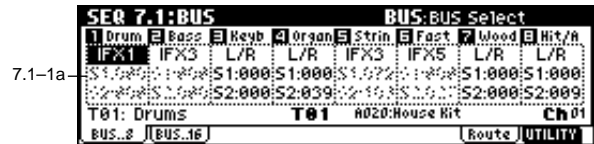
SEQ 7.1: BUS

Specifies the bus to which the program oscillator(s) of each track 1-8, 9-16 will be sent. You can also set the amount of signal that will be sent to the master effects.

☞ For details on insert effects, refer to “7. Effect Guide” p.159.

7.1-1: BUS..8 (BUS T01...08)

7.1-2: BUS..16 (BUS T09...16)



7.1-1a

7.1-1b

7.1-1(2)a: BUS Select, Send1(MFX1), Send2(MFX2)

BUS Select [DKit, L/R, IFX1...5, 1, 2, 1/2, Off]

Specifies the output bus for the program oscillators of tracks 1-8 and 9-16.

The state of the settings can be viewed in the Route page.

☞ COMBI 7.1-1a)

S1 (Send1(MFX1)) [000...127]

S2 (Send2(MFX2)) [000...127]

Here you can adjust the send levels from tracks 1-8, 9-16 to master effects 1 and 2. This is valid when “BUS Select” is set either to L/R or Off. If IFX 1, 2, 3, 4, or 5 is selected, the send level to the master effects 1 and 2 is set by the “Send 1” and “Send 2” parameters located in the Insert FX tab, after the signal passes through IFX 1-5.

These settings have no effect if “BUS Select” is set to 1, 2 or 1/2.

The send 1 and 2 settings you make here will be used when the song is played or recorded from the beginning. If you change the settings while recording, the change will be recorded as part of the musical data, and the send amount will change when the data is played back. You can also change these settings during playback. However if send 1 and 2 data has been recorded, the settings will change accordingly.

MIDI If “Status” (3.1-1(2)a) is either INT or BTH, CC#93 and #91 can be received to control send 1 and 2 respectively and change their settings. When you switch songs or return to the beginning of a song, tracks whose “Status” is EXT, EX2 or BTH will transmit these settings via MIDI. This data will be transmitted on the MIDI channel of each track as set by “MIDI Channel” (3.1-1(2)a). The actual send level is determined by multiplying the value of these parameters with the send level settings of the oscillator(s) of the program used by the track (“S1 (Send1(MFX1))” and “S2 (Send2(MFX2))” PROG 7.2-1a).

■ 7.1-1(2)b: UTILITY



☞ “Memory Status”, “Solo Selected Track”, “FF/REW Speed”, “Set Location” (1.1-1d), “DKit IFX Patch” (COMBI 7.1-1b)

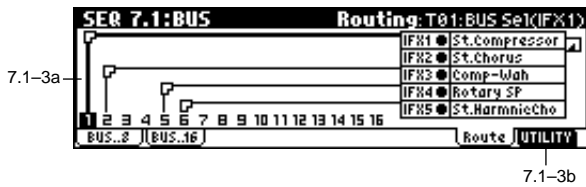
Copy Insert Effect

☞ PROG 7.1-1c
However, the MIDI control channel specified in “Control Channel” of the 7.2: Insert FX, Setup page will not be copied.

Swap Insert Effect

☞ PROG 7.1-1c
However, the MIDI control channel specified in “Control Channel” of the 7.2: Insert FX, Setup page will not be swapped.

7.1-3: Route (Routing)



7.1-3a: Routing Map, BUS Select

This shows the status of the insert effects: the insert effect routing, the names of the selected effects, the on/off status, and chaining. The effect type, on/off, and chain settings can be made in the 7.2: Insert FX, Setup page.

T01...16: BUS Sel [DKit, L/R, IFX1...5, 1, 2, 1/2, Off]

You can specify the bus to which the program oscillators of tracks 1-16 will be sent, while viewing a map of the current settings.

Use the cursor keys [◀], [▶] to select the track, and use the VALUE [▲], VALUE [▼] keys or the [VALUE] dial to set “BUS Select” (7.1-1a/2a).

These settings can also be made from “BUS Select” (7.1-1/2).

■ 7.1-3b: UTILITY

☞ “Memory Status”, “Solo Selected Track”, “FF/REW Speed”, “Set Location” (1.1-1c), “Copy Insert Effect”, “Swap Insert Effect” (7.1-1b/2b), “DKit IFX Patch” (COMBI 7.1-1b)

SEQ 7.2: Insert FX

7.2-1: Setup

Here you can select the type of the insert effects, turn them on/off, and make chain settings.



7.2-1a: Insert FX Setup

IFX1 — IFX5 On/Off	[Off, ON]
Insert Effect 1, 5	[000...089: name]
Insert Effect 2, 3, 4	[000...102: name]
Chain	[☐] (Off), [☑] (ON)
Pan(CC#8)	[L000...C064...R127]
BUS Select	[L/R, 1, 2, 1/2, Off]
S1 (Send1 (MFX1))	[000...127]
S2 (Send2 (MFX2))	[000...127]

These parameters are the same as in Program mode.

☞ PROG 7.2-1

However, this differs from Program mode in that insert effect dynamic modulation (Dmod) and the “Pan (CC#8),” “Send1 (MFX1),” and “Send2 (MFX2)” which follow the insert effect are controlled on the MIDI channel specified by “Control Channel” (7.2-1b). The control changes used are the same as in Program mode.

The pan (CC#8) and Send 1 and 2 that you specify here are used when playing or recording from the beginning of the song. If you change these settings while recording, the settings will be recorded as musical data, and during playback, the settings will change accordingly. You can also change these settings during playback. However if Pan (CC#8) and Send 1/2 data has already been recorded, the settings will change according to the recorded data.

MIDI If the “Status” (3.1-1(2a)) is INT or BTH, receiving CC#8, #93, or #91 will cause the post- insert effect pan and send 1/2 to be controlled, changing the settings. When you change songs or return to the beginning of the song, tracks whose “Status” is BTH, EXT, or EX2 will transmit these settings on the MIDI channel specified by “Control Channel” (7.2-1a).

7.2-1b: Control Channel

Control Channel

[Ch01...16, All Rt.]

MIDI Indicates the MIDI channel that will control effect dynamic modulation (Dmod), pan following the insert effect “Pan (CC#8),” “Send 1 (MFX1),” and “Send 2 (MFX2).”

An asterisk “*” will be displayed at the right of the channel number **Ch01-16** for tracks that are routed to an IFX. If multiple tracks with differing MIDI channel settings are routed, these channels specify the channel that will be used to control the effect.

All Rt. (All Routed): Control can be performed from any of the MIDI channels of the tracks that are routed.

🔊 If “BUS Select” (7.1-1a/2a) is set to **DKit** for a track in which a drum program is selected, the MIDI channel of that track will be valid if any IFX1-5 is set to **All Rt.**, regardless of the drum kit “BUS (BUS Select)” (GLOBAL 5.1-3a) setting or the utility setting “DrumKit IFX Patch.”

■ 7.2-1c: UTILITY



☞ “Memory Status”, “Solo Selected Track”, “FF/REW Speed”, “Set Location” (1.1-1c), “Copy Insert Effect”, “Swap Insert Effect” (7.1-1b/2b), “Select by Category” (PROG 7.2-1b)

7.2-2: IFX1 (Insert Effect1)

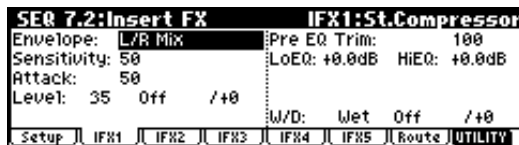
7.2-3: IFX2 (Insert Effect2)

7.2-4: IFX3 (Insert Effect3)

7.2-5: IFX4 (Insert Effect4)

7.2-6: IFX5 (Insert Effect5)

Sets the parameters for the effects selected for IFX 1-5 in the Setup page (☞p.168).



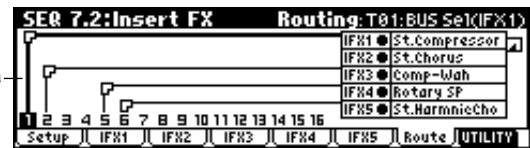
7.2-2a

■ 7.2-2(...6)a: UTILITY



☞ “Memory Status” (1.1-1d)

7.2-7: Route (Routing)



7.2-7a

7.2-7b

7.2-7a: Routing Map

This shows the status of the insert effects. This displays the same contents as the 7.1: BUS, Routing page. (☞7.1-3)

■ 7.2-7b: UTILITY



☞ “Memory Status”, “Solo Selected Track”, “FF/REW Speed”, “Set Location” (1.1-1c), “Copy Insert Effect”, “Swap Insert Effect” (7.1-1b/2b), “Select by Category” (PROG 7.2-1b)

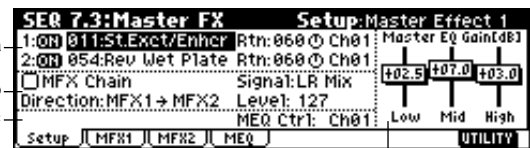
SEQ 7.3: Master FX

☞ For details on the master effects, refer to p.159 “7. Effect Guide.”

7.3-1: Setup

Here you can select the type of master effects, turn them on/off, and make chain and master EQ settings.

This is the same as Program mode with the exception of “MFX1 Control Ch,” “MFX2 Control Ch,” and “MEQ Control Ch.” (☞PROG 7.3: Ed-MasterFX)



7.3-1a

7.3-1b

7.3-1c

7.3-1d

7.3-1e

7.3-1a: Master FX Setup

MFX1 On/Off, MFX2 On/Off [Off, ON]
Master Effect 1, 2 [000...089: name]
Rtn 1, 2 (Return 1, 2) [000...127]

This is the same as in Program mode. Refer to “PROG 7.3-1: Setup.” However, unlike Program mode, the master effects will be controlled by the MIDI channel specified by “MFX 1, 2 Control Ch.” The control changes used are the same as in Program mode.

MFx1, 2 Control Ch [Ch01...16, G ch]

MIDI Specifies the MIDI channel that will control dynamic modulation (Dmod) for the master effects.

G ch: The effect will be controlled on the global MIDI channel "MIDI Channel" (GLOBAL 2.1-1a).

7.3-1b: Master FX Chain

MFx Chain [Off, On]

Direction (Chain Direction) [MFx1→MFx2, MFx2→MFx1]

Signal (Chain Signal) [LR Mix, L Only, R Only]

Level (Chain Level) [000...127]

This is the same as in Program mode. Refer to "PROG 7.3-1: Setup."

7.3-1c: MEQ Ctrl

MEQ Ctrl (MEQ Control Ch) [Ch01...16, G ch]

MIDI Specifies the MIDI channel that will control dynamic modulation (Dmod) for the master EQ.

G ch: The effect will be controlled on the global MIDI channel "MIDI Channel" (GLOBAL 2.1-1a).

7.3-1d: Master EQ Gain [dB]

Low [-18.0...+18.0]

Mid [-18.0...+18.0]

High [-18.0...+18.0]

This is the same as in Program mode. (ⓄPROG 7.3-1: Setup)

■ **7.3-1e: UTILITY**



Ⓞ "Memory Status", "Solo Selected Track", "FF/REW Speed", "Set Location" (1.1-1c), "Select by Category" (PROG 7.3-1d)

Copy Master Effect

Ⓞp.41 PROG 7.3-1d
Note, the MIDI control channel specified in "Control Channel" of the MFx 1 and 2 pages will not be copied.

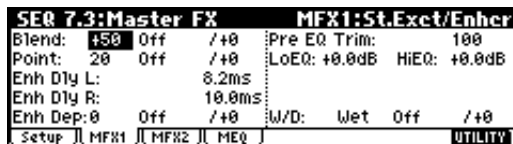
Swap Master Effect

Ⓞp.41 PROG 7.3-1d
Note, the MIDI control channel specified in "Control Channel" of the MFx 1 and 2 pages will not be swapped.

7.3-2: MFx1 (Master Effect1)

7.3-3: MFx2 (Master Effect2)

Here you can set the parameters of the "Master Effect1" and "Master Effect2" effects that were selected in the Setup page (Ⓞp.168).



7.3-2a

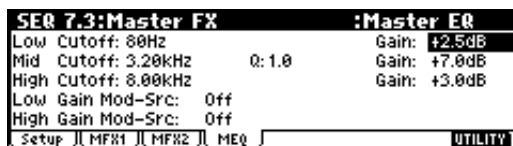
■ **7.3-2(3)a: UTILITY**



Ⓞ "Memory Status" (1.1-1d)

7.3-4: Master EQ (Master EQ)

The master EQ is a three-band stereo EQ. It is used to perform overall equalizing (tonal adjustment) on the sound from the L/R bus immediately before it is output to AUDIO OUTPUT (MAIN OUT) L/MONO and R (Ⓞp.220).



7.3-4a

■ **7.3-4a: UTILITY**

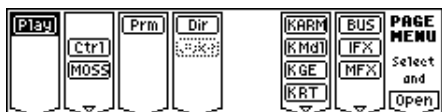
Ⓞ "Memory Status" (1.1-1d)

4. Song Play mode

In Song Play mode you can load Standard MIDI Files (SMF) from floppy disk and play them directly as they are being loaded. A jukebox function is provided to playback these SMF files in any order you specify. You can also use the KARMA function or real-time controllers during playback. In Song Play mode you can playback SMF data and make related settings. This instrument is able to playback SMF **format 0** or **format 1** data.

S.PLAY PAGE MENU

For details on how to select pages in Song Play mode, refer to p.1.



Play	1.1: Play	Play SMF data and make settings. Specify the program, pan, and level for each track. (☞p.115)
Ctrl	2.2: Controller	Controller settings. (☞p.119)
MOSS	2.3: MOSS	Displayed if the separately sold EXB-MOSS option is installed. Make EXB-MOSS parameter settings. (☞p.119)
Prm1	3.1: Parm	Specify whether tracks will sound for KARMA ON/OFF, and make MIDI and scale settings for each track. (☞p.120)
Dir	4.1: Select Directory	Select the directory that contains the SMF to be played. (☞p.121)
Juke	4.2: JukeBox	Displayed when "JukeBox" is checked. Create a jukebox list to specify the playback order of SMF files. (☞p.121)
KARM	6.1: KARMA	KARMA GE selection and settings, MIDI channel, key zone parameters, and MIDI filter. (☞p.122)
K Mdl	6.2: KARMA Mdl	Module parameter settings (transpose, range of generated phrase, trigger, etc.) (☞p.126)
K GE	6.3: KARMA GE	GE parameter settings and assignments to KARMA Real-time Controls (☞p.127)
K RT	6.4: KARMA RT	KARMA RT parameters, Dynamic MIDI settings. (☞p.128)
BUS	7.1: BUS	Set BUS and master effect send level for each track. (☞p.129)
IFX	7.2: InsertFX	Insert effect routing, selection, and settings. (☞p.130)
MFx	7.3: MasterFX	Master effect selection and settings. Master EQ settings. (☞p.131)

S.PLAY 1.1: Play

1.1-1: Play

Here you can make settings for SMF playback.



1.1-1a: Location, Meter, ♩ (Tempo), File, Name, Play(Track Select), Selected Track Information

Location [001:01:000...999:16.191]

This is the current location of the SMF. From the left, this is the measure, beat, and clock. Modifying these values will change the current location.

MIDI When you change the location, a Song Position Pointer message will be transmitted.

Meter

This indicates the time signature at the current location of the SMF.

♩ (Tempo) [40...240]

Specify the playback tempo of the SMF. In Song Play mode, this tempo will be used regardless of the "MIDI Clock" setting (GLOBAL 2.1-2a).

File (File select) [000...999: name]

From a floppy disk, select the SMF that you wish to play back.

You can select SMF files from the currently selected directory. If you wish to select from another directory, use the S.PLAY 4.1: Select Directory to select the directory.

When "Jukebox" (1.1-1a) is **checked**, you can select SMF files from the jukebox list in the S.PLAY 4.2: Jukebox.

This parameter will not be displayed if there are no SMF files in the directory, or if no SMF files have been registered in the jukebox list.

Jukebox [Off, On]

On (checked): SMF files in the jukebox list will be played back in succession. You will also check this when you wish to create a jukebox list.

Also check this when you wish to create a jukebox list. Choose **Juke** from the page menu, select the S.PLAY 4.2: Jukebox page, and create the list.

Name

This displays the song name of the selected SMF.

Play (Track Select) [Track01[Ch01]...Track16[Ch 16]]

Indicates the track (channel) that will sound when you play the keyboard.

MIDI In Song Play mode, MIDI channels 1–16 correspond to tracks 1–16.

Selected Track Information

This area displays information on the track (1–16) currently selected for editing.

T (Track) No.: Bank No.: Prog No. and name

This displays the track number, and the bank, number and name of the program selected for that track.

Ch 01...16

This displays the MIDI channel number of the track.

■ 1.1–1b: UTILITY



For details on how to select the desired utility function, refer to “PROG 1.1–1c: UTILITY.”

GM Initialize

This command transmits a GM System On message to Song Play mode, resetting all tracks to the GM settings (refer to the table below).

GM Initialize Parameters

	Parameter	Track1–9, 11–16	Track10	
1.1	Bank/Program	G000:*A.Piano	g(d)000:STANDARD Kit	
	Pan	C064	C064	
	Volume	100	100	
3.1	Status	–	–	The setting remains unchanged
3.2	Use Program's Scale	–	–	The setting remains unchanged
7.1	IFX/Indiv.Out BUS Select	L/R	DKit	
	Send1(MFX1)	0	0	
	Send2(MFX2)	40	40	
7.2	IFX1–5	–	–	The setting remains unchanged
	Pan(CC#8)	–	–	The setting remains unchanged
	BUS Select	–	–	The setting remains unchanged
	Send1	–	–	The setting remains unchanged
	Send2	–	–	The setting remains unchanged
	Other Insert Effect parameters	–	–	The setting remains unchanged
7.3	MFX1	–	–	016: St. Chorus
	MFX2	–	–	053: Rev Smth. Hall
	Return1	–	–	127
	Return2	–	–	050
	Other Master Effect and Master EQ parameters	–	–	Default settings

* The various KARMA parameters in S.PLAY 6.1–6.4 will maintain their values, and will not change.

MIDI In Song Play mode when a GM System On message is received from an external device or if the SMF contains a GM System On message, the tone generator will be reset to the GM settings in the same way as when this command is executed (However even in these cases, the parameters of the 7.3: Master Fx will not be reset).

Solo Selected Track

When you select this command and check the menu page, only the selected track will sound and the remaining tracks will be muted (the Solo function). To solo a different track, select one of the parameters of that track (☞SEQ 1.1–1d).

MIDI If a track muted by the Mute or Solo function has a “Status” (3.1–1(2)a) of EXT or BTH, the MIDI note-on/off messages of that track will not be transmitted.

Load Template Song

This command loads a preset template song (one of sixteen types P00–15) or a user template song (one of sixteen types U00–15) into the song (☞SEQ 1.1–1d).

Save Template Song

This command saves the programs, the track parameters, and the effect settings etc. as a user template song U00–15 (☞SEQ 1.1–1d).

The settings that are saved here can also be loaded in Sequencer mode.

Set Location

By pressing the [LOCATE] key you can move to the location specified here (☞SEQ 1.1–1d).

1.1-2: Prog..8 (Program T01...08)

1.1-3: Prog..16 (Program T09...16)

Specifies the program used by each track.



1.1-2c

1.1-2(3)a: ProgramSelect, PLAY/MUTE, SOLO On/Off

Program Select

[A...F/000...127, G001...128 g001:1...g128: d]

Indicates the program used by each track.

F000-127 can be selected if the separately sold EXB-MOSS option is installed.

When this parameter is selected, you can use the VALUE controllers to make your selection. At this time, a BANK key LED will light to indicate the bank of the selected program. The track number and the abbreviation for the category of the selected program will be displayed above "Program Select."

note By holding down the [TIMBRE/TRACK] key and pressing a [F1](T1/T9)-[F8](T8/T16) key you can move to the corresponding track "T1"- "T16."

The program bank can also be selected directly by using the [A]-[G] keys.

note You can also use the "Select by Category" utility to select programs by category. (☞p.2)

MIDI If the track "Status" (3.1-1(2)a) is INT or BTH, MIDI program changes can be received to select a program. Tracks 1-16 are controlled by MIDI channels 1-16 respectively.

PLAY/MUTE

[PLAY, MUTE]

This sets the play/mute status of each track.

PLAY: The track will play.

MUTE: The track will be muted.

SOLO ON/OFF

[SOLO On, SOLO Off]

Switches the Solo function on/off.

Select the check box at the right of "PLAY/MUTE," and turn this setting on/off. A track for which this is **on** will show an "S" character within the box, and only that track will sound. The remaining tracks will be muted.

MIDI If a track muted by the Mute or Solo function has a "Status" (3.1-1(2)a) of EXT or BTH, the MIDI note-on/off messages of that track will not be transmitted. (However, the track selected by "Play (Track Select)" (1.1-1a) is an exception.)

▲ If the utility menu command "Solo Selected Track" (1.1-1d) is ON, its solo settings will take priority (when ON). When you press "SOLO On/Off" or press a parameter of another track, only that track will be soloed and will sound.

1.1-2(3)c: UTILITY



☞ "GM Initialize" (1.1-1b), "Solo Selected Track," "Load Template Song," "Save Template Song," "Set Location" (SEQ 1.1-1d)

Select by Category

You can select the program for each track by category. This command will appear and can be selected if "Program Select" is selected.

1.1-4: Mix..8 (Mixer T01...08)

1.1-5: Mix..16 (Mixer T09...16)

Here you can set the pan and volume of each track.



1.1-4b

1.1-4(5)a: Pan, Volume

Pan (Panpot)

[RND, L001...C064...R127]

Set the panning for each track (channel) 1-16 (☞SEQ 1.1-4(5)a).

MIDI Tracks whose "Status" (3.1-1(2)a) is INT or BTH can receive MIDI control change (CC) #10 to control the panpot. When receiving CC#10, a value of 0 or 1 will be far left, 64 will be center, and 127 will be far right. Tracks 1-16 will be controlled by MIDI channels 1-16 respectively.

Volume

[0...127]

Sets the volume of each track (channel) 1–16.

MIDI Tracks whose “Status” (3.1–1(2)a) is INT or BTH can receive MIDI control change (CC) #7 to control the volume. The actual volume of a track is determined by multiplying the MIDI volume (CC#7) and expression (CC#11) values. Tracks 1–16 will be controlled by MIDI channels 1–16 respectively.

■ 1.1–4(5)b: UTILITY

☞ “GM Initialize” (1.1–1b), “Solo Selected Track,” “Load Template Song,” “Save Template Song,” “Set Location” (SEQ 1.1–1d)

1.1–6: Preference

Here you can make settings for playing SMF files consecutively, and make settings for the metronome.



1.1–6a: Preference

Next File:

Specifies whether or not the next file will be played back in succession when the currently selected SMF finishes playing.

Chain to next file [Off, On]

On (checked): When the currently selected file finishes playing, the next file will automatically be selected.

Auto Start [Off, On]

On (checked): When the currently selected SMF finishes playing, the next file will automatically begin playing. This is valid when “Chain to next file” is checked.

Metronome:

Indicates settings for the metronome.

Sound (Metronome Sound) [Off, On]

On (checked): The metronome will sound during playback. The sound of the metronome will be output to the bus selected by “BUS Select.”

Level [000...127]

Set the volume of the metronome.

BUS (BUS Select) [L/R, L, R, 1, 2, 1/2]

Specify the output destination of the metronome sound (☞SEQ 1.1–6b).

■ 1.1–6b: UTILITY

☞ “GM Initialize” (1.1–1b), “Solo Selected Track,” “Load Template Song,” “Save Template Song,” “Set Location” (SEQ 1.1–1d)

1.1–7: K.RTC (KARMA RTC)



1.1–7a: RTC Parameter

This displays the names of the KARMA Real-time Controls knobs and switches, and the knob and switch settings for Song Play mode.

The [---] area preceding the name of each knob or switch shows the abbreviated name of the category of the program selected by the track played by the KARMA module controlled by that knob or switch. In the case of multiple tracks with programs of differing categories, this will indicate [MLTI].

Parameter assignments can be made in the S.PLAY 6.3: KARMA GE: Parm page (6.3–1(2)(3)(4)) and the S.PLAY 6.4: KARMA RT, RTPrm page (6.4–1(2)).

The name can be edited in the S.PLAY 6.4–4/5: KARMA RT, Name 1/2 page.

The SCENE [1]/[2] switches allow you to make two sets of settings for the KARMA Real-time Controls knobs and switches. The knob and switch settings displayed here will also change according to the SCENE 1/2 setting.

Graphic display of knobs and switches

When you operate a knob or switch to modify the setting it originally had when you entered Song Play mode, the graphic display of the knob or switch will be highlighted in black.

When you return the knob or switch to the setting it originally had when you entered Song Play mode, the display will return to the previous state.

This provides a convenient way for you to return to the original state after you have operated a knob or switch.

⚠ Song Play mode has a different structure than a program or combination, and a different reference value is used to highlight the knob or switch graphic. In the case of a program or combination, the knob or switch value that is written will be the reference value. However in Song Play mode, the settings at the moment you entered the mode will be the reference value. (When you enter the mode, the settings will be as they were last edited when you exited the mode.) The operation is as described below.

- ① Select Song Play mode.
- ② The position of knob 1 at the time you entered Song Play mode will be the center (64).
At this time, the knob 1 graphic will show 64.
- ③ Turn knob 1 all the way to the right (127).
The knob 1 graphic will be highlighted as 127.
- ④ Select a different mode.
Temporarily exit Song Play mode.
- ⑤ Select Song Play mode once again.
- ⑥ The knob 1 setting will be the far right setting (127). The knob 1 graphic will be 127.

▲ In Song Play mode, it is not possible to use the “Restore entire program” operation that is available in Program and Combination modes. You can use the “Restore only SCENE settings” and “Restore only knob and switch settings” operations to revert to the settings at the time the mode was selected. (p.6 Program mode “Restoring only SCENE settings,” “Restoring only the knob and switch settings.”)

■ 1.1-7b: UTILITY

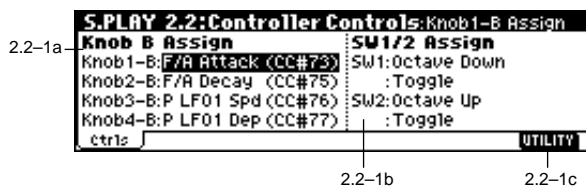
“GM Initialize” (1.1-1b), “Solo Selected Track,” “Load Template Song,” “Save Template Song,” “Set Location” (SEQ 1.1-1d)

S.PLAY 2.2: Controller

Specifies the functions that the [SW1] key, [SW2] key, and the B-mode functions of the REAL-TIME CONTROL knobs [1]–[4] will have in Song Play mode. The functions you specify can be used when playing the track selected by “Play (Track Select)” (1.1-1a).

MIDI If the track you select in “Track Select)” (1.1-1a) has a “Status” (3.1-1(2)a) setting of either **BTH** or **EXT**, operating a controller that has been assigned a CC# will cause MIDI control change (CC#) messages to be transmitted on the MIDI channel of that track.

2.2-1: CtrlS (Controls)



2.2-1a: Knob B-Assign

Assigns the B mode functions (mainly various types of control change) for the front panel REAL-TIME CONTROL knobs [1]–[4] (p.231 “Realtime Control Knobs B Assign List”).

The functions you specify here will operate when the front panel REAL-TIME CONTROL knobs [1]–[4] are operated in B-mode.

▲ Since the REAL-TIME CONTROL knobs [1]–[4] B mode functions of the program assigned to each track will not be valid, you can make new settings here.

Knob1-B (Knob1-B Assign)	AMSource	[Off...MIDI CC#95]
Knob2-B (Knob2-B Assign)	AMSource	[Off...MIDI CC#95]
Knob3-B (Knob3-B Assign)	AMSource	[Off...MIDI CC#95]
Knob4-B (Knob4-B Assign)	AMSource	[Off...MIDI CC#95]

p.10 PROG 2.2-1a: “Knobs B-Assign.”

2.2-1b: SW1/2 Assign

Assigns the functions of the front panel [SW1] and [SW2] keys (p.230 “SW1, SW2 Assign List”).

▲ Since the [SW1] and [SW2] functions of the program assigned to each track will not be valid, you can make new settings here.

SW1 (SW1 Assign)	AMSource	[Off, ..., AfterT Lock]
Toggle/Momentary		[Toggle, Momentary]
SW2 (SW2 Assign)	AMSource	[Off, ..., AfterT Lock]
Toggle/Momentary		[Toggle, Momentary]

p.10 PROG 2.2-1a: “SW1/2 Assign.”

■ 2.2-1c: UTILITY



“GM Initialize” (1.1-1b), “Solo Selected Track,” “Load Template Song,” “Save Template Song,” “Set Location” (SEQ 1.1-1d)

S.PLAY 2.3: MOSS

2.3-1: MOS..8 (MOSS T01...08)

2.3-2: MOS..16 (MOSS T09...16)

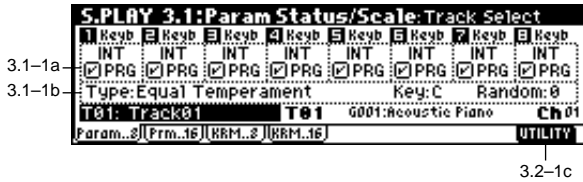
This page is displayed when the separately sold EXB-MOSS option has been installed.

(EXB-MOSS owner’s manual & p.269 “EXB-MOSS option”)

S.PLAY 3.1: Param

3.1-1: Param..8 (Status/Scale T01...08)

3.1-2: Prm..16 (Status/Scale T09...16)



3.2-1c

3.1-1(2)a: Status

Status [INT, Off, BTH, EXT]

Specifies whether each track will transmit/receive MIDI data and/or sound the internal tone generator.

INT: When you play the musical data of this track, or operate this instrument's keyboard or controllers when "Play (Track Select)" (1.1-1a) is set to a track whose setting is **INT**, this instrument's internal tone generator will sound, but MIDI messages will not be transmitted to external devices.

Off: The program will not sound, nor will MIDI messages be transmitted.

BTH: The operations of both **INT** and **EXT** will occur. When you play the musical data of this track, or operate this instrument's keyboard or controllers when "Play (Track Select)" (1.1-1a) is set to a track whose setting is **BTH**, this instrument's internal tone generator will sound, and MIDI messages will also be transmitted to external devices.

EXT: When you play the musical of this track, or operate this instrument's keyboard or controllers when "Play (Track Select)" (1.1-1a) is set to a track whose setting is **EXT**, MIDI messages will be transmitted to external devices, but this instrument's internal tone generator will not sound.

A GM System On message will cause settings for a GM reset to be transmitted via MIDI.

	Musical data Keyboard and controller operations		Received data	
	Internal tone genera- tor	MIDI OUT	Internal tone genera- tor	MIDI OUT
INT	●	×	●	—
EXT	×	●	×	—
BTH	●	●	●	—

Use Prog's Scale [Off, On]

For each track you can specify whether or not the scale specified for the program in "Type" (PROG 2.1-1c) will be used.

On (checked): The scale specified by the program will be used.

Off (unchecked): The scale specified by "Type" (3.1-1(2)b) will be used.

3-1(2)b: Scale

Indicates the scale that will be used in Song Play mode. This is valid when "Use Prog's Scale" is turned **Off**.

Type (SPlay's Scale)

[Equal Temperament...User Octave Scale15]

Indicates the scale type (p.8 PROG 2.1-1c: "Type").

Key (Scale Key) [C...B]

Indicates the tonic key of the selected scale (p.8 PROG 2.1-1c: "Key").

Random [0...7]

As this value is raised, an increasing amount of random deviation will be applied to the pitch at note-on (p.8 PROG 2.1-1c: "Random").

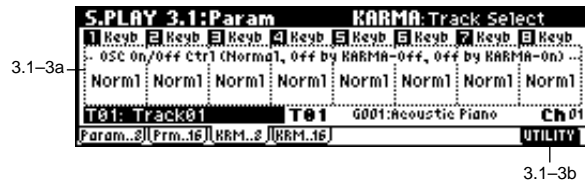
■ 3.1-1(2)c: UTILITY



p.8 "GM Initialize" (1.1-1b), "Solo Selected Track," "Load Template Song," "Save Template Song," "Set Location" (SEQ 1.1-1d)

3.1-3: KRM..8 (KARMA T01...08)

3.1-4: KRM..16 (KARMA T09...16)



3.1-3b

3.1-3(4)a: OSC On/Off Ctrl

OSC On/Off Ctrl [Norml, by Off, by On]

p.51 COMBI 3.2-1: KARMA "OSC On/Off Ctrl."

■ 3.1-3(4)b: UTILITY

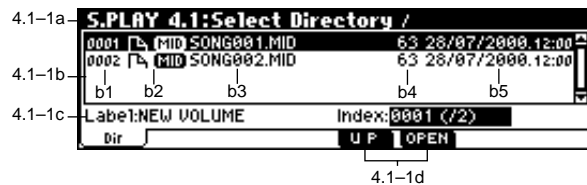
p.8 "GM Initialize" (1.1-1b), "Solo Selected Track," "Load Template Song," "Save Template Song," "Set Location" (SEQ 1.1-1d)

S.PLAY 4.1: Select Directory

This can be selected and viewed from the page menu if "Jukebox" (1.1-1a) is **not checked**.

4.1-1: Select Directory

From a listing of the contents of a floppy disk inserted into the floppy disk drive, select the directory that contains the SMF you wish to play.



4.1-1a: Current directory

The currently displayed directory selected for operations is called the "current directory."

The full pathname of the directory will be shown in the LCD screen. A slash "/" is used to delimit levels of the directory hierarchy.

You can use the [F6] ("Open") key and [F5] ("Up") key to change the current directory.

4.1-1b: Directory window

File information for the current directory is shown here. You can select a file or directory in this window.

b1: File index

This displays the file index.

b2: Files/icons

These indicate SMF and DOS directory files. (For details on icons, refer to Disk mode "Files, directories, and icons" (p.149).)

b3: File name

This is the name of the SMF.

b4: Size

This is the size (number of bytes) of the SMF.

b5: Save date

This is the date (from the left: day, month, year) that was assigned when the SMF was saved.

4.1-1c: Label, Index

Label

The volume label of that media will be displayed. For media that has no volume label, the display will indicate "no label." For unformulated media, the display will indicate "Unformulated."

Index

The file/directory selected in the directory window will be shown in "Index:" The total number of files in the current directory is shown in "(/)."

Use the [UP] , [OPEN] keys to choose File Select, and

use the numeric keys to directly select the file or directory to be edited.

4.1-1d: UP, OPEN

Indicates the current directory.

Use the [F5] ("Up") key and [F6] ("Open") key to select the current directory.

[UP] : Move to the higher directory.

[OPEN] : Move to a lower directory.

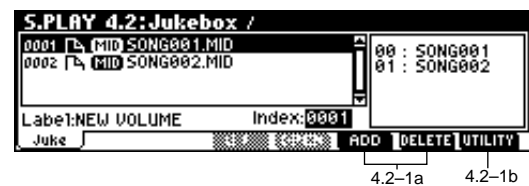
S.PLAY 4.2: Jukebox

This can be selected and viewed from the page menu if "Jukebox" (1.1-1a) is **checked**.

4.2-1: Jukebox

Here you can create a jukebox list to specify the order in which SMF songs will be played. Up to 100 songs can be registered in a jukebox list. Lists can be saved and loaded using utility menu commands "Save Jukebox List" and "Load Jukebox List."

⚠ Before saving to a disk, you must turn off the write protect setting of the disk.



4.2-1a: ADD, DELETE

This adds or deletes SMF files.

[ADD] : Add an SMF to the jukebox list.

In the directory window, select the SMF that you wish to add to the jukebox list, and press the [F6] ("ADD") key.

[DELETE] : Delete an SMF from the jukebox list.

When you press [F7] ("DELETE"), the last SMF in the jukebox list will be deleted.

4.2-1b: UTILITY



For details on how to select the desired utility function, refer to "PROG 1.1-1c: UTILITY."

Load Jukebox List

This command loads the jukebox list that you wish to use.

- In the directory window, select a jukebox list file (file-name extension .JKB), and then select this command. The following dialog box will appear.

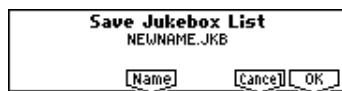


- To load the jukebox list, press the [F8] ("OK") key. To cancel, press the [F7] ("Cancel") key.

Save Jukebox List

This command saves the jukebox list you created as a file.

- Create a jukebox list, and then select this command to open the following dialog box.



- Press the [F5] ("Name") key to move to the text edit dialog box, and input a filename.
- To save the jukebox list, press the [F8] ("OK") key. To cancel, press the [F7] ("Cancel") key. When you press the [F8] ("OK") key, the jukebox list file will be saved on a floppy disk.

S.PLAY 6.1: KARMA

Here you can make settings for the KARMA functions used in Song Play mode. In Song Play mode, you can use four KARMA modules (modules [A], [B], [C], and [D]).

In Song Play mode, you can use the KARMA function when playing along with SMF (Standard MIDI File) playback. You can also make settings so that when you switch the performance track, the phrase produced by the KARMA module will switch simultaneously.

The data from the SMF is not input to the KARMA modules. Note data from the SMF cannot be used as triggers to cause the KARMA function to generate phrases etc.

By using the utility menu command "Copy KARMA Module," you can easily copy the KARMA module settings of a program or combination. Use this when you wish to use Song Play mode to play a KARMA phrase or pattern of Program mode.

The tempo of the SMF and the KARMA function cannot be set independently.

You can use the start timing of the internal sequencer to synchronize the KARMA module.

- If you press the [START/STOP] key while the KARMA function is operating, the KARMA function will synchronize to the timing of the SMF. If you then press the [START/STOP] key again, the KARMA function will stop playing, as will the SMF. If you wish to stop only the KARMA function, press the (KARMA) [ON/OFF] key. (ⓘ About synchronizing the KARMA function, BG p.88)

6.1-1: Setup

The GE can be selected independently for each KARMA module. In Song Play mode, you can use four KARMA modules (modules [A], [B], [C] and [D])



6.1-1d

6.1-1a: GE Category, GE Select

GE Category [00: name...]

This displays the category of the GE that is selected for each KARMA module.

ⓘ p.5 PROG 1.1-3a: KARMA GE Setup, "GE Category"

GE Select [0000: Arp Model 1 Up/Dn...]

Indicates the GE.

ⓘ p.5 PROG 1.1-3a: KARMA GE Setup, "GE Select"

6.1-1b: GE Name, Run Check Box, Solo Check Box

GE Name

This displays the name of the GE selected in "GE Select."

Run Check Box [Off, On]

The KARMA module(s) that are **On (checked)** will operate.

Solo Check Box [Off, On]

Check this when you wish to verify the operation of a specific KARMA module when the KARMA function is running.

☞ p.47 COMBI 1.1-4b: Setup, Solo Check Box

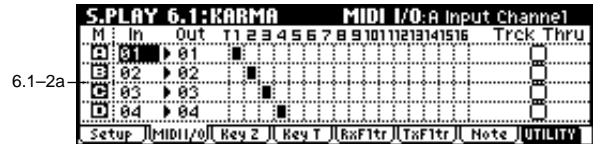
🔍 This will be cleared if you temporarily exit the mode.

6.1-2: MIDI I/O

Specifies the MIDI input/output channels for the four KARMA modules used in Song Play mode.

MIDI data from the keyboard or the MIDI IN connector that matches the MIDI input channel specified for a KARMA module will be input to that KARMA module.

The MIDI data from each KARMA module will be transmitted on the MIDI output channel specified for that KARMA module, and will be sounded by the track of the matching channel.



6.1-2a

6.1-2b

6.1-1c: Selected GE Information, Init K.RTC

This displays information on the KARMA module ([A], [B], [C], [D]) that is currently selected for editing.

GE No., GE Name

☞ p.47 COMBI 1.1-4c: Setup, "GE No., GE Name"

MIDI In/Out Ch

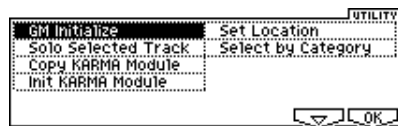
☞ p.47 COMBI 1.1-4c: Setup, MIDI In/Out Ch

These settings are made in S.PLAY 6.1-2: MIDI I/O, "Input Channel" and "Output Channel" (6.1-2a).

Init K.RTC (KARMA Real-time Controls-Use GE's Value) [Off, On]

☞ p.47 COMBI 1.1-4c: Setup "Init K.RTC"

6.1-1d: UTILITY



☞ "GM Initialize" (1.1-1b)

"Solo Selected Track," "Set Location" (SEQ 1.1-1d)

"Copy KARMA Module" (PROG 6.1-1c), "Select by Category" (PROG 1.1-3b)

"Init KARMA Module" (COMBI 6.1-1d)

6.1-2a: Input Channel, Output Channel, KARMA Routing Map, T.Thru (KARMA Off)

A/B/C/D Input Channel [01...16, Tch]

A/B/C/D Output Channel [01...16, Tch]

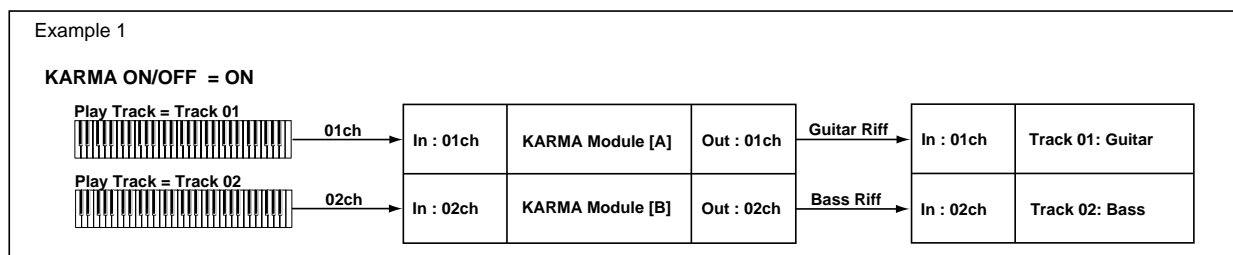
☞ p.104 SEQ 6.1-2a: MIDI I/O "A/B/C/D Input Channel," "A/B/C/D Output Channel"

Tch: Automatically match the MIDI channel to the MIDI Channel of the track selected by "Play (Track Select)" (1.1-1c). (Tracks 01-16 are fixed at MIDI channels 1-16.)

[Example 1]

With the following settings, switching "Play (Track Select)" (the track you yourself will play) to switch programs will also switch the KARMA module simultaneously, causing a different phrase to play. (See the diagram below.)

- ① Set Track 1 (MIDI Channel: ch.1) as follows.
"Program Select": a **Guitar** category program
- ② Set Track 2 (MIDI Channel: ch.2) as follows.
"Program Select": a **Bass** category program
- ③ Set KARMA module [A] as follows.
"GE Select": a riff of GE category **Guitar**
"Input Channel": 01
"Output Channel" 01



- ④ Set KARMA module [B] as follows.
 “GE Select”: a riff of GE category **Bass**
 “Input Channel”: **02**
 “Output Channel” **02**
- ⑤ In “Play (Track Select),” select **T01:Track01**, and play the keyboard. (KARMA function **on**)
 The Guitar riff of KARMA module [A] will be sounded by the Guitar type program.
- ⑥ In “Play (Track Select),” select **T02:Track02**, and play the keyboard.
 The Bass riff of KARMA module [B] will be sounded by the Bass type program.

[Example 2]

With the following settings, changing “Play (Track Select)” (the track you yourself will play) to switch programs will not switch the KARMA module --- the same phrase will still be played. (See the diagram “Example 2” below.)

- ① Set Track 1 (MIDI Channel: ch.1) as follows.
 “Program Select”: a **Guitar** category program
- ② Set Track 2 (MIDI Channel: ch.2) as follows.
 “Program Select”: a **Bass** category program
- ③ Set KARMA module [A] as follows.
 “GE Select”: a riff of GE category **Guitar**
 “Input Channel”: **Tch**
 “Output Channel” **Tch**
- ④ In “Play (Track Select),” select **T01:Track01**, and play the keyboard.
 The Guitar riff of KARMA module [A] will be sounded by the Guitar type program.
- ⑤ In “Play (Track Select),” select **T02:Track02**, and play the keyboard.
 The Guitar riff of KARMA module [A] will be sounded by the Bass type program.

KARMA Routing Map

This shows which tracks will be sounded by each KARMA module, according to the MIDI output channel setting of each KARMA module and the MIDI channel of each track (Tracks 01–16 are fixed at MIDI channels 1–16).

Track Thru (T.Thru (KRM Off)) **[Off, On]**

☞ p.106 SEQ 6.1–2a: MIDI I/O “T.Thru (KRM Off)”

■ 6.1–2b: UTILITY

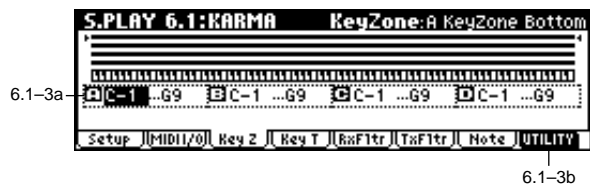
- ☞ “GM Initialize” (1.1–1b)
 “Solo Selected Track,” “Set Location” (SEQ 1.1–1d)
 “Copy KARMA Module” (PROG 6.1–1c), “Select by Category” (PROG 1.1–3b)
 “Init KARMA Module” (COMBI 6.1–1d)

6.1–3: Key Z (KeyZone)

Specifies the range of note data (key zone) that will control each KARMA module.

MIDI In Song Play mode, MIDI data for each KARMA module is transmitted and received on the “Input Channel” and “Output Channel” (6.1–2a) specified for each module.

☞ p.27 PROG 6.1–2a: Key Z/Thru



6.1–3b

6.1–3a: Zone Map, KeyZone Bottom, KeyZone Top

Zone Map

Solid lines indicate the key zone settings for each of the four KARMA modules.

☞ p.27 PROG 6.1–2a: Key Z/Thru, “Zone Map”

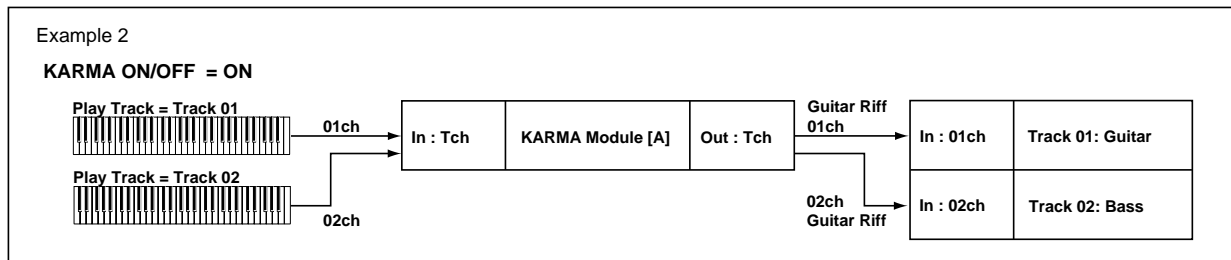
A/B/C/D KeyZone Bottom **[C–1...G9]**

A/B/C/D KeyZone Top **[C–1...G9]**

☞ p.27 PROG 6.1–2a: Key Z/Thru, “KeyZone Bottom,” “KeyZone Top”

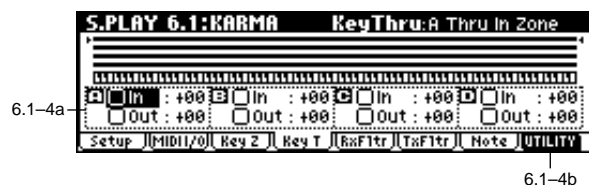
■ 6.1–3b: UTILITY

- ☞ “GM Initialize” (1.1–1b)
 “Solo Selected Track,” “Set Location” (SEQ 1.1–1d)
 “Copy KARMA Module” (PROG 6.1–1c), “Select by Category” (PROG 1.1–3b)
 “Init KARMA Module” (COMBI 6.1–1d)



6.1-4: Key T (Key Thru)

p.27 PROG 6.1-2b: Key Z/Thru



6.1-4b

6.1-4a: Thru In Zone, Transpose InZ, Thru Out Zone, Transpose OutZ

A/B/C/D Thru In Zone	[Off, On]
A/B/C/D Transpose InZ	[-36...+36]
A/B/C/D Thru Out Zone	[Off, On]
A/B/C/D Transpose OutZ	[-36...+36]

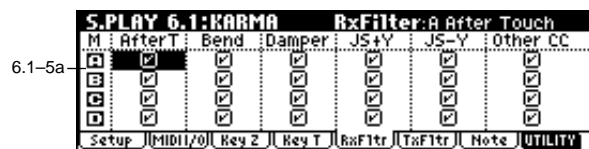
p.27 PROG 6.1-2b: Key Z/Thru

6.1-4b: UTILITY

- “GM Initialize” (1.1-1b)
- “Solo Selected Track,” “Set Location” (SEQ 1.1-1d)
- “Copy KARMA Module” (PROG 6.1-1c), “Select by Category” (PROG 1.1-3b)
- “Init KARMA Module” (COMBI 6.1-1d)

6.1-5: RxFltr (Receive Filter)

p.28 PROG 6.1-3a: Rx Filter
p.60 COMBI 6.1-5a: Rx Filter



6.1-5b

6.1-5a: Rx Filter

A/B/C/D AfterT (After Touch)	[Off, On]
A/B/C/D Bend (Pitch Bend)	[Off, On]
A/B/C/D Damper (Damper CC#64)	[Off, On]
A/B/C/D JS+Y (JS+Y CC#01)	[Off, On]
A/B/C/D JS-Y (JS-Y CC#02)	[Off, On]
A/B/C/D Other CC	[Off, On]

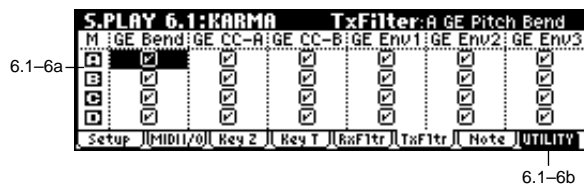
p.28 PROG 6.1-3a: Rx Filter

6.1-5b: UTILITY

- “GM Initialize” (1.1-1b)
- “Solo Selected Track,” “Set Location” (SEQ 1.1-1d)
- “Copy KARMA Module” (PROG 6.1-1c), “Select by Category” (PROG 1.1-3b)
- “Init KARMA Module” (COMBI 6.1-1d)

6.1-6: TxFltr (Transmit Filter)

p.28 PROG 6.1-4: TxFltr (TX Filter)
p.60 COMBI 6.1-6: TxFltr (TX Filter)



6.1-6b

6.1-6a: Tx Filter

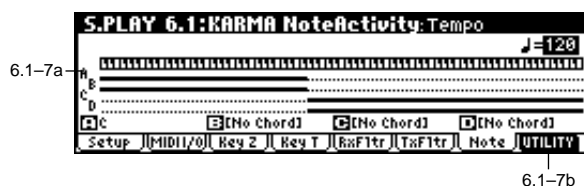
A/B/C/D GE Bend (GE Pitch Bend)	[Off, On]
A/B/C/D GE CC-A	[Off, On]
A/B/C/D GE CC-B	[Off, On]
A/B/C/D GE Env.1	[Off, On]
A/B/C/D GE Env.2	[Off, On]
A/B/C/D GE Env.3	[Off, On]

p.28 PROG 6.1-4a: Tx Filter

6.1-6b: UTILITY

- “GM Initialize” (1.1-1b)
- “Solo Selected Track,” “Set Location” (SEQ 1.1-1d)
- “Copy KARMA Module” (PROG 6.1-1c), “Select by Category” (PROG 1.1-3b)
- “Init KARMA Module” (COMBI 6.1-1d)

6.1-7: Note Activity



6.1-7b

6.1-7a: Note Activity Display, Chord Name

Note Activity Display A, B, C, D
Chord Name A, B, C, D

p.48 COMBI 1.1-6: Note (Note Activity)

■ 6.1-7b: UTILITY

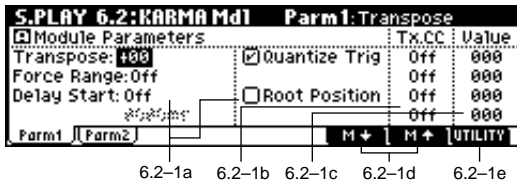


- ☞ “GM Initialize” (1.1-1b)
- ☞ “Solo Selected Track,” “Set Location” (SEQ 1.1-1d)
- ☞ “Copy KARMA Module” (PROG 6.1-1c)
- ☞ “Init KARMA Module” (COMBI 6.1-1d)

S.PLAY 6.2: KARMA Mdl

Here you can set the KARMA module parameters. In Song Play mode, you can use four KARMA modules (modules [A], [B], [C], and [D]) just as in Combination mode and Sequencer mode. Use the [F6] (**M+**) key and [F7] (**M+**) key (6.2-1d) to select the KARMA module that you wish to edit.

6.2-1: Parm1 (Parameter 1)



6.2-1a 6.2-1b 6.2-1c 6.2-1d 6.2-1e

6.2-1a: Module Parameters

The selected KARMA module is indicated as [A], [B], [C], or [D].

- Transpose** [-36...+36]
- Force Range** [Off, Lowest, Highest, C3-B3[1], C3-B3[2]]
- Delay Start** [Off, Fixed, $\frac{1}{3}$...4x_o]
- Delay Start Fixed** [0000ms...5000ms]
- Quantize Trig** [Off, On]

☞ p.29 PROG 6.2-1a: Module Parameter, BG p.88 “About the KARMA function — KARMA function synchronization”

- Root Position** [Off, On]

☞ p.29 PROG 6.2-1a: Module Parameter

6.2-1b: Tx CC (Transmit CC)

- Tx CC1 Number** [Off, 000...095]
- Tx CC2 Number** [Off, 000...095]
- Tx CC3 Number** [Off, 000...095]
- Tx CC4 Number** [Off, 000...095]

☞ p.28 PROG 6.2-1b: Tx Filter

⚠ When you turn on the KARMA [ON/OFF] key, the specified MIDI control change messages will be transmitted. If the selected GE is generating the control change that you specified here, the effect of the control change generated by the GE will take priority.

6.2-1c: Tx CC Value

- Tx CC1 Value** [000...127]
- Tx CC2 Value** [000...127]
- Tx CC3 Value** [000...127]
- Tx CC4 Value** [000...127]

☞ p.30 PROG 6.2-1c: Value (Tx CC Value)

6.2-1d: **M+**, **M+**

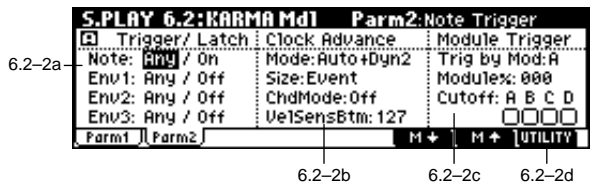
☞ p.61 COMBI 6.2-1d: **M+**, **M+**

■ 6.2-1e: UTILITY



- ☞ “GM Initialize” (1.1-1b)
- ☞ “Solo Selected Track,” “Set Location” (SEQ 1.1-1d)
- ☞ “Copy KARMA Module” (PROG 6.1-1c), “Select by Category” (PROG 1.1-3b)
- ☞ “Init KARMA Module” (COMBI 6.1-1d)

6.2-2: Parm2 (Parameter 2)



6.2-2a 6.2-2b 6.2-2c 6.2-2d

6.2-2a: Trigger/Latch

Specifies the trigger conditions and latch on/off settings for the GE selected for each KARMA module [A]–[D].

Note:

- Note Trigger** [Any, AKR, 1st, Dyn]

☞ p.31 PROG 6.2-2a: Trigger/Latch, “Note Trigger”

- Note Latch** [Off, On]

☞ p.31 PROG 6.2-2a: Trigger/Latch, “Note Latch”

In Song Play mode, this can be turned on/off for each KARMA module. KARMA modules for which this setting is turned on will be in Latch On mode when the [LATCH] key is on (LED lit).

☞ p.31 PROG 6.2-2a: Trigger/Latch, "Note Latch"

Env1:/Env2:/Env3:

Env1 Trigger/Env2 Trigger/Env3 Trigger
[Any, AKR, 1st, Dyn]

Env1 Latch/Env2 Latch/Env3 Latch
[Off, Sus1, Rel1, Sus2, Rel2]

☞ p.31 PROG 6.2-2a: Trigger/Latch

6.2-2b: Clock Advance

Mode (Clk Adv. Mode) [Auto...Auto+Dyn2]

Size (Clk Adv. Size) [♪♩♫, Event]

ChdMode (Chord Mode)
[Off, 1st, Chrd1, Chrd2, Chrd3]

VelSensBtm (Vel Sens Bottom) [001...127]

☞ p.32 PROG 6.2-2b: Clock Advance

6.2-2c: Module Trigger

Trigger by Mod (Trigger by Module) [Off, A, B, C, D]

Module% [000...100]

Cutoff (Cutoff Module) [Off, On]

☞ p.62 COMBI 6.2-2c: Parm2, Module Trigger

■ 6.2-2d: UTILITY

- ☞ "GM Initialize" (1.1-1b)
- "Solo Selected Track," "Set Location" (SEQ 1.1-1d)
- "Copy KARMA Module" (PROG 6.1-1c), "Select by Category" (PROG 1.1-3b)
- "Init KARMA Module" (COMBI 6.1-1d)

S.PLAY 6.3: KARMA GE

Here you can edit the parameters of the GE selected for each KARMA module. If you assign the GE parameters to the KARMA Real-time Controls, you will also be able to control the phrase or pattern in real-time during playback.

6.3-1: GE P.4 (GE Parameter 1...4)

6.3-2: GE P.8 (GE Parameter 5...8)

6.3-3: GE P.12 (GE Parameter 9...12)

6.3-4: GE P.16 (GE Parameter 13...16)

GE Parameter	Value	Asgn	Pol
01.Repeat: Duration Mode (RT)	10001	---	+
02.Repeat: Duration Value (RT)	10500	1	+
03.Env: Env On/Off [1] 074	10001	1	-
04.Repeat: Initial Volume	-0020	4	+

6.3-1a

6.3-1b

6.3-1(2)(3)(4)a: GE Parameter, Value, Asgn (Assign), Pol (Polarity)

GE Parameter

Value

Asgn (Assign) [---, 1...Dyn4]

Pol (Polarity) [-, +]

☞ p.32 PROG 6.3-1a: "GE Parameter," "Value," "Asgn," "Pol"

■ 6.3-1(2)(3)(4)b: UTILITY

UTILITY	
GM Initialize	Set Location
Solo Selected Track	Select by Category
Copy KARMA Module	
Init KARMA Module	

- ☞ "GM Initialize" (1.1-1b)
- "Solo Selected Track," "Set Location" (SEQ 1.1-1d)
- "Copy KARMA Module" (PROG 6.1-1c), "Select by Category" (PROG 1.1-3b)
- "Init KARMA Module" (COMBI 6.1-1d)

S.PLAY 6.4: KARMA RT

6.4-1: RTP..4 (RT Parameter 1...4)

6.4-2: RTP..8 (RT Parameter 5...8)

☞ p.34 PROG 6.4-1: RTP..4 (RT Parameter 1-4), 6.4-2: RTP..8 (RT Parameter 5-8)

Grp	Parameter	Min	Max	Val	A	B	C	D	Asgn	
6.4-1a	1: Mix	Run	+0000	+0001	+0001					Dyn5
6.4-1b	2: Off	----	+0000	+0000	+0000					---
6.4-1c	3: Off	----	+0000	+0000	+0000					---
6.4-1d	4: Off	----	+0000	+0000	+0000					---

6.4-1e

6.4-1(2)a/b/c/d: RT Parm 1...4, RT Parm 5...8

Grp (Parm Group)	[Off, Mix, Ctrl, Trig, Zone]
Parameter	[---, Run...Tr.Oct/5 OutZ]
Min (Parm Min Value)	[---, -0036...+5000]
Max (Parm Max Value)	[---, -0036...+5000]
Value (Parm Value)	[---, -0036...+5000]
A/B/C/D (Parm Module A/B/C/D)	[Off, On]
Asgn (Parm Assign)	[---, ①...Dyn4]

☞ p.34 PROG 6.4-1(2)a/b/c/d: RT Parm 1...4, RT Parm 5...8
 p.63 COMBI 6.4-1(2)a/b/c/d: RT Param1...4, RT Parm 5...8

6.4-1(2)e: UTILITY

GM Initialize	Set Location
Solo Selected Track	
Copy KARMA Module	
Init KARMA Module	

☞ "GM Initialize" (1.1-1b)
 "Solo Selected Track," "Set Location" (SEQ 1.1-1d)
 "Copy KARMA Module" (PROG 6.1-1c)
 "Init KARMA Module" (COMBI 6.1-1d)

6.4-3: DynMIDI (Dynamic MIDI)

☞ p.36 PROG 6.4-3: DynMIDI (Dynamic MIDI)

Input/Source	Btm/Top	Act	Destination	A	B	C	D	L	Pol
6.4-3a	A/ Note	000/127	C	Smart Scan					+
6.4-3b	A/ JS-Y #02	000/127	M	Repeat Stop					+
6.4-3c	A/ JS+Y #01	000/127	T	RTParm Ctrl1					+
6.4-3d	A/ Off	000/127	C	Off					+

6.4-3e

6.4-3a/b/c/d: Dyn MIDI1...4

Input (Dyn1...4 Input Module) [A...D]

☞ p.63 COMBI 6.4-3a/b/c/d: Dyn MIDI, "Input (Dyn1/4 Input Module)"

Source (Dyn1...4 Source) [Off, JS+Y #01...Vel Out Z]

Btm (Dyn1...4 Range-Btm) [000...127]

Top (Dyn1...4 Range-Top) [000...127]

Act (Dyn1...4 Src Action) [M, T, C]

Destination (Dyn1...4 Destination) [Off, RTParm Ctrl...Buffer Latch]

A/B/C/D (Dyn1...4 Module A/B/C/D) [Off, Off]

L (Dyn1...4 Last Triggered) [Off, On]

Pol (Dyn1...4 Polarity) [Off, On]

☞ p.36 PROG 6.4-3a/b/c/d: Dyn MIDI1...4

☞ p.63 COMBI 6.4-3a/b/c/d: Dyn MIDI1...4

6.4-3e: UTILITY

☞ "GM Initialize" (1.1-1b)
 "Solo Selected Track," "Set Location" (SEQ 1.1-1d)
 "Copy KARMA Module" (PROG 6.1-1c)
 "Init KARMA Module" (COMBI 6.1-1d)

6.4-4: Name1

6.4-5: Name2

Key	Function
①: [Keyb] 058	Rhythm Pattern
②: [Keyb] 008	Note Range Bottom
③: [Keyb] 194	Repeat Initial Volume
④: [Keyb] 195	Repeat Decay
⑤: [Keyb] 197	Repeat Transpose

6.4-4b

6.4-4(5)a: Knob1...8, Switch1, 2

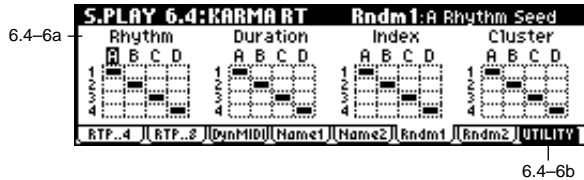
☞ p.36 PROG 6.4-4(5): Name 1/2

■ 6.4-4(5)b: UTILITY

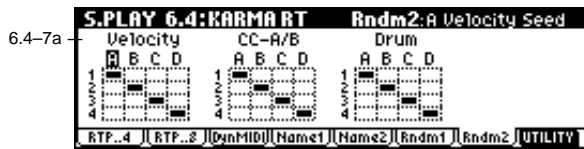
- ☞ “GM Initialize” (1.1-1b)
- “Solo Selected Track,” “Set Location” (SEQ 1.1-1d)
- “Copy KARMA Module” (PROG 6.1-1c), “Select by Category” (PROG 1.1-3b)
- “Init KARMA Module” (COMBI 6.1-1d)

6.4-6: Rndm1 (Random 1)

6.4-7: Rndm2 (Random 2)



6.4-6b



6.4-7b

6.4-6(7)a: Rhythm, Duration, Index, Cluster, Velocity, CC-A/B, Drum

Rhythm (Rhythm Seed)	[1, 2, 3, 4]
Duration (Duration Seed)	[1, 2, 3, 4]
Index (Index Seed)	[1, 2, 3, 4]
Cluster (Cluster Seed)	[1, 2, 3, 4]
Velocity (Velocity Seed)	[1, 2, 3, 4]
CC-A/B (CC-A/B Seed)	[1, 2, 3, 4]
Drum (Drum Seed)	[1, 2, 3, 4]

☞ p.64 COMBI 6.4-6a/7a: Rndm 1/2

■ 6.4-6(7)b: UTILITY



- ☞ “GM Initialize” (1.1-1b)
- “Solo Selected Track,” “Set Location” (SEQ 1.1-1d)
- “Copy KARMA Module” (PROG 6.1-1c), “Select by Category” (PROG 1.1-3b)
- “Init KARMA Module” (COMBI 6.1-1d)

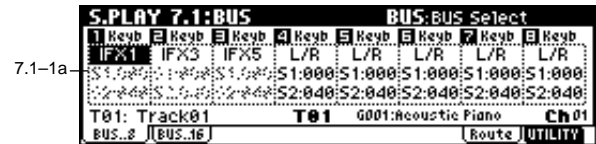
S.PLAY 7.1: BUS

Specifies the bus to which the program oscillator(s) of each track 1-8, 9-16 will be sent. You can also set the amount of signal that will be sent to the master effects.

☞ For details on insert effects, refer to “7. Effect Guide” p.159.

7.1-1: BUS..8 (BUS T01...08)

7.1-2: BUS..16 (BUS T09...16)



7.1-1b

7.1-1(2)a: BUS Select, Send1(MFX1), Send2(MFX2)

BUS Select [DKit, L/R, IFX1...5, 1...4, 1/2, 3/4, Off]

Specifies the output bus for the program oscillators of tracks 1-8 and 9-16.

The state of the settings can be viewed in the Route page.

☞ COMBI 7.1-1a)

S1 (Send1(MFX1)) [000...127]

S2 (Send2(MFX2)) [000...127]

Here you can adjust the send levels from tracks 1-8, 9-16 to master effects 1 and 2. This is valid when “BUS Select” is set either to L/R or Off. If IFX 1, 2, 3, 4, or 5 is selected, the send level to the master effects 1 and 2 is set by the “S1 (Send1(MFX1))” and “S2 (Send2(MFX2))” parameters located in the 7.2: Insert FX1, Setup page, after the signal passes through IFX 1-5.

These settings have no effect if “BUS Select” is set to 1, 2, or 1/2.

The send 1 and 2 settings you make here will be used when the SMF is played back from the beginning. You can also modify the settings during playback. However if the SMF contains send 1 or 2 data, the settings will change accordingly.

MIDI If “Status” 3.1-1(2)a) is INT or BTH, MIDI control change (CC) #93 or #91 can be received to control send 1 or 2 and change the setting. Tracks 1-16 will be controlled by this data on MIDI channels 1-16 respectively. The actual send levels are determined by multiplying the value of these settings with the send level settings “S1 (Send 1 (MFX1))” and “S2 (Send 2 (MFX2))” (Program 7.2-1a) of each oscillator of the program used by the track.

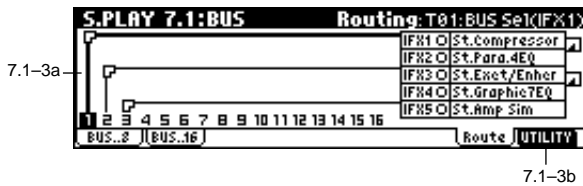
7.1-1(2)b: UTILITY



☞ “GM Initialize” (1.1-1b), “Solo Selected Track,” “Set Location,” (SEQ 1.1-1d), “Copy Insert Effect,” “Swap Insert Effect,” “DKit IFX Patch” (COMBI 7.1-1d)

7.1-3: Route (Routing)

You can also specify the bus for the program used by each track 1-16.



7.1-3a: Routing Map, BUS Select

This shows the status of the insert effects: the insert effect routing, the names of the selected effects, the on/off status, and chaining. The effect type, on/off, and chain settings can be made in the 7.2: Insert FX, Setup page.

T01...16: BUS Sel [DKit, L/R, IFX1...5, 1, 2, 1/2, Off]

You can specify the bus to which the program oscillators of tracks 1-16 will be sent, while viewing a map of the current settings.

Use the cursor keys [◀], [▶] to select the track, and use the VALUE [▲], [▼] keys, [VALUE] slider or the [VALUE] dial to set “BUS Select” (7.1-1a).

These settings can also be made from “BUS Select” (7.1-1a).

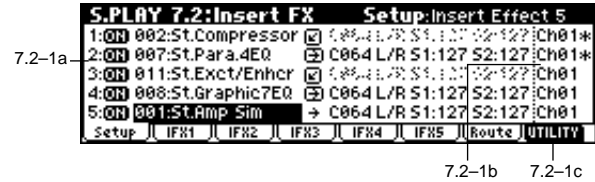
7.1-3b: UTILITY

☞ “GM Initialize” (1.1-1b), “Solo Selected Track,” “Set Location,” (SEQ 1.1-1c), “Copy Insert Effect,” “Swap Insert Effect,” “DKit IFX Patch” (COMBI 7.1-1d)

S.PLAY 7.2: Insert FX

7.2-1: Setup

Here you can select the type of the insert effects, turn them on/off, and make chain settings.



7.2-1a: Insert FX Setup

IFX1 — IFX5 On/Off	[Off, ON]
Insert Effect 1, 5	[000...089: name]
Insert Effect 2, 3, 4	[000...102: name]
Chain	[☐] (Off), [☑] (ON)
Pan(CC#8)	[L000...C064...R127]
BUS Select	[L/R, 1, 2, 1/2, Off]
S1 (Send1 (MFX1))	[000...127]
S2 (Send2 (MFX2))	[000...127]

These functions are the same as in Program mode. (☞PROG 7.2-1)

However, unlike in Program mode, the “Control Channel” (7.2-1b) will be the MIDI channel that controls insert effect dynamic modulation (Dmod) and the “Pan (CC#8),” “Send 1 (MFX1)” and “Send 2 (MFX2)” that follow the insert effects. The control changes used are the same as in Program mode.

The send 1 and 2 settings you make here will be used when the SMF is played back from the beginning. You can also modify the settings during playback. However if the SMF contains send 1 or 2 data, the settings will change accordingly.

7.2-1b: Control Channel

Control Channel	[Ch01...16, All Rt.]
-----------------	----------------------

MIDI Indicates the MIDI channel that will control effect dynamic modulation (Dmod), pan following the insert effect “Pan (CC#8),” “Send 1 (MFX1),” and “Send 2 (MFX2).”

An asterisk “*” will be displayed at the right of the channel number Ch01-16 for tracks that are routed to an IFX. If multiple tracks with differing MIDI channel settings are routed, these channels specify the channel that will be used to control the effect.

All Rt. (All Routed): Control can be performed from any of the MIDI channels of the tracks that are routed. An asterisk “*” will be shown for the Ch of routed tracks (channels).

🔊 If “BUS Select” (7.1-1a/2a) is set to **DKit** for a track in which a drum program is selected, the MIDI channel of that track will be valid if any IFX1-5 is set to **All Rt.**, regardless of the drum kit “BUS (BUS Select)” (GLOBAL 5.1-3a) setting or the utility setting “DrumKit IFX Patch.”

7.2-1c: UTILITY



☞ “GM Initialize” (1.1-1b), “Solo Selected Track,” “Set Location,” (SEQ 1.1-1d), “Copy Insert Effect,” “Swap Insert Effect,” “DKit IFX Patch” (COMBI 7.1-1d), “Select by Category” (PROG 7.2-1b)

7.2-2: IFX1 (Insert Effect1)

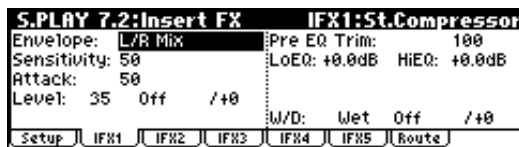
7.2-3: IFX2 (Insert Effect2)

7.2-4: IFX3 (Insert Effect3)

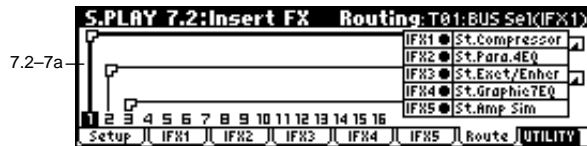
7.2-5: IFX4 (Insert Effect4)

7.2-6: IFX5 (Insert Effect5)

Sets the parameters for the effects selected for IFX 1-5 in the Setup page (☞p.168).



7.2-7: Route (Routing)



7.2-7b

7.2-7a: Routing Map

This shows the status of the insert effects. This displays the same contents as the 7.1: BUS, Routing page. (☞7.1-3a)

7.2-7b: UTILITY

☞ “GM Initialize” (1.1-1b), “Solo Selected Track,” “Set Location,” (SEQ 1.1-1d), “Copy Insert Effect,” “Swap Insert Effect,” “DKit IFX Patch”(COMBI 7.1-1d)

S.PLAY 7.3: Master FX

☞ For details on the master effects, refer to p.159 “7. Effect Guide.”

7.3-1: Setup

Here you can select the type of master effects, turn them on/off, and make chain and master EQ settings.

This is the same as Program mode with the exception of “MFX1 Control Ch,” “MFX2 Control Ch,” and “MEQ Control Ch.” (☞PROG 7.3: Ed-MasterFX)



7.3-1d 7.3-1e

7.3-1a: Master FX Setup

MFX1 On/Off, MFX2 On/Off [Off, ON]
Master Effect 1, 2 [000...089: name]
Rtn 1, 2 (Return 1, 2) [000...127]

This is the same as in Program mode. Refer to “PROG 7.3-1: Setup.” However, unlike Program mode, the master effects will be controlled by the MIDI channel specified by “MFX 1, 2 Control Ch.” The control changes used are the same as in Program mode.

MFX1, 2 Control Ch [Ch01...16, G ch]

Specifies the MIDI channel that will control dynamic modulation (Dmod) for the master effects.

G ch: The effect will be controlled on the global MIDI channel “MIDI Channel” (GLOBAL 2.1-1a). Normally you will leave this at Gch.

7.3-1b: Master FX Chain

MFX Chain

Direction (Chain Direction)

[MFX1→MFX2, MFX2→MFX1]

Signal (Chain Signal)

[LR Mix, L Only, R Only]

Level (Chain Level)

[000...127]

This is the same as in Program mode. Refer to p.40 “PROG 7.3-1: Setup.”

7.3-1c: MEQ Ctrl

MEQ Ctrl (MEQ Control Ch)

[Ch01...16, G ch]

Specifies the MIDI channel that will control dynamic modulation (Dmod) for the master EQ.

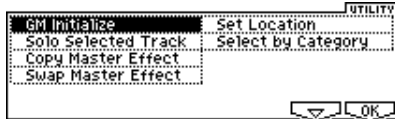
G ch: The effect will be controlled on the global MIDI channel “MIDI Channel” (GLOBAL 2.1-1a). Normally you will leave this at Gch.

7.3-1d: Master EQ Gain [dB]

Low [-18.0...+18.0]
 Mid [-18.0...+18.0]
 High [-18.0...+18.0]

This is the same as in Program mode. (p.40 PROG 7.3-1: Setup)

7.3-1e: UTILITY



“GM Initialize” (1.1-1b), “Solo Selected Track,” “Set Location,” (SEQ 1.1-1d), “Copy Insert Effect,” “Swap Insert Effect,” “DKit IFX Patch” (COMBI 7.1-1d), “Select by Category” (PROG 7.2-1b)

Copy Master Effect

p.41 PROG 7.3-1d

note The MIDI control channel specified in “Control Channel” of the MFX 1 and 2 pages will not be copied.

Swap Master Effect

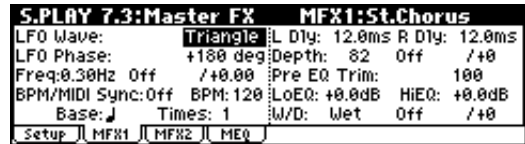
p.41 PROG 7.3-1d

note The MIDI control channel specified in “Control Channel” (7.3-1a) of the MFX 1 and 2 pages will not be swapped.

7.3-2: MFX1 (Master Effect1)

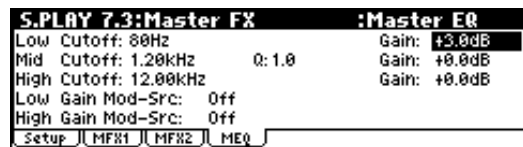
7.3-3: MFX2 (Master Effect2)

Here you can set the parameters for the “Master Effect1” and “Master Effect2” effects that were selected in the Setup page (p.168).



7.3-4: MEQ (Master EQ)

The master EQ is a three-band stereo EQ. It is used to perform overall equalizing (tonal adjustment) on the sound from the L/R bus immediately before it is output to AUDIO OUTPUT (MAIN OUT) L/MONO and R (p.220).



5. Global mode

In Global mode you can make settings that affect the entire instrument, such as master tuning, MIDI, and memory protect. You can also edit user scales, drum kit setups, etc.

! If you want the settings you make in Global mode to be backed up when the power is turned off, you must write them into memory. To write your settings, use the Utility “Write Global Setting” or “Write Drum Kits.” By pressing the [REC/WRITE] key, you can access “Update Global Setting,” “Update Drum Kits.” These commands will simultaneously write the edited content.

GLOBAL PAGE MENU

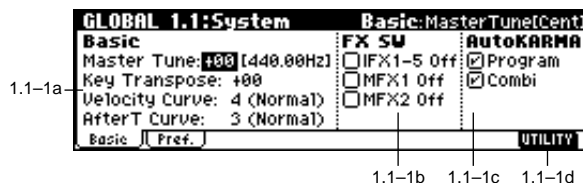
For details on selecting pages and parameters, refer to Program mode “PROGRAM PAGE MENU” p.1.



Sys.	1.1: System	Basic settings for this instrument (p.133)
MIDI	2.1: MIDI	MIDI settings for this instrument. (p.137)
U.Scl	3.1: User Scale	Scale settings created by the user. You can specify 16 types of octave scale, and one full-range scale. (p.140)
U.Cat	4.1: Category Name	Edit category names for programs and combinations. (p.141)
DKit	5.1: DKit	Edit drum kits. (p.142)
Ctrl	6.1: Controller	Control settings for pedals etc. connected to the rear panel. MIDI settings for KARMA real-time controls. (p.145)

GLOBAL 1.1: System

1.1-1: Basic



1.1-1a: Basic

Master Tune (Master Tune [Cent]) [-50cent (427.47Hz)...+50cent (452.89Hz)]

This adjusts the overall tuning of this instrument in one-cent units (semitone = 100 cents) over a range of ±50 cents. With a setting of 0, the frequency of A4 will be 440 Hz.

! The A4 pitch given here is when **Equal Temperament** is selected as the scale. If a different scale is selected, A4 may not be 440 Hz.

Key Transpose [-12...+12]

his adjusts the pitch in semitone steps over a ±1 octave range.

This setting is applied at the location (**Pre MIDI** or **Post MIDI**) specified by “Convert Position” (2.1-1a).

Note number transmitted

Transpose	-12	0	+12
Note number	24...84 (C1...C6)	36...96 (C2...C7)	48...108 (C3...C8)

MIDI “Master Tune” can be controlled by the MIDI universal system exclusive message Master Fine Tuning (F0, 7F, nn, 04, 03, vv, mm, F7: nn=MIDI channel, vv/mm=value).

“Key Transpose” can be controlled by the MIDI universal system exclusive message Master Coarse Tuning (F0, 7F, nn, 04, 04, vv, mm, F7: nn=MIDI channel, vv/mm=value).

These messages are received on the global MIDI channel specified by “MIDI Channel” (2.1-1a).

In Program, Combination, Sequencer, and Song Play modes, MIDI RPN fine tuning messages can be received to adjust the tuning of the program, the timbres (in Combination mode), or the tracks (in Sequencer/Song Play modes) relative to the Global mode “Master Tune” setting.

In Program mode, MIDI RPN fine tune messages will be received on the global MIDI channel that you specified for “MIDI Channel” (2.1-1a). In other modes, MIDI RPN fine tune messages will be received on the MIDI channel for each timbre (in Combination mode) or track (in Sequencer/Song Play modes). (p. “Detune,” “Transpose”: COMBI 3.1-3a, 3.1-5(6)a.)

Velocity Curve

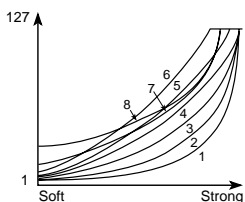
[1...8]

This specifies the way in which the volume and/or tone will change in response to how hard you play (velocity).

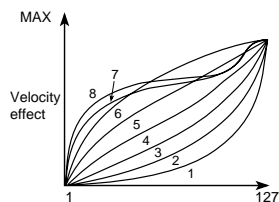
When “Convert Position” (2.1-1a) is **Pre MIDI**, variations in keyboard playing dynamics will affect the velocity effect and the transmitted velocity data as shown in the left-hand diagram on the following page. Incoming data will automatically use the velocity curve number 4 shown in the right-hand diagram.

With a setting of **Post MIDI**, variations in keyboard playing dynamics and in the velocity of incoming data will create change as shown in the right-hand diagram on the following page. If you are playing this instrument’s tone generator from an external keyboard or sequencer, and the overall sound is too bright or too dark, you can set the “Convert Position” parameter to **Post MIDI** and select the appropriate velocity curve here. For the transmitted data, the velocity curve number 4 shown in the left-hand diagram will automatically be selected.

For a setting of Pre MIDI
Velocity (KBD→MIDI Out)



For a setting of Post MIDI
Velocity (MIDI In→TG)



1: These curves produce an effect for strongly-played notes.

2, 3: |

4(**Normal**): These are the standard curves.

5: |

6: An effect will be obtained even if you do not play very strongly

7: A certain amount of effect will be obtained even for softly-played notes

8: This curve produces the most regular effect. This setting is suitable when you do not need velocity sensitivity, or when you wish to make the notes more consistent. However with this curve, control of softly-played notes will be more difficult, so use the curve that is most appropriate for your playing strength and style, and the effect that you wish to produce.

The default factory setting for this parameter is 4.

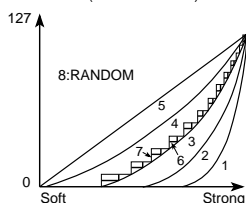
AfterT Curve (AfterTouch Curve)

This specifies the way in which the volume and/or tone will change in response to variations in pressure (after touch) applied to the keyboard while holding down a key.

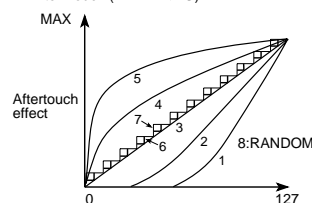
When “Convert Position” (2.1-1a) is **Pre MIDI**, variations in after touch pressure will affect the after touch effect and the transmitted after touch data as shown in the left-hand diagram below. Incoming data will automatically use the after touch curve number 3 shown in the right-hand diagram.

With a setting of **Post MIDI**, variations in after touch pressure and in the value of incoming after touch data will create change as shown in the right-hand diagram. For the transmitted data, the after touch curve number 3 shown in the left-hand diagram will automatically be selected.

For a setting of Pre MIDI
After Touch (KBD→MIDI Out)



For a setting of Post MIDI
After Touch (MIDI In→TG)



1: These curves produce an effect for strongly-applied pressure.

2: |

3(**Normal**): These are the standard curves.

4: |

5: This curve produces change even when light pressure is applied

6, 7: Since these will change in 24 and 12 levels respectively, they are suitable for use when you are recording aftertouch on a sequencer and want to limit memory consumption. (Set “Convert Position”) to PreMIDI.) Curve number 7 allows change over twelve steps, so when using after touch to modify the pitch, you can set the range of modification to one octave, and use after touch to vary the pitch in semitone steps.

8: This is a random curve. Use this when you wish to create special effects, or to use after touch to apply unpredictable modulation.

The default factory setting for this parameter is 3.

MIDI When “Convert Position” (2.1-1a) is **Pre MIDI**, the setting you make here will be applied immediately after the keyboard, meaning that it will affect the data transmitted via MIDI, but will not affect the received data. With a setting of **Post MIDI**, the setting you make here will be applied immediately before this instrument’s internal tone generator, meaning that it will affect the data received via MIDI, but will not affect the transmitted data.

When you use this instrument’s keyboard to play the internal tone generator, the “Convert Position” setting will make no difference.

1.1-1b: FX SW

IFX1-5 Off

[Off, On]

On (checked): All insert effects IFX1-5 will be disabled.

Off (unchecked): The Setup page (7.2-1) “IFX1 On/Off”- “IFX5 On/Off” settings of Program, Combination, Sequencer, and Song Play modes will be valid.

MFX1 Off

[Off, On]

On (checked): MFX1 will be disabled.

Off (unchecked): The Master Effect Setup page (7.3–1) “MFX1 On/Off” settings of Program, Combination, Sequencer, and Song Play modes will be valid.

MFX2 Off

[Off, On]

On (checked): MFX2 will be disabled.

Off (unchecked): The Master Effect Setup page (7.3–2) “MFX2 On/Off” settings of Program, Combination, Sequencer, and Song Play modes will be valid.

MIDI When “IFX1”–“IFX5 On/Off,” or “MFX1 On/Off,” “MFX2 On/Off” settings are switched, control change messages CC#92 (effect control 2), CC#94 (effect control 4), and CC#95 (effect control 5) will be transmitted respectively. The transmitted data will be 0 for off, and 127 for on.

1.1–1c: Auto KARMA

Program (Auto KARMA Prog)

[Off, On]

On (checked): When you switch programs, the KARMA module settings memorized in the newly selected program will automatically become active.

Off (unchecked): Even when you switch programs, the KARMA module settings will not change. Use this setting when you wish to change only the program sound without affecting the KARMA settings.

Combi (Auto KARMA Combi)

[Off, On]

On (Checked): When you switch combinations, the KARMA module settings memorized in the newly selected combination will automatically become active.

Off (unchecked): Even when you switch combinations, the KARMA module settings will not change. Use this setting when you wish to change only the combination sound without affecting the KARMA settings.

1.1–1d: UTILITY



For details on how to select the desired utility function, refer to “PROG 1.1–1c: UTILITY.”

Write Global Setting

This command writes Global mode settings (except for Drum Kits).

- 1 Select “Write Global Setting” to access the dialog box.



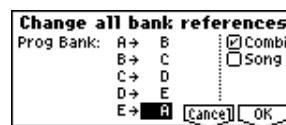
- 2 To write the data, press the [F8] (“OK”) key. To cancel without writing, press the [F7] (“Cancel”) key. You can also use the [REC/WRITE] key to write data in the same way as the “Write Global Setting” command. Press the [REC/WRITE] key to access the “Update Global Setting” dialog box, and press the [F8] key to write the data.

To write a drum kit, execute the appropriate utility.
(⇨ 5.1–1d “Write Drum Kits”)

Change all bank references

This command changes all program banks specified for timbres in combinations or tracks of songs.

- 1 Select “Change all bank references” to access the dialog box.



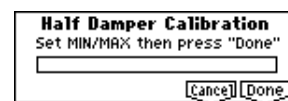
- 2 To execute this command for combinations, check “Combi.” To execute this command for songs, check “Song.” If you check “Song,” the program banks within the event data of the multis will also be changed.
- 3 Specify the banks to be changed (“Program Bank”).
- 4 To execute the Change All Bank References command, press the [F8] (“OK”) key. To cancel without executing, press [F7] (“Cancel”) key.

! If you change two or more different banks to the same bank, it will not be possible to use this function to change them back to different banks. Be careful that the change destination banks do not overlap.

Half Damper Calibration

If a damper pedal that supports half damper (the separately sold DS–1H option) is connected to the rear panel DAMPER jack, here’s how you can adjust the sensitivity if the damper effect is not applied appropriately.

- 1 Connect the half damper pedal to the DAMPER jack.
- 2 Select “Half Damper Calibration” to access the dialog box.



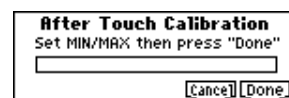
- 3 Press the half damper pedal, and then release the pedal.
- 4 Press the F8 (“Done”) key. If the adjustment could not be performed correctly, an error message will appear. Please repeat the procedure.

! Since the operation of the half damper pedal is delicate, please use the separately sold DS–1H option. If any other pedal is used, the correct effect may not be obtained, or adjustment may not be possible.

After Touch Calibration

If the aftertouch effect depth does not function appropriately, you can adjust the sensitivity. Perform the following adjustment if the sensitivity of the aftertouch effect is not correct, such as when aftertouch fails to reach the maximum value.

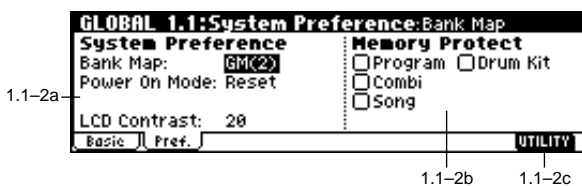
- 1 Select “After Touch Calibration” to access the dialog box.



- 2 Press down a single key for which the aftertouch effect depth does not correctly, and then release it.
- 3 Press the F8 (“Done”) key. If the adjustment could not be performed correctly, an error message will appear, so please repeat the operation.

! The depth of the aftertouch effect may differ slightly from key to key.

1.1-2: Pref. (System Preference)



1.1-2a: System Preference

Bank Map

[KORG, GM(2)]

Specifies the mapping of programs and combinations relative to Bank Select control change messages (CC#0 upper byte and CC#32 lower byte).

The bank select messages shown in the following table can be received (R) or transmitted (T), corresponding to Program banks A...F (only for the separately sold EXB-MOSS option), banks G, g (1)–g(9), g(d) and Combination banks A...F.

Bank	Bank Map: KORG	Bank Map: GM(2)
Bank A	00. 00 R/T	63. 00 R/T
Bank B	00. 01 R/T	63. 01 R/T
Bank C	00. 02 R/T	63. 02 R/T
Bank D	00. 03 R/T	63. 03 R/T
Bank E	00. 04 R/T	63.04 R/T
Bank F	00. 05 R/T	63. 05 R/T
Bank G, g (0)...g (9)	121. 00, 121. 01...09 R/T	121. 00, 121. 01...09 R/T
	56. 00 R	56. 00 R 00. 00, 00. 01...(XG) R 00. 00, 01. 00...(GS) R
Bank g (d)	120. 00 R/T	120. 00 R/T
	62. 00 R	62. 00 R
		63. 127 R (→Korg MUTE)

Value: decimal, R: Receive, T: Transmit


Power On Mode

[Reset, Memorize]

Specifies the condition at power-on.

Reset: This instrument will be in Combination mode COMBI 1.1: Play, and Combination A000 will be selected.

Memorize: The location (mode and page) where you were when the power was last turned off, and the last-selected program or combination number will be selected.

 The contents of any parameters that were being edited are not saved by this function. Before turning the power off, you must Write your edits, or after writing save them in Disk mode.

LCD Contrast

[0...62]

This sets the contrast of the LCD screen. Higher values will increase the contrast.

note If because of the temperature or other reasons, the LCD screen is unreadable when the power is turned on, use the following procedure to adjust the contrast.

- ① Press the [EXIT] key three times, and then press the [GLOBAL] key.
- ② Hold down the [EXIT] key, and press the [REC/WRITE] key.
- ③ Use the [VALUE] dial or the [VALUE] slider to adjust the setting.

1.1-2b: Memory Protect

Program

[Off, On]

This setting protects the internal program memory.

On (checked): Internal program memory will be protected, and the following write operations cannot be performed.

Writing a program
Receiving program data via MIDI data dump
Loading program data from disk

Off (unchecked): Data can be written to internal program memory.

Combi (Combination)

[Off, On]

This setting protects the internal combination memory.

On (checked): Internal combination memory will be protected, and the following write operations cannot be performed.

Writing a combination
Receiving combination data via MIDI data dump
Loading combination data from disk

Off (unchecked): Data can be written to internal combination memory.

Song

[Off, On]

This setting protects the internal song memory.

However, when the power is turned off, the song data in song memory will be lost regardless of this setting.

On (checked): Internal song memory will be protected, and the following write operations cannot be performed.

Recording to the sequencer
Receiving song data via MIDI data dump
Loading song data from disk
Saving template songs in Sequencer mode

Off (unchecked): Data can be written to internal song memory.

Drum Kit

[Off, On]


This setting protects the internal drum kit memory.

On (checked): Internal drum kit memory will be protected, and the following write operations cannot be performed.

Writing a drum kit
Receiving drum kit data via MIDI data dump
Loading drum kit data from disk

Off (unchecked): Data can be written to internal drum kit memory.

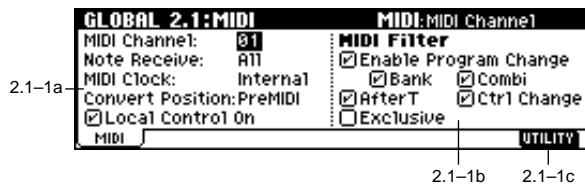
1.1-2c: UTILITY

 "Write Global Setting," "Change all bank references," "Half Damper Calibration," "After Touch Calibration" (1.1-1d)

GLOBAL 2.1: MIDI

2.1-1: MIDI

Here you can make MIDI-related settings that affect this instrument.



2.1-1a: MIDI Setup

MIDI Channel

[1...16]

Sets the global MIDI channel.

The global MIDI channel is used in the following cases.

- When transmitting and receiving performance data in Program mode (PROG 1.1: Play).
- When selecting combinations via MIDI in Combination mode (COMBI 1.1: Play).
- When controlling timbres or effects that have been set to **Gch** in various modes
- When transmitting and receiving system exclusive messages

About MIDI reception

In Program mode (PROG 1.1: Play), MIDI data is received on the global MIDI channel, but in Combination mode (COMBI 1.1: Play) or Sequencer mode, MIDI data is received on the MIDI channel specified for each timbre or track. In Combination mode (COMBI 1.1: Play), program changes received on the global MIDI channel will switch the combination.

Use the global MIDI channel to switch IFX 1-5, MFX1 and MFX2 on/off. To control the pan following IFX, sends 1/2, MFX 1/2 and MEQ, use the global MIDI channel in Program mode; in Combination, Sequencer, or Song Play mode, use the channel specified separately by "Control Channel" for IFX1-5, MFX1, MFX2, and MEQ. By setting "Control Channel" to **Gch**, you can control these parameters from the global MIDI channel.

MIDI transmission when this instrument's controllers are operated

In Program mode, this data will be transmitted on the global MIDI channel. In Combination mode, data will be transmitted simultaneously on the global MIDI channel and on the MIDI channels of timbres whose "Status" (COMBI 3.1-1) is set to **EXT** or **EX2**.

In Sequencer, Song Play modes, musical data will be transmitted on the channel specified for the currently selected track (whose "Status" is **BTH**, **EXT**, or **EX2**).

Local Control On

[Off, On]

On (checked) Local Control On: The keyboard, joystick, REAL-TIME CONTROLS knobs [1]-[4], [SW1], and [SW2] keys of this instrument will controls its internal tone generator. When the KARMA module is operating, events generated by the KARMA module will be transmitted.

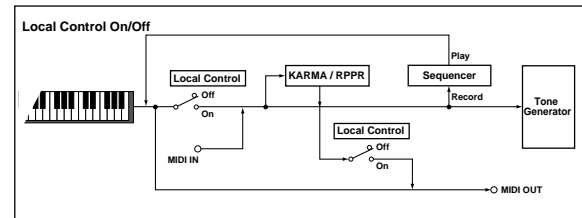
Off (unchecked) Local Control Off: The keyboard, joystick, and REAL-TIME CONTROLS knobs [1]-[4] etc. of this instrument will be disconnected from the internal tone generator.

This means that operating this instrument (using the keyboard or joystick to perform, or playing the sequencer) will

not produce sound.

Uncheck this setting if the echo-back from an external sequencer causes this instrument to sound in duplicate. If the KARMA module is operating, events generated by the KARMA module will not be transmitted.

MIDI Even if this is unchecked, MIDI transmission and reception will occur as usual. Note messages will be transmitted when you play the keyboard, and this instrument's tone generator will sound when note messages are received.



Note Receive

[All, Even, Odd]

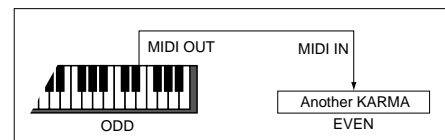
This setting specifies which of the note messages played on this instrument's keyboard or received via MIDI will be sounded. If you connect another KARMA unit to this instrument in order to increase the total polyphony, set one unit to **Even** and the other to **Odd**, and set both units to sound.

All: All note numbers will be received. Normally you will leave this set to **All**.

Even: Even-numbered notes (C, D, E, F#, G#, A#) will sound.

Odd: Odd-numbered notes (C#, D#, F, G, A, B) will sound.

MIDI This setting has no effect on the MIDI data that is received.



MIDI Clock

[Internal, External]

Specifies how this instrument's internal sequencer and KARMA module will synchronize with an external MIDI sequencer or rhythm machine.

Internal: The internal sequencer and KARMA module will operate according to the internal clock. Use the **Internal** setting when you are using this instrument by itself, or when using it as the **master** (controlling device) to which other external MIDI devices will synchronize.

External: This instrument's internal sequencer and KARMA module will operate according to the MIDI Clock messages received from an external MIDI device connected to the MIDI IN connector.

Use the **External** setting when you are using this instrument as a **slave** (controlled device) that synchronizes to the MIDI Clock messages received from an external MIDI device. This instrument will respond to MIDI real-time messages (Start, Stop, Continue, Song Select, Song Position Pointer) from an external sequencer.

MIDI In Song Play mode, this instrument will always synchronize to its own internal clock regardless of this setting.

Convert Position

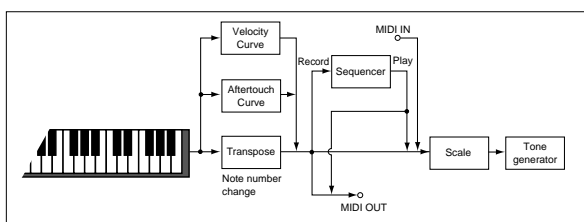
[Pre MIDI, Post MIDI]

This setting specifies the location at which the Transpose, Velocity Curve, and After Touch Curve settings will be applied. This setting will affect the MIDI data that is transmitted and received, and the data that is recorded on the internal sequencer.

When using this instrument's keyboard to play the internal tone generator, the Transpose, Velocity Curve, and After Touch Curve settings will always take effect regardless of this setting.

Pre MIDI: Velocity Curve, After Touch Curve, and Transpose will be applied to the data that is transmitted from this instrument's keyboard.

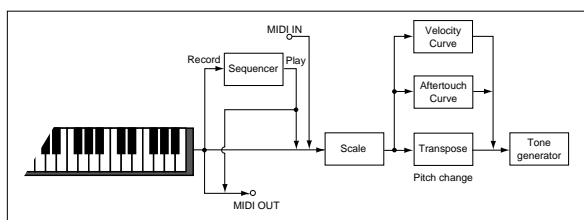
This means that the Velocity Curve, After Touch Curve, and Transpose settings will affect the data that is transmitted from MIDI OUT when this instrument's keyboard is played, and the data that is recorded on the internal sequencer. MIDI data received from MIDI IN or the data played back by the internal sequencer will not be affected.



Post MIDI: Velocity Curve, After Touch Curve, and Transpose will be applied to data before it enters the tone generator.

This means that the Velocity Curve, After Touch Curve, and Transpose settings will affect the data that is sent to the internal tone generator when you play this instrument's keyboard, when the internal sequencer is played back, or when data is received from MIDI IN.

This setting will not affect the data that is transmitted from MIDI OUT or recorded on the internal sequencer when you play this instrument's keyboard or playback the sequencer.



2.1-1b: MIDI Filter

Enable Program Change

[Off, On]

On (checked): Program changes will be transmitted and received.

In Program mode (PROG 1.1: Play), the program will be switched when a program change message is received on the global MIDI channel specified by "MIDI Channel" (2.1-1a). When you switch programs, a program change message will be transmitted on the global MIDI channel.

In Combination mode (COMBI 1.1: Play), the combination will be switched when a program change message is received on the global MIDI channel. However, it is possible to set the "Combi (Combi Change)" parameter so that the combination is not switched. When a program change is received on the channel specified for each timbre by "MIDI Channel" (COMBI 3.1-1a), the program of that timbre will be switched. However, the program changes for each timbre will be affected by the setting of the "Program Change"

parameter (COMBI 4.1-1a).

When you switch combinations, a program change message will be transmitted on the global MIDI channel, and also transmitted simultaneously on the channel of timbres whose "Status" (COMBI 3.1-1a) is set to EXT or EX2.

In Sequencer mode, incoming program change messages on a channel that corresponds to a track whose "Status" (SEQ 3.1-1/2a) is set to INT or BTH will switch programs on that track. When you select a song or playback sequencer data, program changes will be transmitted on the channels of tracks whose "Status" is set to BTH, EXT, or EX2.

Off (unchecked): Program changes will not be transmitted or received.

Bank (Bank Change)

[Off, On]

On (checked): The Bank Select control change message will be transmitted together with program change messages.

This is valid when "Enable Program Change" is checked.

Off (unchecked): Bank Select messages will not be transmitted or received.

When recording on the internal sequencer, bank select messages will be recorded regardless of this setting. However for playback, this setting will apply.

Combi (Combi Change)

[Off, On]

On (checked): When in COMBI 1.1: Play, an incoming program change message on the global MIDI channel set by "MIDI Channel" (2.1-1a) will switch combinations. This is valid when "Enable Program Change" is checked. An incoming program change on a channel other than the global MIDI channel will switch the program of any timbre that matches that MIDI channel.

Off (unchecked): An incoming program change message on the global MIDI channel will switch the program of any timbre whose "MIDI Channel" (COMBI 3.1-1a) matches the global MIDI channel. The combination will not be switched. The program changes for each timbre will be affected by the setting of the "Program Change" parameter (COMBI 4.1-1a).

AfterT (After Touch)

[Off, On]

On (checked): MIDI after touch messages will be transmitted and received.

Off (unchecked): MIDI after touch messages will neither be transmitted nor received.

When recording sounds that do not require the use of after touch, you can uncheck this parameter to save memory.

This setting has no effect when you use the internal sequencer to playback sequence data that was recorded with after touch data; i.e., after touch will be transmitted via MIDI. This instrument's keyboard transmits only channel after touch; it does not transmit polyphonic after touch. However, since this instrument does support polyphonic after touch as an Alternate Modulation Source (AMS), it can receive polyphonic after touch to control individual notes.

Ctrl Change (Control Change) [Off, On]

On (checked): Control change messages will be transmitted and received.

Off (unchecked): Control change messages will neither be transmitted nor received.

This setting has no effect when you use the internal sequencer to playback sequence data that was recorded with control change data; i.e., control changes will be transmitted via MIDI.

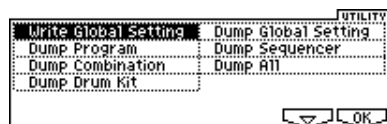
Exclusive [Off, On]

On (checked): System exclusive data will be transmitted and received. Check this setting when you wish to use a connected computer etc. to edit this instrument, or vice versa.

Off (unchecked): System exclusive data will neither be transmitted nor received. Normally you will leave this unchecked.

However, system exclusive data will be transmitted and received while the page menu commands (“Dump Program”–“Dump All”) of this page are displayed.

■ 2.1-1c: UTILITY



☞ “Write Global Setting” (1.1-1d)

Dump Program

Dump Combination

Dump Drum Kit

Dump Global Setting

Dump Sequencer

Dump All

These commands allow this instrument’s data to be transmitted to another connected KARMA, MIDI data filer, or computer in the form of system exclusive data.

Selects the data to be dumped from the Utility menu (see the table below) to access the dialog box.

As necessary, select the bank and number of the data to be dumped, and press [F8] (“OK”) key.

Dump Program	Programs of all banks, programs of the specified bank, one program
Dump Combination	Combinations of all banks, combinations of the specified bank, one combination
Dump Drum Kit	All drum kits, One drum kit
Dump Global	Global settings (except for the Drum Kits of Global mode)
Dump Sequencer	All sequences
Dump All	All banks of programs + combinations + drum kits + global settings + sequences

Transmission

⚠ Do not touch this instrument’s switches or turn off the power while data is being transmitted.

Data dump transmission procedure

- ① Connect this instrument to the device that will receive the data dump.
If you are using a computer that is able to receive MIDI exclusive data, connect the computer’s MIDI interface (connected to the computer) to the MIDI OUT connector of this instrument. (☞p.245)
If you are using a MIDI data filter etc., connect this instrument’s MIDI OUT connector to the MIDI IN connector of the MIDI data filter.
- ② Select Global mode 2.1: MIDI.
- ③ In the Utility menu, select the data that you wish to dump.
If you wish to dump data for an individual bank, set “Program” to **Bank**, and specify the bank number below it. If you wish to dump data for an individual program, set “Program” to **Single**, and specify the program number below it.



- ④ Press the [F8] (“OK”) key to transmit the data. While the data is being transmitted, the display will indicate “Now transmitting data.”
The data size and the time required for transmission will depend on the type of data.
For the size and the time required to dump each type of data, refer to the table below.

Type of data dumped	Data size (kByte)		Time required (Sec)	
	This instrument	EXB-MOSS is installed	This instrument	EXB-MOSS is installed
Program All	588.1	715.0	188.2	228.8
Program Bank (A...E)	117.6	---	37.6	---
Program Bank (F)	---	127.0	---	40.6
Program Single (A...E)	0.9	---	0.3	---
Program Single (F)	---	1.0	---	0.3
Combination All	874.2	←	279.7	←
Combination Bank	145.7	←	46.6	←
Combination Single	1.1	←	0.4	←
Drum Kit All	300.8	←	96.2	←
Drum Kit Single	4.7	←	1.5	←
Global Setting	1.0	←	0.3	←
Sequence Data	5.6–1376.6	←	1.8–440.5	←
All	1769.7–3140.7	1896.6–3267.6	566.2–1004.9	606.8–1045.5

⚠ When you save data dumps from this instrument to a MIDI data filer, do not save multiple data dumps together. If this data is saved together, there will be insufficient time for this instrument to write each received portion into memory before the next portion of data arrives, so that it will be impossible to receive all of the data correctly.

Reception

- ⚡ Do not touch this instrument's switches or turn off the power while data is being received.
- ⚡ Before receiving data, we recommend that you close the various dialog boxes, page menus, or utility commands (with the exception of the "Receive and Save MIDI Exclusive Data" dialog box (DISK 1.1-2a: Save Exclusive). It is not possible to receive dump data in the Sequencer mode SEQ 2.1: CUE List page when you have pressed the [F7] ("EDIT") key and are editing the cue list. In this case, you must press the [F7] ("DONE") key and exit cue list editing if you need to receive data.
- ⚡ After a data dump is received, this instrument will require up to 3 seconds to process the data and write it into memory. During this time, the display will indicate "Now writing into internal memory." While this display is shown, you must under no circumstances turn off the power of this instrument. If the power is turned off during this time, this instrument may fail to operate correctly when the power is turned on again. If this occurs, hold down the [MENU] key and the [9] key while you turn on the power. However when this is done, the contents of memory will be initialized.

Transmission and reception of MIDI data is also impossible during this time. When receiving multiple data dumps in succession, you must allow an interval between the transmission of each data dump.

Type of data dumped	Processing time for writing into memory
All	Approximately 3 seconds
All Programs	Approximately 1 seconds
1 Program Bank	Approximately 1 seconds
All Combination	Approximately 2 seconds
1 Combination Bank	Approximately 1 seconds
All Drum Kits	Approximately 1 seconds
Global Setting	Approximately 1 seconds
Sequencer	Approximately 1 seconds

- ⚡ While this instrument is writing the data into memory, transmission of Active Sensing (FEh) messages from the MIDI OUT connector will stop.

Data dump reception procedure

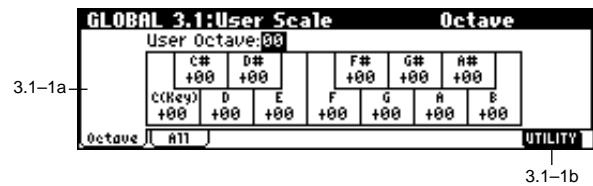
- ① Connect this instrument and the device that will receive the data dump.
If you are using a computer that is able to transmit MIDI exclusive data, connect the computer's MIDI interface (connected to the computer) to the MIDI IN connector of this instrument. (p.245)
If you are using a MIDI data filer, connect the MIDI OUT connector of the data filer to the MIDI IN connector of this instrument.
- ② Set the MIDI channel of the MIDI device to match the global MIDI channel "MIDI Channel" (2.1-1a) of this instrument. If data that was previously transmitted to the MIDI device is now going to be received again by this instrument, set the global MIDI channel of this instrument to the same global MIDI channel setting that was used when transmitting the data.
To set the MIDI channel of the transmitting device, refer to the owner's manual for that device.
- ③ Turn **check** the "Exclusive" setting (2.1-1b).
- ④ Transmit the data from the other device. For the procedure, refer to the owner's manual for the device you are using. While the data is being received, the display will indicate "Now received MIDI data."

GLOBAL 3.1: User Scale

Here you can create sixteen User Octave Scales and one User All Notes Scale. The user scales you create here can be selected in the PROG 2.1-1, COMBI 3.2-1, SEQ 3.2-1/2, PLAY 3.1-1/2.

- ⚡ If you wish to keep an edited user scale after the power is turned off, be sure to write (save) your settings. This data is written by the Utility "Write Global Setting." Alternatively, you can press the [REC/WRITE] key to access the Write Global Setting dialog box, and press the [F8] ("OK") key to write the edited data.

3.1-1: Octave



3.1-1a: User Octave Scale

User Octave

[00...15]

Select the user octave scale that you wish to edit.

Tune

[-99...+99]

Specifies the scale for one octave of notes. When you adjust the pitch of each note in the octave (C-B) in one-cent steps, your settings will be applied to all octaves. This adjustment is relative to equal temperament.

A setting of -99 lowers the pitch approximately a semitone below normal pitch.

A setting of +99 raises the pitch approximately a semitone above normal pitch.

note The note can also be selected by holding down the [ENTER] key and playing a note on the keyboard.

3.1-1b: UTILITY



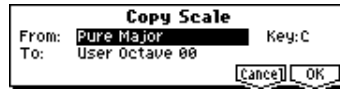
⚡ "Write Global Setting" (1.1-1d)

For details on how to select the desired utility function, refer to "PROG 1.1-1c: UTILITY."

Copy Scale

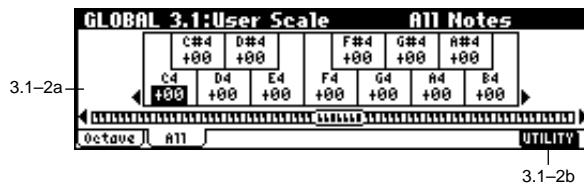
This command copies a preset scale or user scale to the user scale that you wish to edit. For details on the preset scales, refer to "Type" (PROG 2.1-1c).

- 1 Select "Copy Scale" to access the dialog box.



- 2 Select the copy source scale ("From").
If you select **Pure Major** or **Pure Minor**, you must also specify the "Key" selection located at the right.
Stretch can be selected only if "To" is the **User All Notes Scale**.
- 3 Select the copy destination scale ("To").
- 4 To execute the Copy Scale command press the [F8] ("OK") key. To cancel without executing press the [F7] ("Cancel") key.

3.1-2: All Notes



3.1-2a: User All Notes Scale

Tune [-99...+99]

Here, you can make independent pitch settings for each of the 128 notes.

Adjust the pitch of each of the 128 notes (C-1 - G9) in one-cent steps. This adjustment is relative to equal temperament.

A setting of -99 lowers the pitch approximately a semitone below normal pitch.

A setting of +99 raises the pitch approximately a semitone above normal pitch.

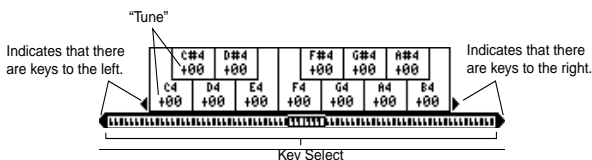
In the case of the "User All Notes Scale," you can select **Stretch** in the Utility menu command "Copy Scale" (3.1-1b).

note Use the cursor keys [◀], [▶] to select the key that you wish to set. You can also select the key by holding down the [ENTER] key and playing a note on the keyboard.

Key Select [C-1...G9]

This indicates the location of the key displayed in "Tune."

You can use the cursor keys [◀], [▶] to move in one-octave steps.



3.1-2b: UTILITY

☞ "Write Global Setting" (1.1-1d), "Copy Scale" (3.1-1b)

GLOBAL 4.1: Category Name

4.1-1: P.0..7 (Prog.00...07)

4.1-2: P.8..15 (Prog.08...15)

4.1-3: C.0..7 (Comb.00...07)

4.1-4: C.8..15 (Comb.08...15)

Here you can assign names to the program and combination categories.

Select the category whose name you wish to modify, press the [F5] ("TEXT") key to access the text dialog box, and input the name.

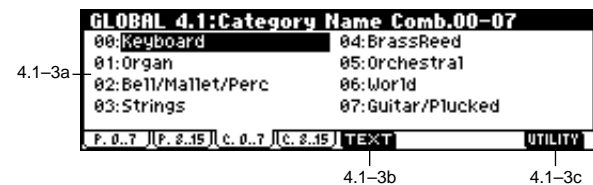
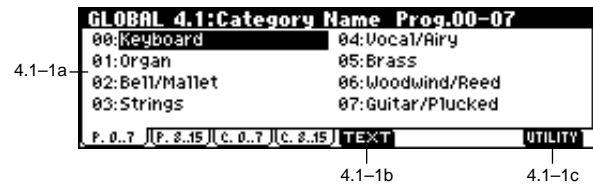
A maximum of 16 characters can be input (☞BG p.39).

The category names you edit here can be selected in the dialog box when you write a program or combination.

With the factory settings, these are classified by type of instrument.

You can specify sixteen categories each for programs and combinations.

note The category names you edit here can be specified when you write data in the "Write Program dialog box" (PROG 1.1-c: UTILITY) or "Write Combination dialog box" (COMBI 1.1-c: UTILITY), and used in the respective "Select by Category" function to select programs or combinations by category.



⚠ If you want the edited user categories to be backed up when the power is turned off, you must write them into memory. Select the Utility "Write Global Setting" to access the Write Global Setting dialog box, or press the [REC/WRITE] key to display the Update Global settings dialog box and press the [F8] ("OK") key to write the edited settings.

4.1-1 (...4)a: Category

Indicates the category name that you wish to edit.

4.1-1 (...4)b: TEXT

Edits the category name.

Press the [F5] ("TEXT") key to access the text dialog box, and enter a category name of up to 16 characters.

For the editing procedure, refer to BG p.39.


4.1-1 (...4)c: UTILITY

☞ "Write Global Setting" (1.1-1d)


GLOBAL 5.1: DKit (Drum Kit)


Here you can create a drum kit by assigning a drum instrument (drumsample) to each key.


A drum kit you edit here can be selected in Program mode PROG 2.1: Ed-Basic OSC1 page "Drum Kit" (when "Oscillator Mode" is **Drums**) as an oscillator, and processed through the filter, amp and effects in the same way as a "multisample" (when "Oscillator Mode" is **Single** or **Double**).


When you wish to edit a drum kit, enter Program mode, select a program that uses a drum kit (i.e., whose "Oscillator Mode" is **Drums**), and then move to this page. A program that uses a drum kit will already have filter, amp, and effect settings etc. suitable for drum sounds. (Programs in the separate *Voice Name List* that use a drum kit are indicated by a ) symbol.)

Even if a program with an "Oscillator Mode" of **Single** or **Double** is selected in Program mode, the program will sound using its own filter and amp settings etc. Effects will sound according to the settings of the program you selected. You must set "Octave" (PROG 2.1-2b) to +0[8']. With any setting other than +0[8'], the key locations and drum sounds will not correspond correctly.

 If "Exclusive" (2.1-1b) is checked, the drum kit can be edited using exclusive data.

 When a drum kit is edited, all programs that use that drum kit will be affected.

 If you want the edited drum kit settings to be backed up after you turn off the power, you must write them into memory. Select the Utility "Write Drum Kits" to access the Write Drum Kits dialog box, or press the [REC/WRITE] key to access the Update Drum Kits dialog box, and press the [F8] ("OK") key to write the edited settings.

 For details on creating a drum kit, refer to BG p.90.

5.1-1: High (High Sample)

Here you can select a drum kit, assign High and Low drum-samples to each key, and set parameters for the High and Low drumsamples.



5.1-1a: Drum Kit, Key, Assign, Level H, Level L, Vel. SW L→H

Drum Kit [00(A/B)...63(User)]

Selects the drum kit that you wish to edit.

If you wish to modify the drum kit name, use the "Rename Drum Kit" Utility menu command.

00(A/B) ...15(A/B)	Preload drum kits
16(C)...31(C)	for EXB-PCM series drum kits and user drum kits
32(D)...47(D)	
48(User)...63(USER)	

Key [C-1...G9]

Indicates the key to which you will assign a drumsample (and its settings).

To select the key, use the [F6] ("Key-"), [F7] ("Key+") keys. You can also select a key by holding down the [ENTER] key and playing a note on the keyboard.

All 5.1: DKit parameters except for "Drum Kit" will apply to the key you assign here.

Two drumsamples, High and Low, can be assigned to each key, and you can switch between them by velocity as you play.

Assign [Off, On]

On (checked): The drumsamples you assigned for High (5.1-1b) and Low (5.1-2a) will sound. Normally you will check this parameter.

Off (unchecked): The selected drumsamples will be invalid, and the drumsamples of the key to the right will sound. At this time, the pitch will be a semitone lower than the pitch of the key to the right. Uncheck this parameter when you wish to play a drumsample at differing pitches.

Level H (Level High) [-99...+99]

Level L (Level Low) [-99...+99]

Specifies the volume of the High and Low drumsamples. Keys that are set to +99 will sound at a volume double that of the amp level of the program that uses this drum kit. Keys that are set to 0 will sound at the amp level of the program that uses this drum kit. Keys that are set to -99 will not sound.

Vel. SW L→H (Velocity SW Lo→Hi) [001...127]

Specifies the velocity value at which you will switch from the Low drumsample to the High drumsample. Velocities above this value will sound the High drumsample, and velocities below this value will sound the Low drumsample. If you do not wish to use velocity switching, set this to **001** and specify only the High drumsample (☞“Velocity SW L→H” PROG 2.1–2(3)b).

note You can also select a key by holding down the [ENTER] key and playing a note on the keyboard.

5.1–1b: High (High Sample)**Drumsample Bank [ROM, EXB*, EXB*]**

Specifies the bank of the High drumsample.

ROM: Select preset Drumsamples. In “Drumsample,” you can choose from **0000: BD-Dry 1 – 0412: Amp Noise**. (☞VNL)

EXB*: Drumsamples from a separately sold EXB-PCM series option board can be selected. This can be selected only if an option board containing drumsamples is installed. “*” will indicate the type of installed option.

🔍 If a drum kit that uses a drumsample from a separately sold EXB-PCM series board is selected, but the necessary drumsample is not available because the corresponding EXB-PCM (expansion board) is not installed, the “Bank” field will indicate **ROM**. In this case, that drumsample will not sound. By re-selecting the drumsample bank, you can make it sound.

🔍 The EXB* display will depend on the type of option board.

Drumsample [0000: name...]

Indicates the High drumsample. The sample selected here will be sounded by velocities above the “Vel. SW L→H” value. (☞For details on each drumsample, refer to VNL.)

note When **ROM** is selected as the “Bank,” you can use the utility menu command “Select by Category” to select drumsamples by category (☞5.1–1d).

🔍 It is not possible to edit the category name of a drumsample, or to re-specify its category.

S.Ofs (Start Offset) [Off, On]

On (checked): The sample waveform will start playback from a location later than the beginning of the drumsample waveform. The location of the Start Offset is pre-determined for each drumsample. This sample is not valid for drumsamples which have no Start Offset.

Off (unchecked): Playback will start from the beginning of the drumsample waveform.

Rev (Reverse) [Off, On]

On (checked): The drumsample waveform will playback in “one-shot” reverse. The location at which the reverse playback will start and end is pre-determined for each drumsample.

🔍 If the drumsample is already preset for reverse playback or reverse loop playback, checking this setting will not change its playback direction.

🔍 This parameter will not change the playback direction of a sample for which “Rev (Reverse)” is checked.

Trans (Transpose) [-64...+63]

Adjusts the pitch in semitone steps. +12 is one octave up, and -12 is one octave down.

Tune [-99...+99]

Adjusts the pitch in one-cent steps. -99 is a semitone lower, and +99 is a semitone higher.

Fc (Cutoff) [-64...+63]

Adjusts the cutoff frequency of the filter. The cutoff frequency for each key is determined by adding this value to the filter “Frequency” (PROG 4.1–1b, 4.2–1b) of the program that uses this drum kit.

Reso (Resonance) [-64...+63]

Adjusts the filter resonance. The filter resonance for each key is determined by adding this value to the filter “Resonance” (PROG 4.1–1b, 4.2–1b) of the program that uses this drum kit. (When the “Type” (PROG 4.1–1a, 4.2–1a) is **Low Pass & High Pass**, there will be no resonance effect.)

At (Attack) [-64...+63]

Adjusts the attack time of the volume (Amplifier). The attack time for each key is determined by adding this value to the amp EG Attack Time of the program that uses this drum kit.

Dc (Decay) [-64...+63]

Adjusts the decay time of the volume (Amplifier). The decay time for each key is determined by adding this value to the amp EG Decay Time of the program that uses this drum kit.

■ 5.1–1c: Key-, Key+

Selects the key to which you will assign a drumsample (and its settings).

☞“Key” (5.1–1a)

■ 5.1–1d: UTILITY

For details on how to select the desired utility function, refer to “PROG 1.1–1c: UTILITY.”

Write Drum Kits

This command writes all drum kits 00 (A/B)–63 (User).

- ① Select “Write Drum Kits” to access the dialog box.
- ② To execute the Write command press the [F8] (“OK”) key. To cancel without executing press the [F7] (“Cancel”) key.

You can also use the [REC/WRITE] key to write the data in the same way as this command.

Press the [REC/WRITE] key to access the “Update Drum Kits” dialog box, and press the [F8] key to write the data.

🔍 **Drum kits 16 (C)–47 (D)** are for the drum kits of some of the separately sold EXB-PCM series options.

Rename Drum Kit

This command renames the selected drum kit. You can input a name of up to sixteen characters. (☞BG p.39)

Copy Drum Kit

This command copies the settings of another drum kit to the currently-edited drum kit. Drum kits 64 (GM)–72 (GM) cannot be edited, but you may copy them to another drum kit and then edit them.

- 1 Select “Copy Drum Kit” to access the dialog box.



- 2 Select the copy source drum kit (“From”).
- 3 To execute the Copy Drum Kit command press the [F8] (“OK”) key. To cancel without executing press the [F7] (“Cancel”) key.

Copy Key Setup

This command copies the settings of an individual key to another key. You can also copy settings from two or more contiguous keys at once.

- 1 Select “Copy Key Setup” to access the dialog box.



- 2 Specify the beginning of the range of keys to be copied (“From Key”).
- 3 Select the copy destination key (“To Key”).
If you selected multiple keys in “From Key,” they will be copied sequentially, starting at “To Key” and extending upward.
- 4 To execute the Copy Key Setup operation, press the [F8] (“OK”) key. To cancel without executing press the [F7] (“Cancel”) key.

Select by Category

If ROM is selected for “Bank,” you can select drumsamples by category.

All drumsamples are grouped into one of fifteen categories. For the procedure, refer to “Select by Category” (☞p.2)

- It is not possible to edit the name of a drumsample category or to change the assigned category of a drumsample.

5.1–2: Low (Low Sample)



5.1-2b

5.1–2a: Low (Low Sample)

Drumsample Bank

[ROM, EXB*, EXB*]

Specifies the bank of the Low drumsample (☞“Drum Sample Bank” 5.1-1b).

Drumsample

[0000: name...]

Selects the Low drumsample. This will be sounded by velocities lower than the value set for “Vel. SW L→H” (5.1-1a). (☞For details on each drumsample, refer to VNL.)

The drumsample can be selected using the utility menu command “Select by Category” (☞5.1-1d).

S.Ofs (Start Offset)

[Off, On]

Rev (Reverse)

[Off, On]

Trans (Transpose)

[-64...+63]

Tune

[-99...+99]

Fc (Cutoff)

[-64...+63]

Reso (Resonance)

[-64...+63]

At (Attack)

[-64...+63]

Dc (Decay)

[-64...+63]

☞“High Drum sample”(5.1-1b)

5.1–2b: UTILITY

☞“Write Drum Kits,” “Rename Drum Kit,” “Copy Drum Kit,” “Copy Key Setup,” “Select by Category” (5.1-1d)

5.1–3: Voice (Voice/Mixer)

For each key of a drum kit, you can set voice assign, pan, and effect routing etc.



5.1-3b

5.1–3a: Voice Assign Mode/Mixer

Voice Assign Mode:

Single Trig (Single Trigger)

[Off, On]

On (checked): Even when the same key (note) is played repeatedly, the previous note will be halted before the new note is begun, so that the notes will not overlap. Normally you will leave this unchecked.

Excl Group (Exclusive Group)

[Off, 001...127]

001-127: This allows you to group keys to which a drumsample is assigned. Keys to which the same group number is assigned will be treated as a single group, and will be played monophonically with last-note priority. For example you might assign closed and open hi-hat sounds to the same group so that two or more hi-hat sounds can not sound simultaneously.

Off: Keys will not be grouped. Normally you will set this Off.

Enable Note On (Note On Receive)

On (checked): Note-on messages will be received. Normally you will check this, but you can uncheck it if you do not want specific notes to sound.

Enable Note Off (Note Off Receive)

On (checked): Note-off messages will be received. Normally you will uncheck this. This parameter is valid when “Hold” (PROG 2.1–1b) is checked (**Hold On**). In the case of a drum program, you will normally select **Hold On**. In this case if “Enable Note Off” is **checked**, note-off messages will be received, and the sound will stop (the release segment of the EG will begin) when the key is released.

Mixer:

Pan [Rndm, L001...C064...R127]

Specifies the panning for each key. With a setting of **Rndm (Random)**, the panning of the drumsample will change randomly for each note-on.

BUS (Bus Select) [L/R, IFX1...5, 1, 2, 1/2, Off]

Specifies the bus to which each key will be sent.


For example you can send Snare sounds to **IFX1** and Kick sounds to **IFX2** so that insert effects are applied, and send the remaining sounds to **L/R** so that no insert effects are applied.

S1 (Send1 (to MFX1)) [000...127]

S2 (Send2 (to MFX2)) [000...127]

For each key, specify the send levels to master effects 1 and 2. These settings are valid when “BUS Select” (5.1–3a) is set to **L/R** or **Off**.

If “BUS Select” is set to **IFX1–5**, the send level to master effects 1 and 2 will be determined by the Program, Combination, Sequencer, or Song Play mode 7.2–1 Setup pages S1 (Send1 (MFX1)), “S2 (Send2 (MFX2))” which are located after the sound passes through IFX1, 2, 3, 4, or 5.

 Drum kits will sound using the settings of the program that is selected in Program mode. These settings are valid only if “Use DKit Setting” (PROG 5.1–1b) and “Use DKit Setting” (PROG 7.1–1a) are turned **checked**. Be aware that the results of editing a drum kit will not be reflected unless these settings have been made.

5.1–3b: UTILITY

☞ “Write Drum Kits,” “Rename Drum Kit,” “Copy Drum Kit,” “Copy Key Setup” (5.1–1d)

GLOBAL 6.1: Controller

6.1–1: Foot

Specify the polarity and function of a switch or pedal connected to the rear panel.



6.1–1a: Damper/Assignable Foot Switch, Pedal

Foot SW Assign [Off...Cue Repeat Control]

Select the function that will be controlled by a pedal switch (PS-1 option [sold separately]) connected to the rear panel ASSIGNABLE SWITCH jack (☞p.232 “Foot Switch Assign List”).

Foot Pedal Assign [Off...MFX Send 2(CC#91)]

Indicates the function that will be controlled by a foot volume pedal (XVP-10 or EXP-2 option [sold separately]) connected to the rear panel ASSIGNABLE PEDAL jack (☞p.233 “Foot Pedal Assign List”).

Damper Polarity [(-) KORG Standard, (+)]

Set this to match the polarity of the damper pedal connected to the rear panel DAMPER jack.

If a Korg DS-1H (sold separately) damper pedal is connected, the pedal switch polarity will be (↓), so select “(-) **KORG Standard**” for this setting. If you have connected a damper pedal with a positive (↑) polarity, select “(+)” for this setting. (↓ is open-type, ↑ is closed-type.) If the polarity does not match, operating the damper pedal will not produce the correct result. If no damper pedal is connected, set this to “(-) **KORG Standard**.”

Foot Switch Polarity [(-) KORG Standard, (+)]

Set this to match the polarity of the pedal switch connected to the rear panel ASSIGNABLE SWITCH jack.

If a Korg PS-1 (sold separately) pedal switch is connected, the pedal switch polarity will be (↓), so select “(-) **KORG Standard**” for this setting. If you have connected a pedal switch with a positive (↑) polarity, select “(+)” for this setting. (↓ is open-type, ↑ is closed-type.) If the polarity does not match, operating the pedal switch will not produce the correct result. If no pedal switch is connected, set this to “(-) **KORG Standard**.”

6.1–1b: UTILITY

☞ “Write Global Setting” (1.1–1d)

6.1-2: KARMA1

6.1-3: KARMA2

Here you can assign control change messages to the KARMA Real-time Controls knobs and keys.

When you operate the KARMA Real-time Controls knobs or keys, the assigned control change message will be transmitted from the MIDI OUT connector.

The assigned control change messages can also be input from an external MIDI device to the MIDI IN connectors to control the corresponding KARMA Real-time Controls knob or key.



6.1-2a: KARMA Real-time Controls

Knob1...Knob8 (Knob1...8 Assign) [Off...CC#95]

Assign a control change message to each KARMA Real-time Controls [1]–[8] knob.

6.1-2b: SW Assign

SW1/SW2 (SW1/SW2 Assign) [Off...CC#95]

Assign a control change message to the KARMA Real-time Controls [1] and [2] keys.

6.1-2c: UTILITY



☞ “Write Global Setting” (1.1-1d)

Reset KARMA Ctrls Assign

When this operation is executed, the MIDI control change message assignments you made for the KARMA Real-time Controls knobs and keys in 6.1-2: KARMA 1 and 6.1-3: KARMA2 will be reset to the default settings or Off.

- 1 Select “Reset KARMA Ctrls Assign” to access the dialog box.



- 2 Select the desired reset method in the “To” field. **Default Setting** will reset the settings to their default values. **All Off** will reset all settings to Off. Execute this operation with **Default Setting** if you wish to record KARMA Real-time Controls knob and key operations in Sequencer mode, or if you wish to use the KARMA Real-time Controls knobs and keys to control external MIDI devices. Although it is possible to assign the KARMA Real-time Controls keys and knobs to any desired MIDI control change message, you will normally use the **Default Settings**.
- 3 To execute the reset, press the [F8] (“OK”) key. To cancel without executing, press the [F7] (“Cancel”) key.

Default Setting

KARMA REAL-TIME CONTROLS

Controller	Control change message
Knob[1]	MIDI CC#22
Knob[2]	MIDI CC#23
Knob[3]	MIDI CC#24
Knob[4]	MIDI CC#25
Knob[5]	MIDI CC#26
Knob[6]	MIDI CC#27
Knob[7]	MIDI CC#28
Knob[8]	MIDI CC#29
SW1	MIDI CC#85
SW2	MIDI CC#86
ON/OFF	MIDI CC#14
SCENE	MIDI CC#30
LATCH	MIDI CC#31

CHORD TRIGGER

Controller	Control change message
CHORD1	MIDI CC#87
CHORD2	MIDI CC#88
CHORD3	MIDI CC#89
CHORD4	MIDI CC#90

6.1-3a: KARMA Real-time Controls

ON/OFF (ON/OFF Assign) [Off...CC#95]

Assigns a control change message to the KARMA Real-time Controls [ON/OFF] key.

SCENE (SCENE Assign) [Off...CC#95]

Assigns a control change message to the KARMA Real-time Controls [SCENE] key.

LATCH (LATCH Assign) [Off...CC#95]

Assigns a control change message to the KARMA Real-time Controls [LATCH] key.

6.1-2b: Chord Trigger

Chord1...4 (Chord1...4 Assign) [Off...CC#95]

Assigns control change messages to the KARMA Real-time Controls CHORD TRIGGER [1]-[4] keys.



6. Disk mode

In Disk mode you can save and load internal memory data to and from a floppy disk.

You can also make various setting related to saving and loading.

The KARMA can use MS-DOS formatted 3.5 inch 2HD floppy disks. After a floppy disk has been formatted on this instrument, a 2HD disk will have a capacity of 1.44 MB (18 sectors/track).

Files, directories, and icons

The KARMA manages data on disks and other media in a hierarchical manner, using files and directories. The contents of a file (whether it is a file or a directory) are indicated not only by the name but also graphically by an icon. Files and directories have differently shaped icons.

On this instrument, files and directories that can be recognized by MS-DOS (i.e., read by an MS-DOS computer) are referred to as DOS files and DOS directories.

Various types of DOS files are distinguished by the extension that is added to the end of the filename.

In the case of a DOS file with an extension other than listed below, selecting "Load selected" to access the dialog box will cause the file to be considered to be a Standard MIDI File (SMF). However, non-SMF files cannot be loaded.

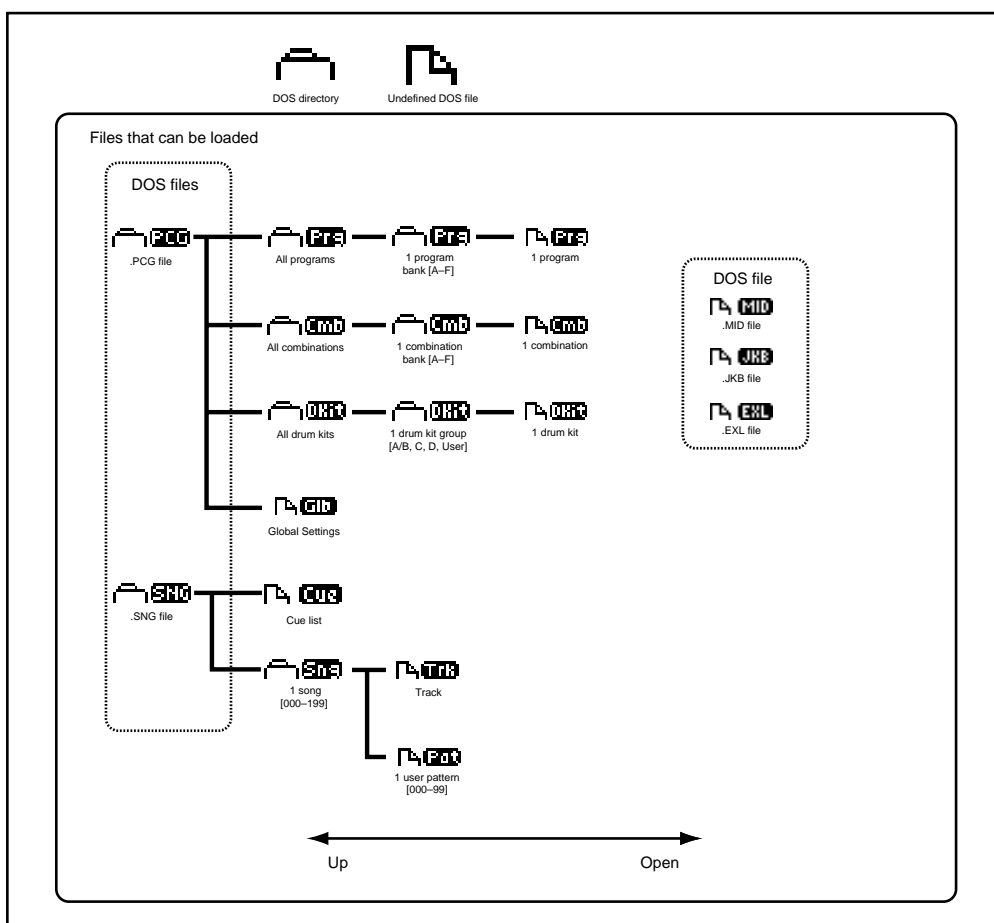
When you save a file on this instrument, one of these file-name extensions will automatically be added as appropriate for the type of data.

⚠ If you change the filename extension of the following files, they will be handled as undefined files when you attempt to load them again; they will not be loaded correctly.

Extension	Type
.PCG	Program, combination, drum kit, global settings
.SNG	Song, cue list
.JKB	Jukebox list
.MID	Standard MIDI File (SMF)
.EXL	MIDI exclusive data

⚠ Use Song Play mode to load or save a .JKB file. This cannot be performed in Disk mode.

Files handled by this instrument have the following structure. Since .PCG and .SNG files can be opened to divide their contents, they are displayed as directory icons.



DISK PAGE MENU

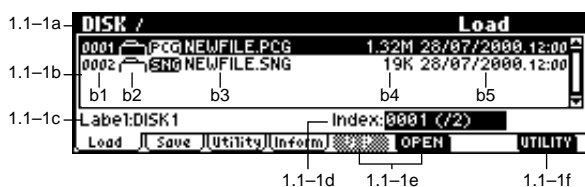
In Disk mode you can press the [F1]–[F4] keys located below the tab to select the desired page.

Load	Load the contents of the selected file or directory into internal memory. (☞p.150)
Save	Save various from internal memory to disk. (☞p.153)
Utility	Rename, copy, or delete a selected disk or file, create a new directory, or specify the date and time. (☞p.155)
Media Information	View information on the floppy disk. (☞p.157)

1.1-1: Load

Here you can load a selected file or directory into internal memory.

Use the [F5] (“UP”) key and [F6] (“OPEN”) key to select the desired file or directory. Then use the Utility “Load selected” (1.1-1f) to select and load the data.



1.1-1a: Current directory

The directory currently selected for processing is referred to as the “current directory.”

The LCD screen will show the full path name of the directory. A slash “/” character is used as the delimiter between directory levels. To change the current directory, use the [F5] (“UP”) key and [F6] (“OPEN”) key.

1.1-1b: Directory window

Directory window

File information for the current directory is shown here. You can select a file or directory in this window.

b1: File index

This displays the file index.

b2: File/icon

The icon indicates the type of file. For details on icons, ☞p.149.

b3: File name

This is the name of the file (DOS file).

b4: Size

This is the size of the file (in bytes).

b5: Save date and time

This shows the date and time when the file was saved. From the left, this is shown as day, month, year, hours and minutes.

However since this instrument does not contain an internal calendar or clock, you must use “Set Date/Time” (1.1-3a) to set the date and time before saving the file.

1.1-1c: Label

This displays the volume label of the floppy disk when loading or saving.

When you insert a floppy disk and press the [DISK] key or a function key to make this instrument recognize the disk, its volume label will be displayed. If there is no volume label, the display will indicate “no label.” If the disk is not formatted, the display will indicate “Unformatted.”

1.1-1d: File select

The file/directory selected in the directory window will be shown in “Index:” The total number of files in the current directory is shown in “(/).”

1.1-1e: UP, OPEN

Indicates the current directory.

Use the [F5] (“UP”) key and [F6] (“OPEN”) key to select the current directory.

UP : Move to the higher directory.

OPEN : Move to a lower directory.

1.1-1f: UTILITY



For details on how to select the desired utility function, refer to “PROG 1.1-1c: UTILITY.”

Hide unknown file

Select “Hide unknown file” in the utility menu and press the [F8] key. A check mark will appear at the left of “Hide unknown file.” With this setting, undefined files will not be displayed in the directory window. However, this is effective only if the current directory is a DOS directory.

Load selected

This command loads into internal memory the file or directory that was selected in the “directory window” (1.1-1b). When you choose “Load Selected” from the Utility menu, a dialog box will appear. The dialog box will differ depending on the type of file to be loaded.

1) Load .PCG: selected icon 

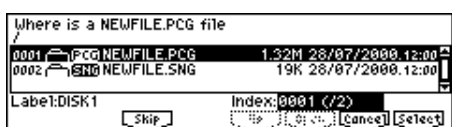
All data in the .PCG file will be loaded.



- ① Use the "Load ***** .SNG too" check boxes to select the .SNG file.
If you check "Load ***** .SNG too," the file with an identical name to the .PCG file and an extension of .SNG will also be loaded.
- ② To load the data, press the [F8] ("OK") key. To cancel without loading, press the [F7] ("Cancel") key.

If the file you wish to load cannot be found, or when loading a file that was saved in parts


If the file that you need to load is not found in the current directory or in a directory below it, a dialog box (Where is a ...) shown below will appear.



This will appear in the following cases.

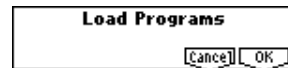
- When loading a .PCG file that was split across two or more volumes of media, when the first volume has been loaded and the second disk etc. is now required.
- When loading a .PCG file and also simultaneously loading a .SNG file, if the identically-named .SNG file are not found in the current directory after loading the .PCG file.

If this dialog box appears, take the following action.

- ① Select the directory that contains the file specified by "Where is a ..."
If the specified file is on another disk, exchange disks, use the [DISK] key or a function key etc. to make this instrument recognize the disk, and then select the directory.
-  It is not possible to open .PCG or .SNG files in the "Where is a ..." dialog box. The [F6] ("OPEN") key cannot be used for .PCG or .SNG files.
- ② Press the [F8] ("Select") key to load the second disk. To halt the loading procedure, press [F7] ("Cancel") key. As directed by the dialog box, press the [F8] ("OK") key to halt the loading procedure.
Alternatively, if you wish to skip the specified file and load the next file, press [F3] ("Skip") key.
Except for special cases such as when the disk containing the specified file is damaged or cannot be found, press [F8] ("Select") key to continue loading.

2) Load Programs: selected icon 

All program data from a .PCG file will be loaded.




- ① To load the data, press the [F8] ("OK") key. To cancel without loading, press the [F7] ("Cancel") key.

3) Load Program Bank [A...F]: selected icon 

All program data of the selected bank will be loaded into the bank you specify.



- ① In "To," select the loading destination bank.
-  Bank F program data can be loaded only into bank F. If you select bank A...F, it will not be possible to select bank F in "To."
- ② To load the data, press the [F8] ("OK") key. To cancel without loading, press the [F7] ("Cancel") key.

4) Load a Program: selected icon 

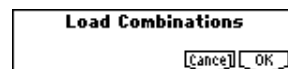
Data for the selected program will be loaded into the program bank/number you specify.



- ① If you wish to load a program other than the one already selected, use "From" to select the program that you wish to load.
- ② In "To," select the bank and program into which the data will be loaded.
Data for one bank F program can be loaded only into bank F. If bank A...E is selected in "From," bank F cannot be selected in "To."
- ③ To load the data, press the [F8] ("OK") key. To cancel without loading, press the [F7] ("Cancel") key.

5) Load Combinations: selected icon 

All combinations in the .PCG file will be loaded.



- ① To load the data, press the [F8] ("OK") key. To cancel without loading, press the [F7] ("Cancel") key.

6) Load Combination Bank [A...F]: selected icon 

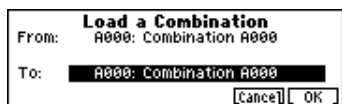
All combinations in the selected bank will be loaded into the bank you specify.



- ① In "To," specify the loading destination bank.
- ② To load the data, press the [F8] ("OK") key. To cancel without loading, press the [F7] ("Cancel") key.

7) Load a Combination: selected icon 

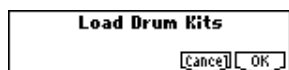
The combination you select will be loaded into the loading destination combination bank/number you specify.



- ① If desired, use "From" to re-select the combination to be loaded.
- ② In "To," select the bank and combination into which the data will be loaded.
- ③ To load the data, press the [F8] ("OK") key. To cancel without loading, press the [F7] ("Cancel") key.

8) Load Drum Kits: selected icon 

All drum kits in the .PCG file will be loaded.



- ① To load the data, press the [F8] ("OK") key. To cancel without loading, press the [F7] ("Cancel") key.

9) Load Drum Kit [00-15(A/B),16-31(C, 32...47(D), 48...63(User)]:

selected icon 

All drum kit data of the selected drum kit block will be loaded into the drum kit block you specify as the loading destination.



- ① In "To," select the drum kit block into which the data will be loaded.
- ② To load the data, press the [F8] ("OK") key. To cancel without loading, press the [F7] ("Cancel") key.

10) Load a Drum Kit: selected icon 

The selected drum kit will be loaded into the drum kit number you specify as the loading destination.



- ① If desired, use "From" to re-select the drum kit to be loaded.
- ② In "To," select the loading destination drum kit.
- ③ To load the data, press the [F8] ("OK") key. To cancel without loading, press the [F7] ("Cancel") key.

11) Load Global Setting: selected icon 

Global setting data in the .PCG file will be loaded.



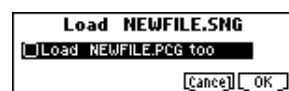
- ⚠ This includes Global mode parameters other than drum kits. Memory protect and LCD screen contrast settings will not be loaded.

- ① To load the data, press the [F8] ("OK") key. To cancel without loading, press the [F7] ("Cancel") key.

12) Load .SNG: selected icon 

All data in the .SNG file will be loaded.

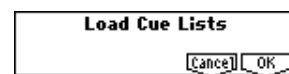
If the current directory contains a .PCG file of the identical filename, the "Load *****.PCG too" check box will appear, and you can select whether to load the .PCG file as well.



- ① If a .PCG file of the same name exists in the current directory, you can select the "Load *****.PCG too" check boxes.
- ② To load the data, press the [F8] ("OK") key. To cancel without loading, press the [F7] ("Cancel") key.

13) Load Cue Lists: selected icon 

The cue list data in the .SNG file will be loaded.



- ① To load the data, press the [F8] ("OK") key. To cancel without loading, press the [F7] ("Cancel") key.

14) Load a Song: selected icon 

Data for the selected song will be loaded into the song number you specified as the load destination.



15) Load tracks: selected icon 

The selected Track file will be loaded into the song you specify as the loading destination. However, it is not possible to specify an uncreated song as the loading destination.



- ① In "To," specify the loading destination song.
- ② To load the data, press the [F8] ("OK") key. To cancel without loading, press the [F7] ("Cancel") key.

16) Load Pattern Data: selected icon 

The selected user pattern will be loaded into a user pattern of the selected loading destination song. However, it is not possible to specify an uncreated song as the loading destination.



- ① If you wish to load a user pattern other than the one already selected, use "From" to re-select the user pattern that you wish to load.
- ② In "To" and "Pattern," select the loading destination song and user pattern.
- ③ To load the data, press the [F8] ("OK") key. To cancel without loading, press the [F7] ("Cancel") key.

17) Load Standard MIDI File: selected icon 

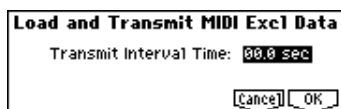
The selected Standard MIDI File will be loaded into the song number you select as the loading destination.



- ① Use "To" to select the loading destination song.
 - ② To load the data, press the [F8] ("OK") key. To cancel without loading, press the [F7] ("Cancel") key.
- 🔍 The program bank and program numbers loaded into the song will follow the "Bank Map (GLOBAL 1.1-2a) setting. If "Bank Map" is **KORG**, bank A will be selected for bank select 00.00 (MSB.LSB). If "Bank Map" is **GM(2)**, bank G will be selected.
 - 🔍 If you select an undefined file and choose "Load selected," the file will be assumed to be a Standard MIDI File, and the "Load Standard MIDI File" dialog box will appear. When you execute loading, the file will be loaded into the song that was specified as the loading destination. However if the file format is inappropriate, the operation will be invalid and an error message will be displayed.

18) Load and Transmit MIDI Exclusive Data: selected icon 

Load all data from the EXL file and transmit it from MIDI OUT.

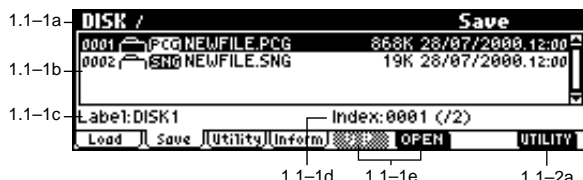


- ① If the .EXL file contains two or more exclusive data items, use "Transmit Interval Time" to specify the time interval that will be inserted between each item of exclusive data. If you are transmitting the data to another **KARMA**, the required time interval will depend on the type of data. After transmitting all combination data, you must allow an interval of approximately 2 seconds. For details refer to the Global mode section on Damp (GLOBAL 2.1-1c). For other MIDI devices, refer to their owner's manual.
- ② To load the data, press the [F8] ("OK") key. To cancel without loading, press the [F7] ("Cancel") key. The data size that can be transmitted will depend on the amount of unused song memory. The maximum is 1199,604 bytes.

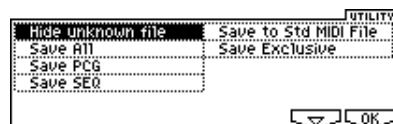
1.1-2: Save

Here you can save various data from internal memory to a floppy disk. Use the [F5] ("UP") key and [F6] ("OPEN") key to move to the desired directory (i.e., change the current directory), and then select the Utility menu command [F8]. When you execute a Save operation, the data will be saved in the same level of the disk hierarchy as the files that are displayed.

The date and time with which the saved file is stamped is specified by "Set Date/Time" (1.1-3a).



1.1-2a: UTILITY



☞ "Hide unknown file" (1.1-1f)

For details on how to select the desired utility function, refer to "PROG 1.1-1c: UTILITY."

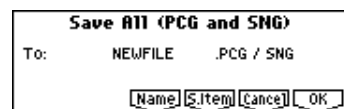
- 🔍 When saving combinations with "Save All," or "Save PCG," you should also try to save the programs used by each timbre (and the drum kits used by the programs) at the same time. Similarly when saving programs, you should also save the drum kit used by the program at the same time.

Save All (PCG and SNG)

Save all programs, combinations, drum kits, and global settings from internal memory to a .PCG file and the song to a .SNG file on disk.

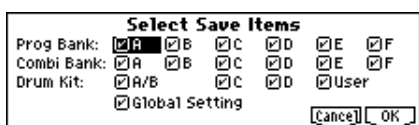
This is valid only when the current directory is a DOS directory.

- ① Select "Save All" to access the following dialog box.

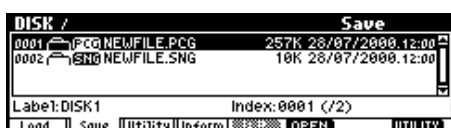


- ② Press the [F5] ("Name") key to access the text dialog box, and specify the filename. (BG p.39) For example if you specify NEWFILE and execute the Save operation, files named NEWFILE.PCG and NEWFILE.SNG will be saved to disk.

- ③ Press the [F6] (“S.Item”) key to access the “Select Save Items” dialog box, and select the data that you wish to save.
- Use the bank and Global Setting check boxes to select the data that you wish to save.
- Banks that are not check will not be saved.

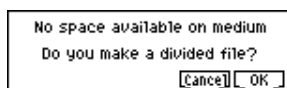


- ④ To save the data, press the [F8] (“OK”) key. If you decide not to save, press the [F7] (“Cancel”) key.
- When you execute the Save operation, the files will be created in the current directory.

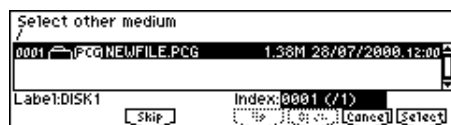


If the data does not fit on a single disk

If the .PCG file being saved by “Save All” or “Save PCG” does not fit on a single floppy disk, the “No space available on medium” dialog box will appear.



- ① Prepare two or more floppy disks to use for saving, and press the [F8] (“OK”) key.
- Saving will begin, and when the disk is full, the following dialog box will appear.



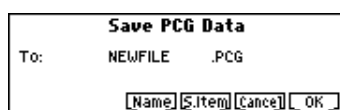
- ② Remove the floppy disk from the disk drive, insert another floppy disk, and press the [DISK] key or a function key to make this instrument recognize the disk.
- ③ Press the [F8] (“Select”) key to save the data to the second disk.
- If you press the [F7] (“Cancel”) key, saving will be aborted, and a dialog box will appear. If you wish to cancel the Save operation, press [F8] (“OK”) key.
- After “Save All” is executed, pressing the [F3] (“Skip”) key will skip the displayed file (.PCG) and save the next file.
- If executing “Save All,” saving will be completed.

Save PCG

This command saves all internal programs, combinations, drum kits, and global settings as a .PCG file.

This command is valid only when the current directory is a DOS directory.

- ① Select “Save PCG” to access the following dialog box.



- ② Use the [F5] (“Name”) key to move to the text dialog box, and specify the filename (BG p.39). For example if you specify NEWFILE and execute the save command, a file named NEWFILE.PCG will be saved to the disk.

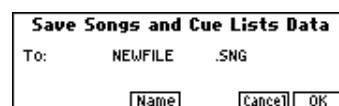
- ③ Press the [F6] (“S.Item”) key to move to the “Select Save Items” dialog box where you will specify the data to be saved, and check the check boxes for the banks that you wish to save. Banks whose check boxes are **unchecked** will not be saved.
- Save All (PCG and SNG): ③
- ④ To save the data, press the [F8] (“OK”) key. To cancel without saving, press the [F7] (“Cancel”) key.

Save SEQ (Songs and Cue Lists)

This command saves all songs and cue lists from the internal memory as a .SNG file.

This command is valid only when the current directory is a DOS directory.

- ① Select “Save SEQ” to access the following dialog box.



- ② Use the [F5] (“Name”) key to move to the text dialog box, and specify the filename. For example if you specify NEWFILE and execute the save command, a file named NEWFILE.SNG will be saved to the disk.
- ③ To save the data, press the [F8] (“OK”) key. To cancel without saving, press the [F7] (“Cancel”) key.

Save to Std MIDI File (Save Song as Standard MIDI File)

This command saves the selected song from internal memory to storage media as a .MID file (Standard MIDI File).

This command is valid only when the current directory is a DOS directory.

- ① Select “Save to Std MIDI File” to access the following dialog box.



- ② In “Song,” so the song that you wish to save.
- ③ Use the [F5] (“Name”) key to access the text dialog box, and specify the filename (BG p.39). By default, the first eight characters (uppercase) of the song name will be assigned.
- ④ In “Format,” select the Standard MIDI File format in which you wish to save.
- If you select 0, data such as time signature and tempo will be saved together with the event data in a single track.
- If you select 1, time signature and tempo etc. and event data will be saved in separate tracks.
- ⑤ To save the data, press the [F8] (“OK”) key. To cancel, press the [F7] (“Cancel”) key.
- The song data you save here can be played back on a device that supports Standard MIDI Files. However if you intend to playback the data on this instrument, we recommend that you use “Save SEQ” to save the data, since this will allow a higher degree of reproducibility.

Save Exclusive (Receive and Save MIDI Exclusive Data)

This command receives exclusive data, accumulates it in the unused portion of the internal memory, and saves the data to media as an .EXL file.

(The remaining amount of internal memory depends on how much data is used in Sequencer mode.)

This command is valid only when the current directory is a DOS directory.

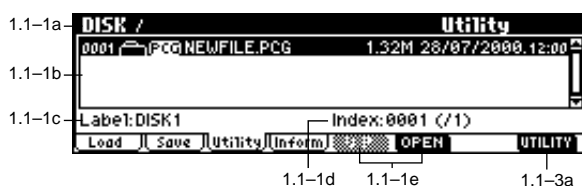
- When you select "Save Exclusive" from the Utility menu, this instrument will be ready to receive exclusive data. The following dialog box will appear.



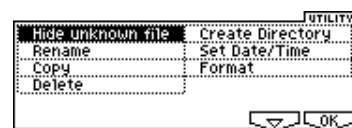
- Transmit the exclusive data that you wish to save to this instrument. While the data is being received, the display will indicate "Status=RECEIVING MIDI DATA." When reception ends, the size of the received data and the size of the remaining free area will be rewritten. The display will change to "Status=AWAITING MIDI DATA," and you can continue transmitting exclusive data to this instrument. During reception, the [F7] ("Cancel") key and the [F8] ("OK") key cannot be pressed.
- Press the [F5] ("Name") key to access the text dialog box, and specify the filename (see BG p.39).
- To save the data, press the [F8] ("OK") key. To cancel without saving, press the [F7] ("Cancel") key.

1.1-3: Utility

Here you can rename, copy, or delete the selected disk or file, create a new directory, and set the date and time. After selecting a disk or file, select the Utility menu [F8].



1.1-3a: UTILITY



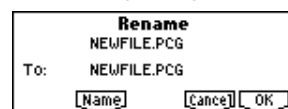
☞ "Hide unknown file" (1.1-1f)

For details on how to select the desired utility function, refer to "PROG 1.1-1c: UTILITY."

Rename

This command renames the selected file or directory. This command is valid only when a DOS file or a DOS directory is selected.

- Select "Rename" to access the following dialog box.

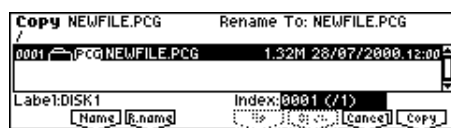


- Press the [F5] ("Name") key to access the text dialog box, and modify the name (see BG p.39).
- To rename the file or directory, press the [F8] ("OK") key. To cancel, press the [F7] ("Cancel") key.

Copy

This command copies the selected file or directory. This command is valid only when a DOS file or a DOS directory is selected.

- Select "Copy" to access the following dialog box.



In the upper left of the dialog box, "Copy" indicates the selected file and directory name.

If you wish to change the file or directory that will be copied, use the [F2] ("Name") key to move to the text dialog box, and specify the filename that you wish to copy (see BG p.39).

When you use the [F2] ("Name") key to access the text dialog box and specify the name of the file or directory to be copied, you can use "*" and "?" characters as wildcards. For example, if in the above example you specify **PRELOAD1.*** (instead of PRELOAD1.PCG), all filenames of PRELOAD1. with any filename extension will be copied at the same time: i.e., PRELOAD1.PCG, PRELOAD1.SNG, ...

[Example]

PRELOAD1.* : PRELOAD1.PCG, PRELOAD1.SNG, ...
PRELOAD?.PCG : PRELOAD1.PCG, PRELOAD2.PCG,
PRELOAD3.PCG, ...

- ▲ When wildcards are used, only files will be subject to copying. Directories will not be copied.
- ② Use the [F5] (“UP”) key and [F6] (“OPEN”) key to select the copy destination directory.
- ▲ It is not possible to open .PCG or .SNG files while you are selecting the copy destination directory. The [F6] (“OPEN”) key cannot be used for .PCG or .SNG files.
- ③ If you wish to copy the file or directory with a different name, use the [F3] (“R.Name”) key (in the lower line) to access the text dialog box, and specify the name with which the file or directory will be copied (☞BG p.39).
- ▲ If you are using wildcards to simultaneously copy multiple files, it is not possible to modify the filename.
- ④ To copy the data, press the [F8] (“OK”) key. To cancel without copying, press the [F7] (“Cancel”) key.
- ▲ It is not possible to copy between disks.

Delete

This command deletes the selected file or directory. If a directory is selected, it can be deleted only if no files exist within that directory. This command is valid only if a DOS file or directory is selected.

- ① Select “Delete” to access the following dialog box. “Delete” will indicate the name of the selected file or directory.



- ② If you wish to change the file or directory that is to be deleted, use the [F5] (“Name”) key to access the text dialog box, and specify the name of the file or directory that you wish to delete (☞BG p.39).
(Can use */? as Wildcard): When you use the [F5] (“Name”) key to access the text dialog box and specify the name of the file to be deleted, you can use the “*” or “?” characters as wildcards. This allows you to simultaneously delete multiple files with identical filenames and different extensions, or files whose names are partially identical (☞“Copy” (1.1–3a)).
- ▲ When wildcards are used, only files will be subject to deletion. Directories will not be deleted.
- ③ To delete the selected file or directory, press the [F8] (“OK”) key. To cancel without deleting, press the [F7] (“Cancel”) key.

Create Directory

This command creates a new directory within the current directory.

- ① Select “Create Directory” to access the following dialog box.



- ② Use the [F5] (“Name”) key to access the text dialog box, and specify the name of the new directory (☞BG p.39).
- ③ To create the directory, press the [F8] (“OK”) key. To cancel without creating the directory, press the [F7] (“Cancel”) key.

Set Date/Time

This command sets the date and time that will be used to time-stamp files that are saved.

- ① Select “Set Date/Time” to access the following dialog box.



- ② Set each parameter.
 - “Year” 1980–2079
 - “Month” 1–12
 - “Day” 1–31
 - “Hour” 0–23
 - “Minute” 0–59
 - “Second” 0–59 (only even-numbered second values will be assigned to a file)
- ③ To set the date and time, press the [F8] (“OK”) key. To cancel, press the [F7] (“Cancel”) key. The seconds (“Second”) will not be displayed in the directory window.

Format

This command formats the selected media, such as a floppy disk. The volume label (a name for the entire disk) you specify will be assigned to the disk. The volume label you assign here will be displayed in “Label” (1.1–1c). The volume label can be a maximum of eleven characters.

- ▲ When you format, all data saved on that disk will be erased. Be sure to double-check before you format.
- ▲ After formatting, it is not possible to press the [COMPARE] key to return to the previous state.
- ① To format a floppy disk, insert the floppy disk to be formatted into the floppy disk drive.
- ② Press the [DISK] key or a function key to make this instrument recognize the disk.
- ③ Select “Format” to access the following dialog box.



- ④ Press the [F5] (“Name”) key to move to the text dialog box, and specify the “Volume Label” (☞BG p.39).

When the dialog box appears, "Volume Label" will show the volume label that had been specified before formatting. If a disk that has no volume label or a non-DOS disk is inserted, this will indicate "NEW VOLUME."

- ⑤ Specify the initialization format. Normally you should use **Quick Format** to initialize the disk, and use **Full Format** if an error message of "Disk not Formatted" appears.

Quick Format: Selects this if the media has already been physically formatted. Since only the system area of the media need be formatted, this will require less time.

Full Format: Selects this when formatting media that has not been physically formatted.

- ⑥ To format the media, press the [F8] ("OK") key. To cancel without formatting, press the [F7] ("Cancel") key. After a floppy disk has been formatted by this instrument, a 2HD floppy will hold 1.44 MB (18 sectors/track) of data.

1.1-4: Media Information

DISK	Media Information
Vol. Label:	DISK1
Format:	DOS
Total Size:	1.4M
Free Size:	62K
Write Protect:	Off
Load Save Utility Inform	

1.1-4a

1.1-4a: Media Information

This displays information about the floppy disk.

Vol. Label (Volume Label):

The volume label of the media.

Format (Format Type):

The type of format. If not formatted, this will indicate "Unformatted."

Total Size:

The capacity of the disk (in bytes).

Free Size:

The free capacity of the disk (in bytes).

Write Protect:

The write protect status of the media. This will indicate "On" if protected, or "Off" if not protected.



7. Effect Guide

Overview

The effects section of KARMA consists of five-channel **Insert Effects**, two-channel **Master Effects**, a single-channel **Master EQ** (stereo, three-band EQ) and a **Mixer section** that controls the effect routings.

You can select any of **102** digital Insert Effects or **89** digital Master Effects, as listed below:

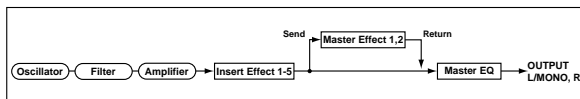
Classification of 102 effects

000–015	Filters and dynamics effect, such as EQ and compression
016–031	Pitch modulation and phase modulation effects, such as chorus and phaser
032–040	Other modulation and pitch-shifting effects, such as rotary speaker and pitch shifter
041–051	Early reflection and delay effects
052–057	Reverb effects
058–089	Mono effects and mono chain effects, in which two mono effects are internally connected in series
090–102	Double-size effects (insert only)

⚠ Effects **000–089** can be selected for IFX 1, 2, 3, 4, and 5, and MFX 1 and 2. Effects **090–102** are double-size effects and use twice the area, compared to other effects. They are selectable only for IFX 2, 3, and 4 positions.

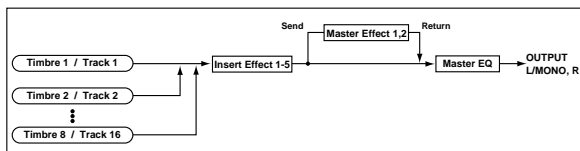
1. Effects in each mode

In **Program mode**, you can process sounds using **Insert Effects**. This is something like processing an oscillator (OSC) output sound using a filter and an amplifier. Then, you can apply a modulation and reverb effect or other **Master Effect** to the processed sound to add ambience and space. Finally, before the sound is output from the OUTPUT (MAIN) L/MONO, and R connectors, you can fine-tune the tonal quality using the stereo, three-band **Master EQ**. You can adjust these settings for each Program individually.



In **Combination mode**, **Sequencer mode**, and **Song Play mode**, you may process Program sounds for each timbre and track using the **Insert Effects**, add ambience and space to the entire sound using the **Master Effects**, and adjust the overall tonal quality using the **Master EQ**.

You can make these settings for each Combination in Combination mode, for each Song in Sequencer mode, and for each mode in Song Play mode individually.



2. Dynamic modulation (Dmod)

Dynamic modulation (Dmod) is a function that lets you use the controllers of this instrument or MIDI messages to control specific effect parameters*1, allowing realtime control while you play.

The BPM/MIDI Sync function*2 is provided as another way to control effect parameters. This allows parameters such as the LFO speed of modulation-type effects or the delay time of delay-type effects to be synchronized to the tempo of the KARMA modules or Sequencer.

For details on these two functions, refer to “Dynamic Modulation Source (Dmod)” (p.227).

*1 These effect parameters are marked with **D^{mod}** (p.168–).

*2 The effect parameters marked with **Sync** support this function (p.177–).

3. Effect I/O

To achieve the best tonal quality, signals sent to the Insert Effects and the Master Effects should be output at the maximum level without clipping. Also, use the “W/D” (wet/dry) parameter for the Insert Effects and the “Output Level” or “Rtn (Return1, 2)” parameter for the Master Effects to adjust the effect output level.

⚠ This instrument does not have an input level meter that monitors the input level of the effect. If the input level is insufficient, the S/N (signal to noise) ratio will decrease. If the input level is excessive, distortion may occur.

The following table shows the parameters related to the level settings:

Program mode

Input	OSC1/2 High, Low Level	(PROG 2.1)
	Filter1/2 Trim	(PROG 4.1, 4.2)
	Amp1/2 Level	(PROG 5.1, 5.2)
	OSC1/2 Send1/2	(PROG 7.1)
	Effect Trim parameter *1	(PROG 7.2, 7.3)
Output	Effect W/D parameter	(PROG 7.2, 7.3)
	Rtn1/2 (Return1, 2)	(PROG 7.3)

Combination mode

Input	Volume	(COMBI 1.1, 2.1)
	S1/2 (Send1/2)	(COMBI 7.1)
	Effect Trim parameter *1	(COMBI 7.2, 7.3)
Output	Effect W/D parameter	(COMBI 7.2, 7.3)
	Rtn1/2 (Return1, 2)	(COMBI 7.3)

Sequencer mode

Input	Volume	(SEQ 1.1)
	S1/2 (Send1/2)	(SEQ 7.1)
	Effect Trim parameter *1	(SEQ 7.2, 7.3)
Output	Effect W/D parameter	(SEQ 7.2, 7.3)
	Rtn1/2 (Return1. 2)	(SEQ 7.3)

Song Play mode

Input	Volume	(S.PLAY 1.1)
	S1/2 (Send1/2)	(S.PLAY 7.1)
	Effect Trim parameter *1	(S.PLAY 7.2, 7.3)
Output	Effect W/D parameter	(S.PLAY 7.2, 7.3)
	Rtn1/2 (Return1. 2)	(S.PLAY 7.3)

*1 Some effects may not have these parameters.

Insert Effects (IFX 1, 2, 3, 4, 5)

1. In/Out

Insert Effects (IFX 1, 2, 3, 4, 5) have a **stereo input** and a **stereo output**. If you select **Dry** (no effect) for the “W/D” parameter, the stereo input signal will be output in stereo without being processed by the effect. If you select **Wet** (effect applied), the processed signal will be output in one of the following ways:



If you select **000: No Effect**, stereo input signals are output in stereo without being processed.

The possible routing of effect inputs and outputs is indicated in the upper left corner of the block diagram.

These can be switched **on/off** by the “On/Off” settings in 7.2: Ed-Insert FX, Setup pages IFX1–5 in each mode. When **off**, the effect will be bypassed. In the same way as for **000: No Effect**, the stereo input sound will be output in stereo without modification.

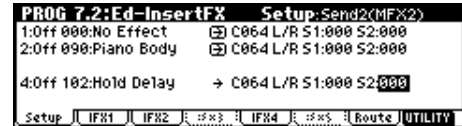
MIDI Separately from this “On/Off” setting, MIDI control change CC#92 can be received to turn all IFX1–5 effects off. A value of 0 is off, and a value of 1–127 restores the original setting. You can also use “FX SW” (GLOBAL 1.1–1b) to turn off IFX1–5 in the same way. This is controlled on the global MIDI channel “MIDI Channel” (GLOBAL 2.1–1a).

Double-size effects

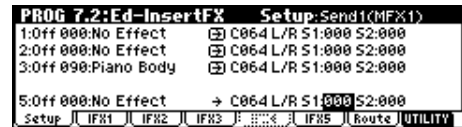
Double-size effects 090–102 use twice the area of what other effects use.

You can select them for **Insert Effects IFX2, IFX3, and IFX4**. Note that if you select a double-size effect for IFX2, you cannot use IFX3. In the same way, if you select a double-size effect for IFX3 or IFX4, you cannot use IFX4 or IFX5 respectively.

Selecting double-size effects for IFX2 and IFX4



Selecting a double-size effect for IFX3



2. Routing

You can use up to five channels (IFX 1, 2, 3, 4, and 5) for the **Insert Effects** in any mode.

2–1. Program mode

Use “**BUS Select**” (PROG 7.1–1a) to set the destination bus of the oscillator output.

L/R: The signal is not sent to the Insert Effects. Instead, it is sent to AUDIO OUTPUT (MAIN) L/MONO and R after the Master EQ.

IFX1–5: The signal is sent to Insert Effects IFX 1, 2, 3, 4, 5.

1, 2, 1/2: The signal is sent to AUDIO OUTPUT (INDIVIDUAL) 1, 2 (see p.166 “Individual Outputs”). The signal is not sent to the Insert Effects, Master Effects, and or Master EQ.

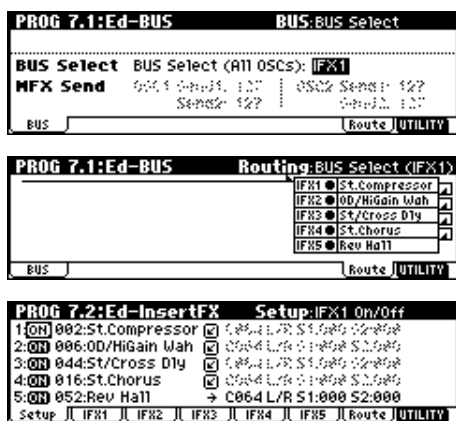
Off: The signal is not sent to AUDIO OUTPUT (MAIN) L/MONO, R, (INDIVIDUAL) 1 or 2. (After the Master Effects, the signal is output to AUDIO OUTPUT (MAIN).) Select this option if you connect the Insert Effects with the Master Effects in series, with the send level specified by “MFX1 Send1” and “MFX2 Send2.”

Use **MFX1 Send “Send1”** and “**Send2**” (PROG 7.1–1a) to specify the send level for the Master Effects. This setting is effective if “**BUS Select**” (PROG 7.1–1a) is set to **L/R** or **Off**. If “**BUS Select**” is set to **IFX1–5**, use “**S1 (Send1(MFX1))**” and “**S2 (Send2(MFX2))**” (PROG 7.2–1) for the post-IFX signal (see “3. Mixer”).

MIDI Send Level 1 can be controlled by MIDI Control Change CC#93, and Send Level 2 can be controlled by MIDI Control Change CC#91. At this time, the actual send level is determined by multiplying the Send Level 1 or 2 value of the oscillator with the Send Level 1 or 2 value received via MIDI.

If you wish to connect IFX in series, make “Chain” (PROG 7.2–1a) settings. If you set “Chain” of IFX1 to , the output of IFX1 will be sent to the input of IFX2. When effects are connected in series, the “Pan (CC#8),” “BUS Select,” “S1 (Send 1 (MFX1)),” and “S2 (Send 2 (MFX2))” following the last IFX will be used (see “3. Mixer”).

In the example shown in the following illustration, the output of oscillator 1 and 2 is sent to IFX1. By setting all “Chain” settings to , IFX1→IFX2→IFX3→IFX4→IFX5 are connected in series. The “Pan (CC#8),” “BUS Select,” “S1 (Send 1 (MFX1)),” and “S2 (Send 2 (MFX2))” settings following the IFX5 will be used.



— Settings for drum programs —

If you have selected “Drums” for “Oscillator Mode” (PROG 2.1–1a) of a Program, the “Use DKit Setting” box (PROG 7.1–1b) becomes available. If you check this box, “BUS Select” (GLOBAL 5.1–3a) for each key of the selected DrumKit becomes effective. For example, you can send a snare sound to IFX1 to apply the Gate effect, a kick sound to IFX2 to apply EQ, and other sounds to AUDIO OUTPUT (MAIN) L/MONO and R without applying any Insert Effects. If you de-select the box, all drum instrument outputs are sent to the bus specified by “BUS Select” (PROG 7.2–1a). You may apply any Insert Effects to all drum instruments, regardless of the DrumKit settings.

2-2. Combination, Sequencer, and Song Play mode

Use “BUS Select” (COMBI 7.1–1a, SEQ 7.1–1(2a), S.PLAY 7.1 (2a)) for timbres (Combination) and tracks (Sequencer, Song Play) to select an Insert Effect to apply to the corresponding timbres and tracks. You can route multiple timbres and tracks to a single Insert Effect.

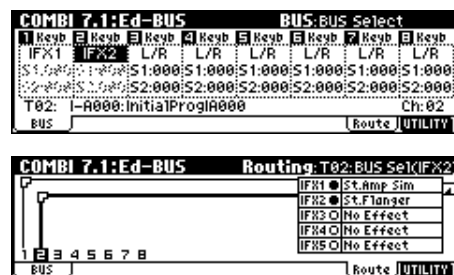
As with Program mode, select L/R, IFX1–5, 1, 2, 1/2, or Off for each timbre and track.

“S1 (Send1(MFX1)),” “S2 (Send2(MFX2))” become available if “BUS Select” has been set to L/R or Off.

If IFX1–5 is selected, use “S1 (Send1(MFX1))” and “S2 (Send2(MFX2))” for the post-IFX signal (see “3. Mixer”).

MIDI Send level 1 is controlled by MIDI control change CC#93, and send level 2 by MIDI control change CC#91. At this time, the actual send level will be the send level 1 or 2 of the program oscillator used by the timbre/track multiplied by the send level 1 or 2 that is set via MIDI. (“Send Level” see p.162)

The following figure shows an example of Combination mode. The Timbre 1 output is sent to IFX1 and the Timbre 2 output is sent to IFX2 according to the “BUS Select” setting. Other timbres are sent to L/R. The output signal passes through the Master EQ, then goes to AUDIO OUTPUT (MAIN) L/MONO and R. It is not routed to the Insert Effects.



The following illustration shows the IFX1 “Chain” set to so that the output of IFX1 will be sent to IFX2.

“IFX1: 001: St. Amp Sim” and “IFX2: 020: St. Flanger” are inserted to Timbre 1. “IFX2: 020: St. Flanger” is inserted to Timbre 2. The figure above (Routing page) shows these settings. (In this example, IFX 3, 4, and 5 are not being used.)

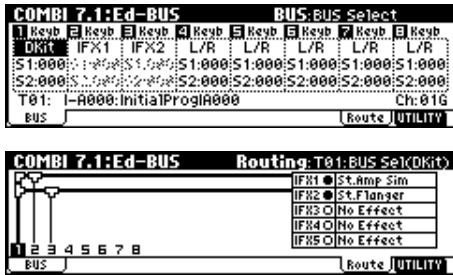


— Settings for drum Programs —

If a drum Program (“OSC Mode” Drums) is selected for timbres in Combination mode and for tracks in Sequencer mode and Song Play mode, you can select “DKit” for “BUS Select.” If you select “DKit,” the “BUS Select” (GLOBAL 5.1–3a) settings for each key become effective, and each drum instrument sound will be routed to the corresponding buses (e.g.: the snare sound is sent to IFX1, kick sound to IFX2, and other sounds to L/MON and R). If you select anything other than DKit, you may apply any Insert Effects to all drum instruments, regardless of the DrumKit settings.

If “BUS Select” is set to DKit, you will be able to select the Utility “DKit IFX Patch.” This temporarily patches the “BUS Select” settings for each key to temporarily change the connections to the insert effects. For example, if you have made settings for the keys of the drum kit so that snare-type sounds are sent to IFX1 and kick-type sounds are sent to IFX2, but IFX 1 and 2 are being used by other timbre/track programs, you can change the bus send destinations from IFX1 to IFX3 and from IFX2 to IFX4 for each key of the drum kit. (In this case, the snare sounds will be sent to IFX3 and the kick sounds will be sent to IFX4.) Patching is possible only for drum kit keys whose “BUS Select” has been set to IFX1–5. The setting status can also be verified in the Routing page. After setting “DKit IFX Patch,” press the [F8] (“OK”) key to execute. To return to the original settings of the drum kit, select IFX1→IFX1, IFX2→IFX2, IFX3→IFX3, IFX4→IFX4, IFX5→IFX5.

In the following example, Drum Program is assigned to Timbre 1, and normal Programs are assigned to Timbres 2 and 3. “BUS Select” is set to DKit for Timbre 1, IFX1 for Timbre 2, and IFX2 for Timbre 3. With Timbre 1, the “BUS Select” (GLOBAL 5.1–3a) for DrumKit setting becomes effective.

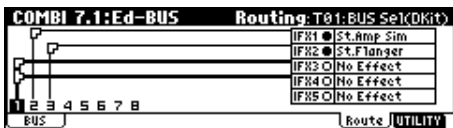


For example, if the snare-type sounds are set to IFX1 and the kick-type sounds are set to IFX2, and you wish to use different effects than timbres 2 and 3 as the drum program effects, you can use “DrumKit IFX Patch.” Select “DKit IFX Patch” from the Utility, and temporarily send the drum kit IFX1 to IFX3 and IFX2 to IFX4. When you execute the command, snare sounds will be sent to IFX3 and kick sounds to IFX4 so that these effects can be applied.

DrumKit IFX Patch dialog

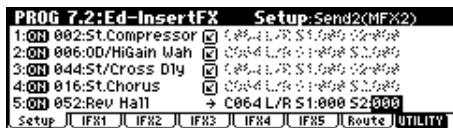


After setting the parameters



3. Mixer

For each mode, use 7.2: Ed-InsertFX (or Insert FX) Setup page parameters “Pan (CC#8),” “BUS Select,” “S1 (Send 1 (MFX1)),” and “S2 (Send 2 (MFX2))” to specify the pan, bus select, and the send levels to master effects MFX1 and MFX2 for the signals that have passed through the insert effects. If you have set “Chain” to to connect insert effects in series, the parameters listed above will be applied after the signal has passed through the last insert effect.

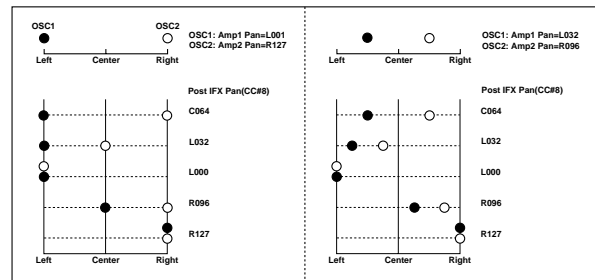


3-1. Pan (CC#8)

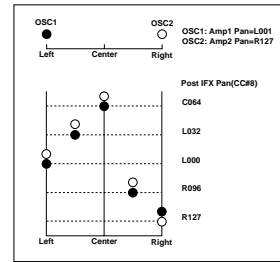
Specifies the pan after passing through the insert effect. If the insert effect is a **Stereo In-Stereo Out** type (≡“In/Out”), setting this parameter to C064 will allow the “Pan” settings of the oscillator (PROG 5.1-1, PROG 5.2-1), timbre (COMBI 1.1-3, 2.1-2), track (SEQ 1.1-4/5, S.PLAY 1.1-4/5) to be used.

If the insert effect is a **Mono In-Stereo Out** or **Mono In-Mono Out** type (≡“In/Out”), the “Pan” of the oscillator, timbre, track, or audio input (see above) will be ignored, and the sound will always be panned to the center. In this case, the “Pan (CC#8)” (7.2-1) that follows the insert effect will determine the final panning. L001 is far left and R127 is far right.

Insert Effect = Stereo In - Stereo Out



Insert Effect = Mono In - Stereo Out
Mono In - Mono Out



MIDI You can control these parameters via MIDI Control Change CC#8.

3-2. BUS Select

This parameter enables you to specify the destination bus for the post-IFX signals. “L/R” is a common setting to send signals to the Master EQ before they are routed to the OUTPUT L/R outputs. Select 1, 2 or 1/2 to route the signals to AUDIO OUTPUT (INDIVIDUAL) 1 or 2 (≡“Individual Output”). Select “Off” so that no signals will be output to L/MONO, R, 1 or 2. In this case, the signals are routed from the Master Effects to AUDIO OUTPUT (MAIN). This setting is used when you are connecting the Insert Effects with the Master Effects in series using “S1 (Send1(MFX1))” and S2 (Send2(MFX2)).”

3-3. Send level

These parameters enable you to set the send level of the signals routed to Master Effects MFX1 and MFX2. These settings are effective only when “BUS Select” is set to L/R or Off.

If you are not using insert effects, set the PROG 7.1-1 MFX Send “Send 1” and “Send 2” parameters, the COMBI 7.1-1 “S1 (Send 1 (MFX1))” and “S2 (Send 2 (MFX2))” parameters, the Sequencer mode SEQ 7.1-1/2, “S1 (Send1 (MFX1))” and “S2 (Send2 (MFX2))” parameters, or the Song Play mode S.PLAY 7.1-1/2 “S1 (Send1 (MFX1))” and “S2 (Send2 (MFX2))” to set the send levels to master effects MFX1 and MFX2.

MIDI Send Level 1 can be controlled by MIDI Control Change CC#93 and Send Level 2 can be controlled by MIDI Control Change CC#91

4. Controlling the Insert Effects via MIDI

Using the Dynamic Modulation (Dmod) function enables you to control all effect parameters in real-time during performance from the controllers of this instrument or a connected MIDI sequencer. You can also control the “Pan (CC#8),” “S1 (Send 1(MFX1)),” and “S2 (Send 2(MFX2))” of the post-IFX signals in the same way.

4-1. Program mode

You can control the parameters on MIDI Global channel (MIDI Channel” (GLOBAL 2.1-1a).

4-2. Combination mode

Use Setup page “Control Channel” to set up the control channels for IFX1, 2, 3, 4, and 5. Select an appropriate option from **Ch01-16**, **Gch**, and **All Rt**.

Ch01-16: Selects this option if you wish to control the parameters for each Insert Effect on different channels. The “*” mark appears on the right of the number of the channel routed to the corresponding Insert Effects.

Gch: Selects this option if you wish to control the parameters on MIDI Global channel “MIDI Channel” (GLOBAL 2.1-1a). This is a common setting.

All Rt.: Select this option to control the parameters on the channels (Cho1-16 that have a “*” mark) for the timbres that are routed to the corresponding Insert Effects.

4-3. Sequencer mode and Song Play mode

Use Setup page “Control Channel” to set up the control channels for IFX1, 2, 3, 4, and 5. Select an appropriate option from **Ch01-16** and **All Rt.**

Ch01-16: Selects this option if you wish to control the parameters for each Insert Effect on different channels. The “*” mark appears at the right of the channel number of the track that is routed to the corresponding Insert effects. This option is suitable if multiple tracks on different MIDI channels are sent to the Insert Effects and you wish to control the parameters using one of the tracks.

All Rt.: Selects t this option to control the parameters on the channel numbers (Cho1-16 that have a “*” mark) for the tracks that are routed to the corresponding Insert Effects.

“**All Rt.**” is a typical option. If you wish to control the parameters on a channel, select one from **Ch01-16**.

Master Effects (MFX1, 2)

1. In/Out

The I/Os of **Master Effects MFX1** and **MFX2** are **mono-in/stereo-out**. “Send Level 1” and “Send Level 2” determine the send level to the Master Effects (≡“Routing” and “Mixer”). Stereo signals will be combined to a mono signal automatically and sent to the effects.

The Master Effects do not output any **Dry** signals (signals that are not processed by the effects). Therefore, they output only **Wet** (signals that are processed by the effects) signals (set via the “W/D” of the “MFX1” and “MFX2” page). The output signals from the Master Effects are routed to the **L/R** bus with the output level specified by “Rtn (Return1, Return2).” These output signals are mixed with the output signals from the bus specified by **BUS** page **L/R**, or with the output signals from the bus specified by “**BUS Select**” (Setup page in each mode) **L/R**, then routed to the Master EQ.



Selecting “000: No Effect” will mute the output. The processed signal will be output in one of the following ways, according to the type of effects 001-089.



The possible routing of effect signal inputs and outputs is indicated in the upper left corner of the block diagram.

MFX1 and 2 are switched **on/off** by the “On/Off” parameter in the 7.3: Ed-MasterFX (or Master FX) Setup page “On/Off” of each mode. When **off** is selected, the output will be muted in the same way as for 000: No Effect.

MIDI Separately from this “On/Off” setting, MIDI control changes CC#94 (MFX1) and CC#95 (MFX2) can be received to turn each master effect off. A value of 0 is off, and a value of 1-127 restores the original setting. You can also use “FX SW” (GLOBAL 1.1-1b) to turn off MFX1 and MFX2 in the same way. This is controlled on the global MIDI channel “MIDI Channel” (GLOBAL 2.1-1a).

Double-size effects

You cannot select double-size effects for **Master Effects MFX1** and **MFX2**.

2. Routing

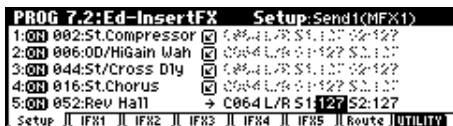
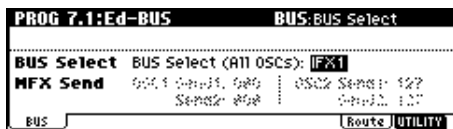
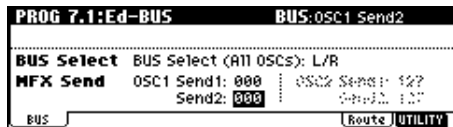
You can use up to two channels (MFX1 and 2) for the Master Effects in any mode. If you are not using any Insert Effects in any mode, the Master Effects send levels are determined by the “Send Level 1/2 (MFX2)” parameters specified independently for the oscillators (Program), timbres (Combination), tracks (Sequencer and Song Play). For example, you can apply substantial reverberation to a piano sound assigned to the timbre and tracks, a small amount of reverberation to the strings sound, and no reverberation to the bass sound. If you are using the Insert Effects, set the “S1 (Send1(MFX1))” and “S2 (Send2(MFX2))” parameters for the post-IFX signals.

2-1. Program mode

The PROG 7.1-1a MFX Send parameters “Send 1” and “Send 2” or the PROG 7.2-1a “S1 (Send 1 (MFX1))” and “S2 (Send 2 (MFX2))” parameters that follow IFX1-5 determine the send levels to the master effects.

The PROG 7.1-1a MFX Send “Send 1” and “Send 2” settings are used when “BUS Select” is set to **L/R** or **Off**. Each can be set for oscillator 1 and 2.

The PROG 7.2-1a “S1 (Send 1 (MFX1))” and “S2 (Send 2 (MFX2))” settings that follow **IFX1-5** are used when “BUS Select” is set to IFX1-5. If the insert effects are chained (connected in series), the “S1 (Send 1 (MFX1))” and “S2 (Send 2 (MFX2))” that follows the last-connected IFX will be used. If “BUS Select” is **1**, **2** or **1/2**, the oscillator will be directly output to AUDIO OUTPUT (INDIVIDUAL)1, 2 (≡“Individual Output”). Send levels 1/2 will be ignored, and the master effects will not be applied.



MIDI Send Level 1 can be controlled by MIDI Control Change CC#93 and Send Level 2 can be controlled by MIDI Control Change CC#91 on MIDI Global channel “MIDI Channel” (GLOBAL 2.1-1a). At this time, the actual send level uses the value of the Send 1 and 2 settings for Oscillators 1 and 2, multiplied by the Send Level 1 and 2 values received via MIDI.

If the program “Oscillator Mode” (PROG 2.1-1a) is **Drums**, the “USE DKit Setting” (PROG 7.1-1b) will be used.

If this is **checked**, the setting for each key of the selected drum kit will be used. The drum instrument for a key whose drum kit “BUS (Bus Select)” (GLOBAL 5.1-3a) parameter is set to **L/R** or **Off** will use the “S1 (Send 1 (MFX1))” and “S2 (Send 2 (MFX2))” (GLOBAL 5.1-3a) settings. If **IFX1-5** is used, the “S1 (Send 1 (MFX1))” and “S2 (Send 2 (MFX2))” (PROG 7.2-1a) after passing through IFX1-5 will be used. If this is **not checked**, the “Send 1” and “Send 2” (PROG 7.1-1a, MFX Send) settings or the “S1 (Send 1 (MFX1))” and “S2 (Send 2 (MFX2))” (PROG 7.2-1a) settings after passing through IFX1-5 will be used for all drum instruments. (This is the same as when “Oscillator Mode” is **Single** or **Double**.)

2-2. Combination, Sequencer, Song Play mode

Use “S1 (Send 1 (MFX1))” and “S2 (Send 2 (MFX2))” (7.1-1(2)a) for timbres (Combination) and tracks (Sequencer, Song Play) to set the Send level for each timbre and track. As with Program mode, if “BUS Select” is set to **L/R** or **Off**, “S1 (Send 1 (MFX1))” and “S2 (Send 2 (MFX2))” become effective. In this case, the actual send level will be the setting of the program (PROG 7.1-1a) used by the timbre/track multiplied by the send level you specify here.

– Send level –

For example, if a Program’s “OSC1 Send1” is set to **127**, “Send2” set to **064**, “OSC2 Send1” set to **064**, “Send2” set to **127**, a Combination’s “Send1” set to **064**, and “Send2” set to **127**, the actual send levels of the combination are calculated as follows:

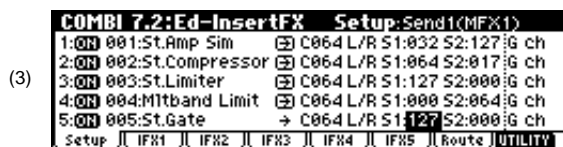
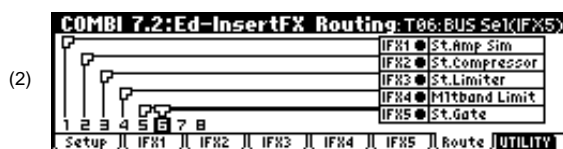
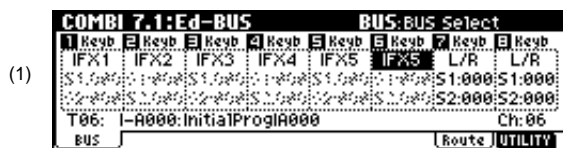
$$\begin{aligned} \text{OSC1 Send1} &= 127 (100\%) * 064 (50\%) = 064 (50\%) \\ \text{OSC1 Send2} &= 064 (50\%) * 127 (100\%) = 064 (50\%) \\ \text{OSC2 Send1} &= 064 (50\%) * 064 (50\%) = 032 (25\%) \\ \text{OSC2 Send2} &= 127 (100\%) * 127 (100\%) = 127 (100\%) \end{aligned}$$

If **IFX1-5** is selected for “BUS Select”, use the “S1 (Send1(MFX1))” and “S2 (Send2(MFX2))” parameters for the post-IFX signals.

If **1**, **2** or **1/2** is selected instead, these settings are ignored and the Master Effect is not applied.

MIDI Send Level 1 responds to MIDI Control Change CC#93, and Send2 Level responds to MIDI Control Change CC#91. If “Send1 (MFX1)” and “Send2(MFX2)” for each timbre/track are effective, the parameter will be controlled on the MIDI channels set for the corresponding timbres and tracks. If the “Send1(MFX1)” and “Send2(MFX2)” parameters for the post-IFX1-5 signals are effective, they can be controlled on the MIDI channels assigned to IFX1-5.

The following examples are in Combination mode. In figure (1), “BUS Select” is set so that Timbre 1 is routed to **IFX1**, Timbre 2 to **IFX2**, Timbre 3 to **IFX3**, Timbre 4 to **IFX4**, Timbres 5 and 6 to **IFX5**, and Timbres 7 and 8 to **L/R**. In this case, use “S1 (Send1(MFX1))” and “S2 (Send2(MFX2))” for the post-IFX1(001: **St. Amp Simulation**) signal in figure (3) to set the send level of the Timbre 1 routed to the Master Effect. (In this example they are set to **032** and **127**.) In the same way, use “S1 (Send1(MFX1))” and “S2 (Send2(MFX2))” for the post-IFX2, 3, and 4 signals to set the send levels of Timbres 2, 3, and 4, and use the “S1 (Send1(MFX1))” and “S2 (Send2(MFX2))” parameters for the post-IFX5 signal to set the send levels of Timbres 5 and 6. For Timbres 7 and 8, the settings of “S1 (Send1(MFX1))” and “S2 (Send2(MFX2))” in figure (1) will be effective. (At this time, the actual send levels use these Send 1 and 2 values multiplied by the Send1 and 2 settings for Program oscillators.)



If a drum program has been selected for a timbre in Combination mode or for a track in Sequencer or Song Play mode, you will be able to select **DKit** for the “BUS Select” parameter. If this is selected, the “BUS (BUS Select)” (GLOBAL 5.1–3a) settings for each individual key will be used, and will be sent to the bus for each drum instrument. In this case, the send level will be determined by multiplying the value of the “S1 (Send 1 (MFX1))” and “S2 (Send 2 (MFX2))” settings of each key in the drum kit by the value of the “S1 (Send 1 (MFX1))” and “S2 (Send 2 (MFX2))” settings that you make here. (For the drum instruments of keys whose drum kit “BUS (BUS Select)” parameter is set to **IFX1–5**, this is determined by “S1 (Send 1 (MFX1))” and “S2 (Send 2 (MFX2))” after the signal has passed through IFX1–5.) If **L/R** or **Off** is selected, the send levels specified by PROG 7.1–1a “OSC1 Send 1” and “Send 2” will be multiplied by the “S1 (Send 1 (MFX1))” and “S2 (Send 2 (MFX2))” settings that you make here. (This is the same as when “Oscillator Mode” is **Single** or **Double**.) If **IFX1–5** are selected, the “S1 (Send 1 (MFX1))” and “S2 (Send 2 (MFX2))” after the specified insert effect will be used. If **1**, **2** or **1/2** are selected, “S1 (Send 1 (MFX1))” and “S2 (Send 2 (MFX2))” will be ignored.

3. Mixer

The send levels determine the input levels of oscillators (Program), timbres (Combination), tracks (Sequencer and Song Play) that are routed to the Master Effects. The 7.3: Ed-MasterFX (or Master FX) in all modes enable you to set the output levels and Master EQ gain values, and connect the Master Effects in series (chain).

3–1. Rtn (Return1, Return2)

These specify the output levels from MFX1 and MFX2 respectively. The left value of the “W/D” specified for the effect selected in MFX 1 or 2 will be the output level of the master effect; e.g., 25% for **25:75**, 100% for **Wet**, and 0% for **Dry**. This level multiplied by the “Rtn (Return 1, Return 2)” value will be sent to the L/R bus, and will be mixed with the 7.1–1a “BUS Select” L/R or 7.2–1a “BUS Select” L/R output sound.

For example, with MFX1 “W/D” set to **50:50** (50%) and “Rtn (Return1)” set to **64** (50%), the resultant effect level will be 25%. The effect level is maximum (100%) when “W/D” is set to “Wet” and “Rtn (Return1)” is set to 127.

3–2. MFX Chain

Specifies the routing between MFX1 and MFX2.

The following figure indicates that the output from “MFX1:016: **Stereo Chorus**” is added to “MFX2: 052: **Reverb Hall**” input.



3–3. Chain Direction

If you have checked the “MFX Chain” box, you can specify the direction of the connection between MFX1 and MFX2 here.

3–4. Chain Signal

This parameter enables you to select signals routed between MFX1 and 2. If the chain direction (order) is from **MFX1** to **MFX2**, selecting **LR Mix** will cause the stereo L/R outputs from MFX1 to be mixed and input to MFX2. This setting is useful when you wish to serially connect delays that are panned to L and R (e.g., “043: **LCR Delay**”). Selecting **L Only** or **R Only** will cause only one channel of stereo outputs from MFX1 to be input to MFX2. This setting is suitable for a chain connection of a reverb effect and a modulation effect such as **016: St. Chorus**.

3–5. Chain Level

This parameter determines the level of signals routed from one MFX to the other MFX in a chain connection.

3–6. Master EQ Gain[dB]

These parameters are used to set the gain of the Low, Mid, and High stereo three-band EQ that is located right before AUDIO OUTPUT (MAIN) L/Mono and R. Low and High EQs are of the shelving type, and Mid EQ is a band type equalizer. These settings are linked with the Low, Mid, and High “Gain” parameters of the MEQ page. Use this MEQ page to set the center frequency, band width (for Mid), and dynamic modulation of the EQ bands.

4. Controlling the Master Effects via MIDI

You can use the Dynamic Modulation (Dmod) function to control all Master Effects parameters in real-time from this instrument's controllers or from an external MIDI sequencer.

In **Program mode**, the parameters are controlled on MIDI Global channel "MIDI Channel" (GLOBAL 2.1-1a).

In **Combination mode**, **Sequencer mode**, and **Song Play mode**, you can set the control channels for MFX1 and MFX2 using the Setup page "Control Channel" parameters of the "MFX1-2" tabs. Select the desired option from **Ch01-16**, and **Gch**.

Ch01-16: Select this option if you wish to control the parameters for each Master Effect on different channels.

Gch: Select this option if you wish to control the parameters on MIDI Global channel "MIDI Channel" (GLOBAL 2.1-1a). This is the normal setting.

Master EQ

The Master EQ (stereo, three-band EQ) is located right before AUDIO OUTPUT (MAIN) L/MONO, R. Low and High EQs are of the shelving type, and Mid EQ is a peaking type equalizer. You can control the Low Gain and High Gain parameters using the Dynamic Modulation function.

The Master EQ (stereo, three-band EQ) is applied to the signal input from the L/R bus. For more information on the parameters, see p.220.

Individual Outputs

This instrument is equipped with two individual AUDIO OUTPUTs (INDIVIDUALs). You can route the oscillator (Program), timbre (Combination), and track (Sequencer and Song Play) output or the post-IFX signals to these two individual outputs.

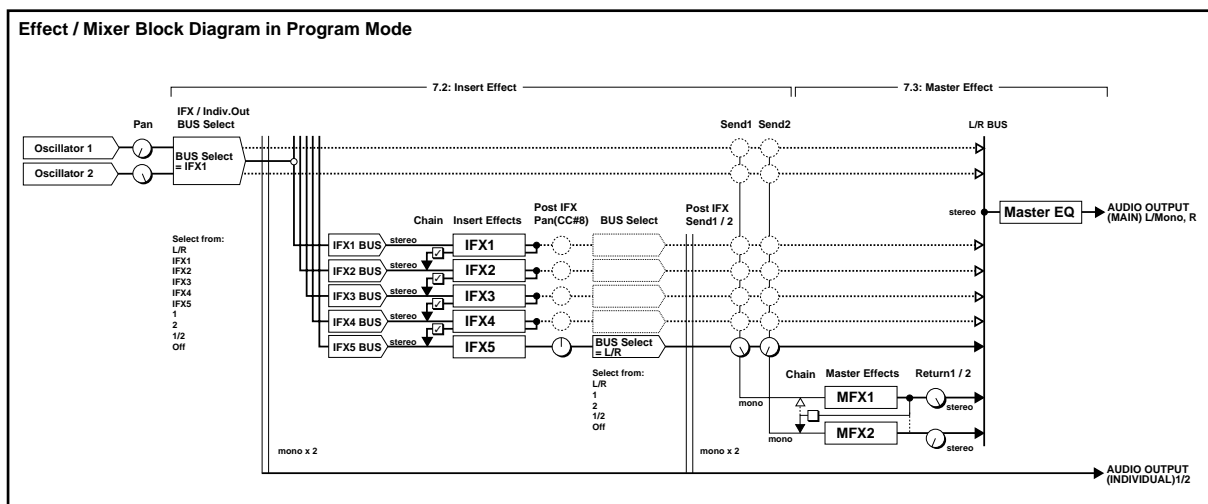
Use "BUS Select" (7.1-1a) in Program, Combination, Sequencer, or Song Play mode to route the oscillators (Program), timbres (Combination), or tracks (Sequencer and Song Play) to AUDIO OUTPUTs (INDIVIDUAL).

If you are using the Insert Effects, use "BUS Select" of the 7.2: Ed-InsertFX (or Insert FX), and Setup page to route the post-IFX signals.

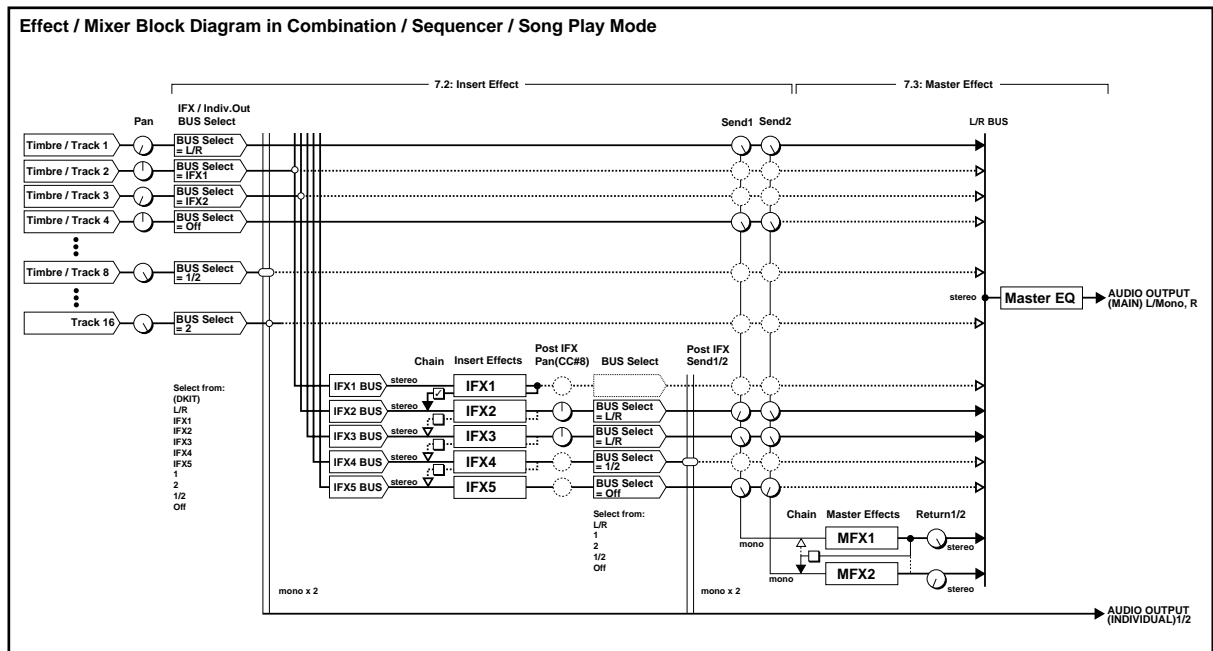
1, 2: Monaural signals are routed to AUDIO OUTPUTs (INDIVIDUAL).

1/2: Stereo signals are routed to AUDIO OUTPUTs (INDIVIDUAL).

Program mode



Combination, Sequencer, Song Play mode



Filter/Dynamic

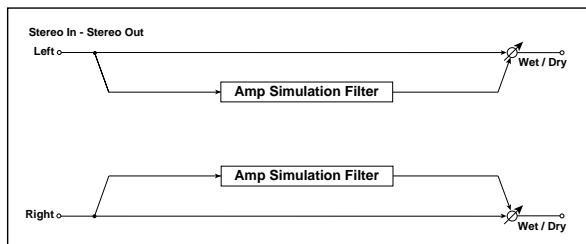
Filter and dynamics control effects

000: No Effect

Select this option when you do not wish to use any effects. The Insert Effect section outputs unprocessed signals and the Master Effect section mutes the output.

001: St.Amp Sim (Stereo Amp Simulation)

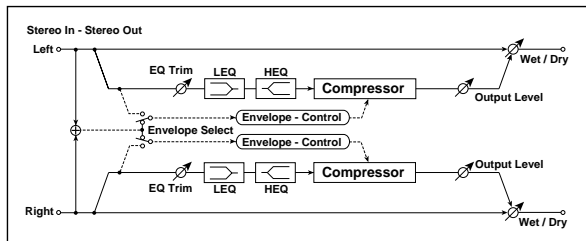
This effect simulates the frequency response characteristics of guitar amplifiers. It is also effective for organ and drum sounds.



a	Amplifier Type Select between three types of guitar amp simulators	SS, EL84, 6L6
b	W/D (Wet/Dry) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

002: St.Compressor (Stereo Compressor)

This effect compresses the input signal to regulate the level and give a "punchy" effect. It is useful for guitar, piano, and drum sounds. This is a stereo compressor. You can link left and right channels, or use each channel separately.



a	Envelope (Envelope Select) Determines whether the left and right channels are linked or used separately	L/R Mix, L/R Individually E³³
b	Sensitivity Sets the sensitivity	1...100 E³³
c	Attack Sets the attack level	1...100 E³³

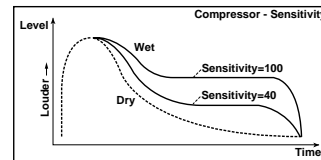
d	Level (Output Level) Sets the output level of the compressor	0...100 E³³, D^{mod}
	(Source) Selects the modulation source for the compressor output level	Off...Tempo
	(Amount) Sets the modulation amount of the compressor output level	-100...+100
e	Pre EQ Trim Sets the EQ input level	0...100
f	LoEQ (Pre Low EQ Gain) Sets the gain of Low EQ	-15.0...+15.0dB
	HiEQ (Pre High EQ Gain) Sets the gain of High EQ	-15.0...+15.0dB
g	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: Envelope

This parameter selects whether the left and right channels are linked to control both signals simultaneously, or whether each channel is controlled independently.

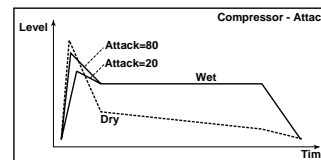
b: Sensitivity, d: Level

The "Sensitivity" parameter sets the sensitivity of the compressor. If this parameter is set to a higher value, lower level sounds will be boosted. With a higher Sensitivity, the overall volume level is higher. To adjust the final volume level, use the "Level" parameter.



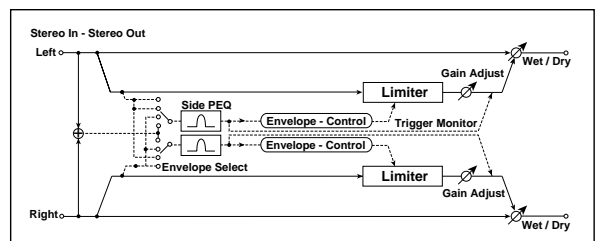
c: Attack

This parameter controls the attack level.



003: St.Limiter (Stereo Limiter)

The Limiter regulates the input signal level. It is similar to the Compressor, except that the Limiter compresses only signals that exceed the specified level to lower unnecessary peak signals. The Limiter applies a peaking-type EQ to the trigger signal (which controls the degree of the Limiter effect), allowing you to set any band width to be covered. This effect is a stereo limiter. You can link left and right channels, or use each channel individually.



a	Envelope (Envelope Select) L/R Mix, L Only, R Only, L/R Individually Selects from linking both channels, controlling only from left channel, only from the right channel, or controlling each channel individually	
b	Ratio Sets the signal compression ratio	1.0:1...50.0:1, Inf:1
c	Threshold Sets the level above which the compressor is applied	-40...0dB
d	Attack Sets the attack time	1...100
e	Release Sets the release time	1...100
f	Side PEQ Insert Toggles between on/off of the trigger signal's EQ	Off, On
g	Trigger Monitor Switches between effect output monitor and trigger signal monitor	Off, On
h	EQ (Side PEQ Cutoff) Sets the EQ center frequency for the trigger signal	20...12.00kHz
	Q Sets the EQ bandwidth for the trigger signal	0.5...10.0
	G (Gain) Sets the EQ gain for the trigger signal	-18.0...+18.0dB
i	G.Adj (Gain Adjust) Sets the output gain	-Inf, -38...+24dB
	(Source) Selects the modulation source for the output gain	Off...Tempo
	(Amount) Sets the modulation amount of the output gain	-63...+63
j	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: Envelope

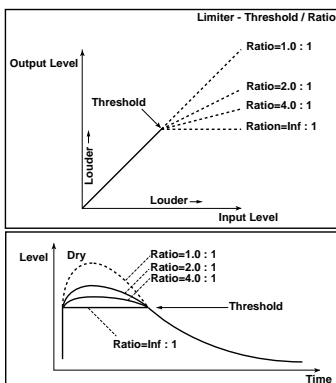
When **L/R Mix** is selected for this parameter, the left and right channels are linked to control the Limiter using the mixed signal. If **L Only** (or **R Only**) is selected, the left and right channels are linked, and the Limiter is controlled via only the left (or right) channel.

With **L/R individually**, the left and right channels control the Limiter individually.

b: Ratio, c: Threshold, i: G.Adj

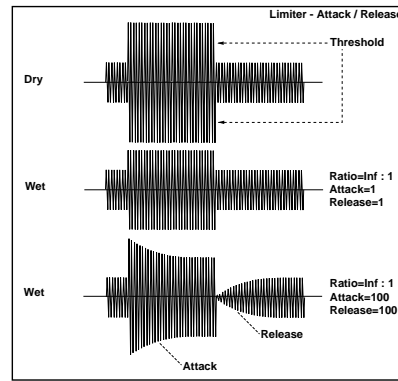
This parameter sets the signal compression "Ratio". Compression is applied only when the signal level exceeds the "Threshold" value.

Adjust the output level using the "G.Adj" parameter, since compression causes the entire level to be reduced.



d: Attack, e: Release

These parameters set the attack time and release time. A higher attack time will cause the compression to be applied more slowly.



f: Side PEQ Insert, h: EQ, h: Q, h: G

These parameters are used to set the EQ applied to the trigger signal.

The Limiter determines whether the compression is applied or not, based on the post-EQ trigger signal. Setting the equalizer allows you to set the Limiter to respond to any frequency band.

g: Trigger Monitor

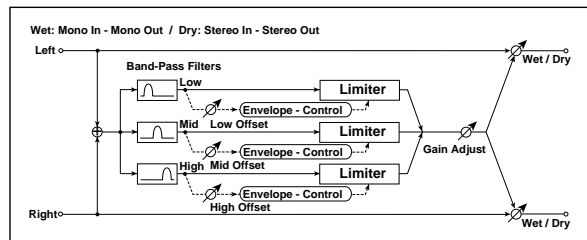
Setting this parameter **On** will cause the trigger signal to be output, instead of the effect sound. Use this parameter to check the trigger signal with EQ applied.

Usually, set this to **Off**.

004: Midband Limit

(Multiband Limiter)

This effect applies the Limiter to the low range, mid range, and high range of the input signal. You can control dynamics for each range to adjust the sound pressure of the low range, mid range, and high range in a different way from the EQ.



a	Ratio Sets the signal compression ratio	1.0:1...50.0:1, Inf:1
b	Threshold Sets the level above which the compressor is applied	-40...0dB
c	Attack Sets the attack time	1...100
d	Release Sets the release time	1...100
e	Low Offset Gain of the low-range trigger signal	-40...0dB
f	Mid Offset Gain of the mid-range trigger signal	-40...0dB
g	High Offset Gain of the high-range trigger signal	-40...0dB
h	G.Adj (Gain Adjust) Sets the output gain	-Inf, -38...+24dB
	(Source) Selects the modulation source for the output gain	Off...Tempo
	(Amount) Sets the modulation amount of the output gain	-63...+63

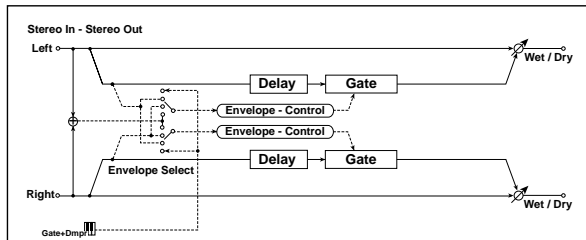
i	W/D (Wet/Dly)	Dry, 1:99...99:1, Wet	D^{mod}
	(Source)	Off...Tempo	
	(Amount)	-100...+100	

e: Low Offset, f: Mid Offset, g: High Offset

These parameters set the gain of the trigger signal. For example, if you do not want to apply compression to the high range, reduce the "High Offset" value down below the "Threshold" level. In this way, the high range limiter will not respond, and compression will not be applied.

005: St.Gate (Stereo Gate)

This effect mutes the input signal if its level is lower than the specified level. It also reverses the on and off operation of the gate, and uses Note On and Off messages to turn the gate on and off.



a	Envelope (Envelope Select)	Dmod, L/R Mix, L Only, R Only	E^{st} , D^{mod}
b	Env. Dmod Src (Envelope Dmod Source)	Off...G2+Dmp	
c	Threshold	0...100	E^{st}
d	Attack	1...100	E^{st}
e	Release	1...100	E^{st}
f	Polarity	+, -	
g	Delay (Delay Time)	0...100ms	E^{st}
h	W/D (Wet/Dly)	Dry, 1:99...99:1, Wet	D^{mod}
	(Source)	Off...Tempo	
	(Amount)	-100...+100	

a: Envelope, b: Env. Dmod Src

The "Envelope" parameter selects whether the gate on/off is triggered by the level of the input signal, or controlled directly by the level of the modulation source. The Src parameter specifies the modulation source, selected from **Off** to **G2+Dmod**.

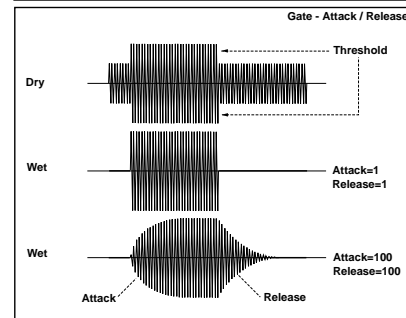
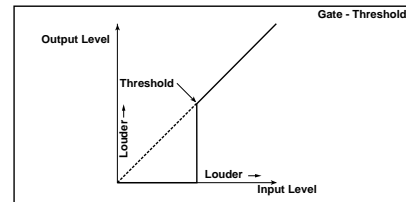
With "Envelope" = **L/R Mix**, the left and right channel signal mixture will trigger the gate on/off. When **L Only** or **R Only** is selected, the gate is controlled by either of the channel signals.

f: Polarity

This parameter reverses the Gate on/off operation. With a **negative** value, the gate is closed when the input signal level exceeds the Threshold. The gate operation controlled by the modulation source is also reversed.

c: Threshold, d: Attack, e: Release

This parameter sets the signal level below which Gate is applied when "Envelope" is set to **L/R Mix**, **L Only**, or **R Only**. The Attack and Release parameters set the Gate attack time and release time.

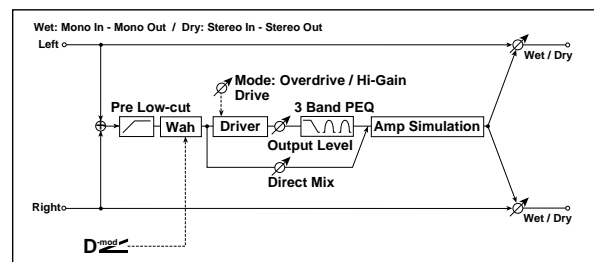


g: Delay

This parameter sets the delay time of the Gate input. If the sound has a very fast attack, increase the delay time so that the signal has to be input after the Gate is opened. This will preserve the attack part of the sound.

006: OD/HiGain Wah (Overdrive/Hi.Gain Wah)

This distortion effect utilizes an Overdrive mode and a Hi-Gain mode. Controlling the wah effect, the 3-band EQ, and the amp simulation will allow you to create versatile distortion sounds. This effect is suitable for guitar and organ sounds.



a	Wah	Off, On	E^{st} , D^{mod}
	(Source)	Off...Tempo	
	(Sw)	Tggl, Mmnt	E^{st}
b	Sweep Rng (Wah Sweep Range)	-10...+10	E^{st} , D^{mod}
	Src (Source)	Off...Tempo	E^{st}
c	Mode (Drive Mode)	Overdrive, Hi-Gain	
	Drive	1...100	E^{st}

d	Pre Low-cut Sets the low range cut amount of the distortion input	0...10 ES
e	Level (Output Level) Sets the output level	0...50 ES, D ^{mod}
	(Source) Selects the modulation source for the output level	Off...Tempo
f	(Amount) Sets the modulation amount of the output level	-50...+50
	Lo (Low Cutoff) Sets the center frequency for Low EQ (shelving type)	20...1.0kHz
g	G (Gain) Sets the gain of Low EQ	-18...+18dB
	M1 (Mid1 Cutoff) Sets the center frequency for Mid/High EQ 1 (peaking type)	300...10.00kHz
	Q Sets the band width of Mid/High EQ 1	0.5...10.0 ES
h	G (Gain) Sets the gain of Mid/High EQ 1	-18...+18dB
	M2 (Mid2 Cutoff) Sets the center frequency for Mid/High EQ 2 (peaking type)	500...20.00kHz
	Q Sets the band width of Mid/High EQ 2	0.5...10.0 ES
i	G (Gain) Sets the gain of Mid/High EQ 2	-18...+18dB
	Direct Mix Sets the amount of the dry sound mixed to the distortion	0...50
j	SpSim (Speaker Simulation) Switches the speaker simulation on/off	Off, On
	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
k	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: Wah

The Wah parameter switches the wah effect on/off.

a: (Sw)

This parameter sets how the wah effect is switched on and off via the modulation source.

When "Sw" = **Mmnt (Moment)**, the wah effect is usually turned off. It is turned on only when you press the pedal or operate the joystick.

MIDI When a value for the modulation source is less than 64, "off" speed is selected, and when the value is 64 or higher, "on" is selected.

When "(Sw)" = **Tgg1 (Toggle)**, the wah effect is switched between on and off each time you press the pedal or operate the joystick.

MIDI The switch will be turned on/off each time the value of the modulation source exceeds 64.

b: SweepRng, b: Src

This parameter sets the sweep range of the wah center frequency. A negative value will reverse the direction of sweep. The wah center frequency can be controlled by the modulation source specified in the "Src" parameter.

d: Drive, e: Level

The degree of distortion is determined by the level of input signal and the setting of "Drive". Raising the "Drive" setting will cause the entire volume level to increase. Use the "Level" parameter to adjust the volume level. The "Level" parameter uses the signal level input to the 3-Band EQ. If clipping occurs at the 3-Band EQ, adjust the "Level" parameter.

d: Pre Low-cut

Cutting the signal in the low range before it is input to the Distortion will create a sharp distortion.

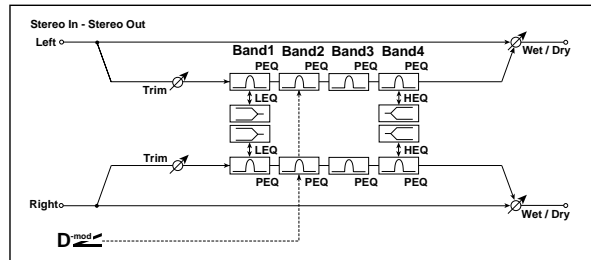
g: Q, h: Q

These parameters set the bandwidth of each equalizer. The higher the value, the narrower the band becomes.

007: St.Para.4EQ

(Stereo Parametric 4-Band EQ)

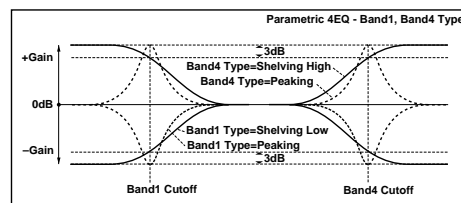
This is a stereo 4-band parametric equalizer. You can select peaking type or shelving type for Band 1 and 4. The gain of Band 2 can be controlled by dynamic modulation.



a	Trim Sets the input level	0...100
b	B1 Type (Band1 Type) Selects the type of Band 1	Peaking, Shelving-Low ES
c	B4 Type (Band4 Type) Selects the type of Band 4	Peaking, Shelving-High ES
d	B2 Dyn.G Src (Band2 Dynamic Gain Source) Selects the modulation source of the Band 2 gain	Off...Tempo ES
	(Amount) Sets the modulation amount of Band 2 gain	-18...+18dB ES
e	B1 (Band1 Cutoff) Sets the center frequency of Band 1	20...1.00kHz
	Q Sets the bandwidth of Band 1	0.5...10.0 ES Fx:006
	G (Gain) Sets the gain of Band 1	-18.0...+18.0dB
f	B2 (Band2 Cutoff) Sets the center frequency of Band 2	50...10.00kHz
	Q Sets the bandwidth of Band 2	0.5...10.0 ES Fx:006
	G (Gain) Sets the gain of Band 2	-18.0...+18.0dB ES, D ^{mod}
g	B3 (Band3 Cutoff) Sets the center frequency of Band 3	300...10.00kHz
	Q Sets the bandwidth of Band 3	0.5...10.0 ES Fx:006
	G (Gain) Sets the gain of Band 3	-18.0...+18.0dB
h	B4 (Band4 Cutoff) Sets the center frequency of Band 4	500...20.00kHz
	Q Sets the bandwidth of Band 4	0.5...10.0 ES Fx:006
	G (Gain) Sets the gain of Band 4	-18.0...+18.0dB
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

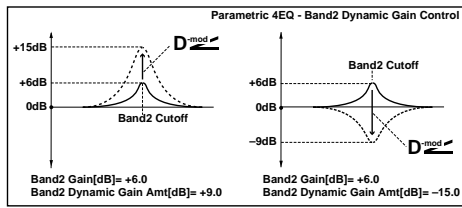
b: B1 Type, c: B4 Type

Selects a filter type for Band 1 and 4.



d: B2 Dyn.G Src, d: (Amount), f: G

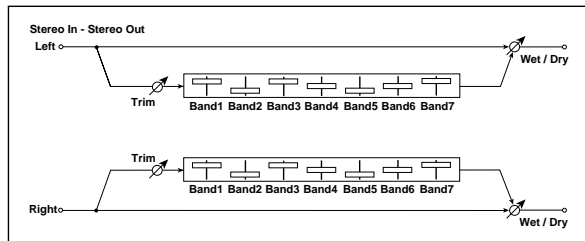
You can control the gain of Band 2 using the modulation source.



008: St.Graphic7EQ

(Stereo Graphic 7-Band EQ)

This is a stereo 7-band graphic equalizer. The bar graph of the gain setting for each band gives you a clear, visual idea of frequency responses. You can select a center frequency setting for each band from twelve types, according to the sound.



a	Type 1:Wide 1, 2:Wide 2, 3:Wide 3, 4:Half Wide 1, 5:Half Wide 2, 6:Half Wide 3, 7:Low, 8:Wide Low, 9:Mid, 10:Wide Mid, 11:High, 12:Wide High Selects a combination of center frequencies for each band	ES
b	Trim Sets the input level	0...100
c	(Band1) Sets the gain of Band 1	-18.0...+18.0dB
d	(Band2) Sets the gain of Band 2	-18.0...+18.0dB
e	(Band3) Sets the gain of Band 3	-18.0...+18.0dB
f	(Band4) Sets the gain of Band 4	-18.0...+18.0dB
g	(Band5) Sets the gain of Band 5	-18.0...+18.0dB
h	(Band6) Sets the gain of Band 6	-18.0...+18.0dB
i	(Band7) Sets the gain of Band 7	-18.0...+18.0dB
j	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D-mod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: Type

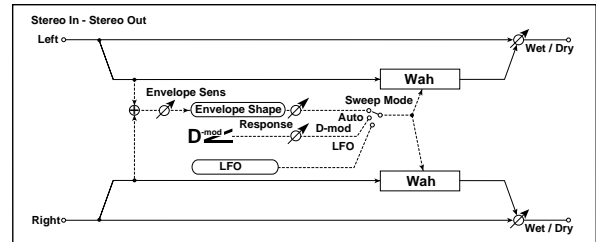
This parameter selects a combination of center frequencies for each band. Select a combination of center frequencies for each band. The center frequency of each band is shown at the top of the LCD screen.

You can configure a 21-Band Graphic EQ ranging from 80Hz to 18kHz if you route three Graphic 7Band EQ effects in series, with a setting of 7:Low, 9:Mid, and 11:High for each EQ.

009: St.Wah/AutoW

(Stereo Wah/Auto Wah)

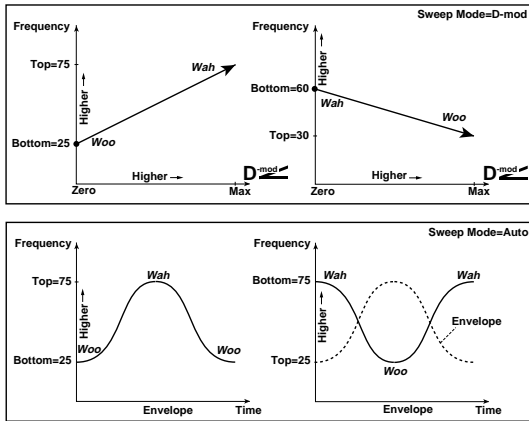
This stereo wah effect allows you to create sounds from vintage wah pedal simulation to auto-wah simulation, and much broader range settings.



a	FreqBottom (Frequency Bottom) Sets the lower limit of the wah center frequency	0...100 ES
	FreqTop (Frequency Top) Sets the upper limit of the wah center frequency	0...100 ES
b	Swp Mode (Sweep Mode) Selects the control from auto-wah, modulation source, and LFO	Auto, Dmod, LFO ES, D-mod
	Src (Source) Selects the modulation source for the wah when Swp Mode=Dmod	Off...Tempo
c	Response Sets the response speed when Swp Mode = Auto or Dmod	0...100
d	Envelope Sens (Envelope Sensitivity) Sets the sensitivity of auto-wah	0...100 ES
e	Envelope Shape Sets the sweep curve of auto-wah	-100...+100 ES
f	lfoF (LFO Frequency) Sets the LFO speed	0.02...20.00Hz ES, D-mod
	(Source) Selects the modulation source of LFO speed	Off...Tempo
	(Amount) Sets the modulation amount of LFO speed	-20.00...+20.00Hz
g	BPM/MIDI Sync Switches between using the frequency of the LFO speed and using the tempo and notes	Off, On ES, Sync
	BPM Selects MIDI Clock and assigns tempo	MIDI, 40...240 ES
	Base (Base Note) Selects the type of notes that specify the LFO speed	ES
	Times Sets the number of notes that specify the LFO speed	x1...x16 ES
h	Resonance Sets the resonance amount	0...100
	LPF (Low Pass Filter) Switches the Wah Low Pass Filter on and off	Off, On
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D-mod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: FreqBotm, a: FreqTop

The sweep width and direction of the wah filter are determined by the "FreqBotm" and "FreqTop" settings.



b: Swp Mode

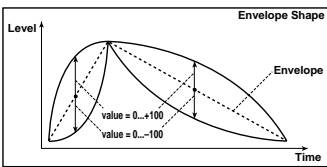
This parameter changes the wah control mode. Setting "Swp Mode" to **Auto** will select an auto-wah that sweeps according to envelope changes in the input signal level. Auto-wah is frequently used for funk guitar parts and clav sounds. When "Swp Mode" is set to **Dmod**, you can control the filter directly via the modulation source in the same way as a wah pedal. When "Swp Mode" is set to **LFO**, the effect uses LFO to sweep in cycle.

d: Envelope Sens

This parameter sets the sensitivity of auto-wah. Increase the value if the input signal is too low to sweep. Reduce the value if the input signal is so high that the filter is stopped temporarily.

e: Envelope Shape

This parameter determines the sweep curve for auto-wah.



f: lfoF, g: BPM/MIDI Sync

When "BPM/MIDI Sync"=**Off**, the LFO speed uses the lfoF parameter setting. When "BPM/MIDI Sync"=**On**, the LFO speed follows the "BPM", "Base", and "Times" settings.

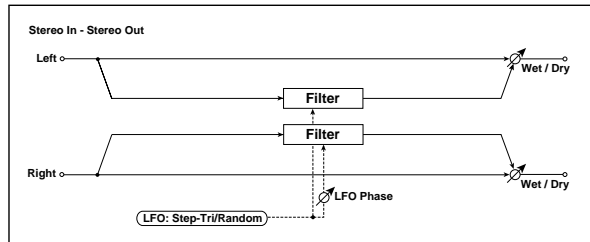
g: BPM, g: Base, g: Times

One cycle of LFO sweep is obtained by multiplying the length of a note (♪...♪) (selected for "Base", in relation to the tempo specified in "BPM", or the MIDI Clock tempo if "BPM" is set to **MIDI**) by the number specified in the Times parameter.

010: St.Random Filter

(Stereo Random Filter)

This stereo band pass filter uses a step-shape waveform and random LFO for modulation. You can create a special effect from filter oscillation.



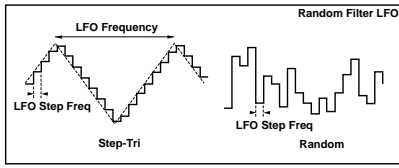
a	LFO Wave (LFO Waveform) Selects LFO Waveform	Step-Tri, Random
b	LFO Phase Sets the LFO phase difference between the left and right	-180...+180deg
c	Freq (LFO Frequency) Sets the LFO speed	0.02...20.00Hz
	(Source) Selects the modulation source used for both LFO speed and step speed	Off...Tempo
d	(Amount) Sets the modulation amount of LFO speed	-20.00...+20.00Hz
	Step (LFO Step Frequency) Sets the LFO step speed (speed that changes in steps)	0.05...50.00Hz
e	(Amount) Sets the modulation amount of LFO step speed	-50.00...+50.00Hz
	Manual Sets the filter center frequency	0...100
f	Resonance Sets the resonance amount	0...100
	BPM/MIDI Sync Switches between using the frequency of the LFO speed and using the tempo and notes	Off, On
g	BPM Selects MIDI Clock and assigns tempo	MIDI, 40...240
	Base (Base Note) Selects the type of notes that specify the LFO speed	
	Times Sets the number of notes that specify the LFO speed	x1...x16
	StepBase (Step Base Note) Selects the type of notes to specify the LFO step speed	
h	Times Sets the number of notes to specify the LFO step speed	x1...x32
	Depth Sets the modulation depth of filter center frequency	0...100
i	(Source) Selects the modulation source of filter modulation	Off...Tempo
	(Amount) Sets the modulation amount of filter modulation	-100...+100
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	-Wet...-1:99, Dry, 1:99...Wet
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: LFO Wave, c: Freq, d: Step

When "LFO Wave" is set to **Step-Tri**, LFO is a step-shape, triangle waveform. The "Freq" parameter sets the original triangle waveform speed. Changing the "Step" parameter enables you to adjust the width of the steps.

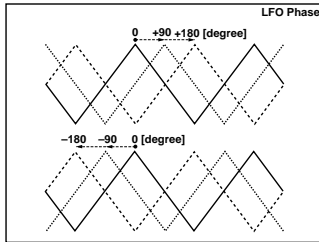
Effect

When "LFO Wave" is set to **Random**, the "Step" parameter uses a random LFO cycle.



b: LFO Phase

Offsetting the left and right phases alters how modulation is applied to the left and right channels, creating a swelling affect.



f: BPM, g: StepBase, g: Times

The width of an LFO step, or a cycle of random LFO, is obtained by multiplying the length of a note (♩...♩) (selected for "Step-Base", in relation to the tempo specified in "BPM," or the MIDI Clock tempo if "BPM" is set to MIDI) by the number specified in the "Times" parameter.

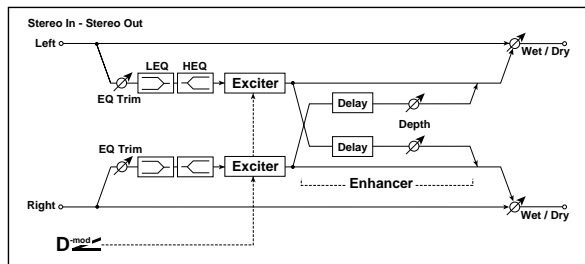
j: W/D

The effect sound's phase will be reversed when you set this parameter in the range of values from **-Wet** to **-1:99**.

011: St.Exct/Enhcr

(Stereo Exciter/Enhancer)

This effect is a combination of the Exciter, which adds a punch to the sound and the Enhancer, which adds spread and presence.



a	Blend (Exciter Blend) Sets the intensity (depth) of the Exciter effect	-100...+100 D-mod
	(Source) Selects the modulation source of the Exciter intensity	Off...Tempo
	(Amount) Sets the modulation amount of the Exciter intensity	-100...+100
b	Point (Emphatic Point) Sets the frequency to be emphasized	0...70 D-mod
	(Source) Selects the modulation source of the frequency to be emphasized	Off...Tempo
	(Amount) Sets the amount of modulation of the frequency to be emphasized	-70...+70
c	Enh Dly L (Enhancer Delay L) Sets the delay time for the Enhancer left channel	0.0...50.0ms
d	Enh Dly R (Enhancer Delay R) [msec] Sets the delay time for the Enhancer right channel	0.0...50.0ms

e	Enh Dep (Enhancer Depth) Sets the determines to what degree the Enhancer effect is applied	0...100 D-mod
	(Source) Selects the modulation source of the Enhancer width	Off...Tempo
	(Amount) Sets the modulation amount of the Enhancer width	-100...+100
f	Pre EQ Trim Sets the EQ input level	0...100
g	LoEQ (Pre Low EQ Gain) Sets the gain of Low EQ	-15.0...+15.0dB
	HiEQ (Pre High EQ Gain) Sets the gain of High EQ	-15.0...+15.0dB
h	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D-mod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: Blend

This parameter sets the depth (intensity) of the Exciter effect. Positive values give a frequency pattern (to be emphasized) different from negative values.

b: Point

This parameter sets the frequency to be emphasized. Higher values will emphasize lower frequencies.

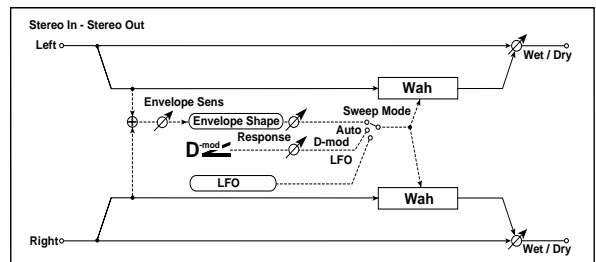
c: Enh Dly L, d: Enh Dly R

These parameters set the delay time for the Enhancer left and right channel. Specifying a slightly different delay time for the left and right channel will add a stereo image, depth, and width to the sound.

012: St.Sub OSC

(Stereo Sub Oscillator)

This effect adds very low frequencies to the input signal. It is very useful when simulating a roaring drum sound or emphasizing powerful low range. This effect is different from the equalizer in that you can add very low range harmonics. You can also adjust the oscillator frequency to match a particular note number, for use as an octaver.



a	OSC Mode Determines whether the oscillator frequency follows the note number or whether it is fixed	Note (Key Follow), Fixed D-mod
b	Note Interval Sets the pitch difference from the note number when OSC Mode=Note (Key Follow)	-48...0 D-mod
c	Fine (Note Fine) Fine adjustment of the oscillator frequency	-100...+100 D-mod
d	Fixed (Fixed Frequency) Sets the oscillator frequency when OSC Mode=Fixed	10.0...80.0Hz D-mod
	(Source) Selects the modulation source for the oscillator frequency when OSC Mode=Fixed	Off...Tempo
	(Amount) Sets the oscillator frequency modulation amount when OSC Mode=Fixed	-80...+80Hz

e	Envelope Pre LPF Sets the upper limit of the frequency range for which very low harmonics are added	1...100
f	Envelope Sens (Envelope Sensitivity) Sets the sensitivity with which very low harmonics are added	0...100
g	Envelope Shape Sets the oscillator's volume envelope curve	-100...+100
h	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: OSC Mode, b: Note Interval, c: Fine

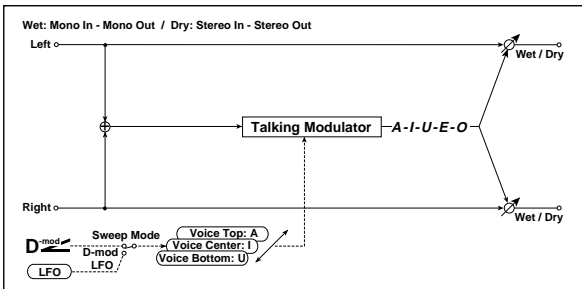
The "OSC Mode" parameter selects the oscillator operation mode. When **Note (Key Follow)** is selected, the oscillator's frequency is determined based on the note number, allowing you to use it as an octaver. The "Note Interval" parameter sets the pitch offset from the original note number by semitone steps. The "Fine" parameter allows you to fine-tune in steps of cents.

e: Envelope Pre LPF

This parameter sets the upper limit of the frequency range to which very low harmonics are added. Adjust this parameter if you do not want to add lower harmonics to the higher range.

013: Talking Mod (Talking Modulator)

This effect adds an unusual character, like a human voice, to the input signal. Modulating the tone via dynamic modulation, you can create an interesting effect that sounds as if the guitar or synthesizer is talking.



a	Sweep Mode Switches between modulation source control and LFO control	Dmod, LFO
b	Voice Control Voice pattern control	Bottom, 1...49, Center, 51...99, Top
c	Control Src (Control Source) Selects the modulation source that controls the voice pattern	Off...Tempo
d	Top (Voice Top) Selects a vowel sound at the top end of control	A, I, U, E, O
	Center (Voice Center) Selects a vowel sound in the center of control	A, I, U, E, O
	Bottom (Voice Bottom) Selects a vowel sound at the bottom end of control	A, I, U, E, O
e	Formant Shift Sets the frequency to which the effect is applied	-100...+100
f	lfoF (LFO Frequency) Sets the LFO speed	0.02...20.00Hz
	(Source) Selects the modulation source of LFO speed	Off...Tempo
	(Amount) Sets the modulation amount of LFO speed	-20.00...+20.00Hz

g	BPM/MIDI Sync Switches between using the frequency of the LFO speed and using the tempo and notes	Off, On
	BPM Selects MIDI Clock and assigns tempo	MIDI, 40...240
	Base (Base Note) Selects the type of notes that specify the LFO speed	Fx:009
h	Times Sets the number of notes that specify the LFO speed	1...16
	Resonance Sets the Level of resonance of the voice pattern	0...100
	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet
i	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

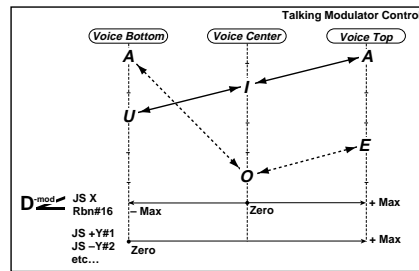
d: Top, d: Center, d: Bottom

These parameters assign vowels to the top, center, and bottom position of the controller.

E.g.: When "Top"=A, "Center"=I, and "Bottom"=U:

If "Sweep Mode" is set to **Dmod** and "Control Src" is set to **JSX**, moving the joystick of a connected MIDI instrument from the far right to the far left will make the voice change from "a" to "i" then "u."

If Sweep Mode is set to **LFO**, the sound will change cyclically from "a" to "i," "u," "i," then "a."



e: Formant Shift

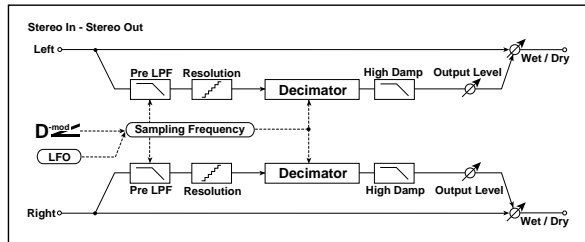
This parameter adjusts the frequency level to which the effect is applied. If you wish to apply the effect to a higher-range sound, set this parameter to a higher value; to apply the effect to a lower-range sound, set this to a lower value.

h: Resonance

This parameter sets the intensity of resonance for the voice pattern. A larger value will add more character to the sound.

014: St.Decimator (Stereo Decimator)

This effect creates a rough sound like a cheap sampler by lowering the sampling frequency and data bit length. You can also simulate noise unique to a sampler (aliasing).



a	Pre LPF Selects whether the harmonic noise caused by a decrease in sampling frequency is generated or not	Off, On ES ⁺
b	High Damp Sets the ratio of cut of the high range	0...100%
c	Fs (Sampling Frequency) Sets the sampling frequency	1.00k...48.00kHz D ^{mod}
	(Source) Selects the modulation source of the sampling frequency	Off...Tempo
d	Resolution Sets the data bit length	4...24 ES ⁺
	(Amount) Sets the modulation amount of the output level	-100...+100
e	Level (Output Level) Sets the output level	0...100 ES ⁺ , D ^{mod}
	(Source) Selects the modulation source for the output level	Off...Tempo
f	(Amount) Sets the modulation amount of the output level	-100...+100
	lfoF (LFO Frequency) Sets the LFO speed	0.02...20.00Hz D ^{mod}
g	(Source) Selects the modulation source of LFO speed	Off...Tempo
	(Amount) Sets the modulation amount of LFO speed	-20.00...+20.00Hz
h	Depth Sets the depth of the sampling frequency LFO modulation	0...100 D ^{mod}
	(Source) Selects the LFO modulation source of the sampling frequency	Off...Tempo
i	(Amount) Sets the LFO modulation amount of the sampling frequency	-100...+100
	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
j	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: Pre LPF

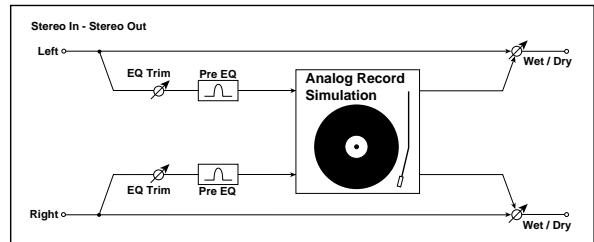
If a sampler with a very low sampling frequency receives very high-pitched sound that could not be heard during playback, it could generate pitch noise that is unrelated to the original sound. Set "Pre LPF" to ON to prevent this noise from being generated. If you set the "Fs" to about 3kHz and set "Pre LPF" to OFF, you can create a sound like a ring modulator.

d: Resolution, e: Output Level

If you set a smaller value for the "Resolution" parameter, the sound may be distorted. The volume level may also be changed. Use "Level" to adjust the level.

015: St.AnalogRecd (Stereo Analog Record)

This effect simulates the noise caused by scratches and dust on analog records. It also reproduces some of the modulation caused by a warped turntable.



a	Speed Sets the r.p.m. of a record	33 1/3, 45, 78RPM
b	Flutter Sets the modulation depth	0...100 ES ⁺
c	Pre EQ Trim Sets the EQ input level	0...100
d	EQ (Pre EQ Cutoff) Sets the EQ center frequency	300...10.00kHz
	Q Sets the EQ band width	0.5...10.0
e	G (Gain) Sets the EQ gain	-18.0...+18.0dB
	Noise Density Sets the noise density	0...100
f	Noise Tone Sets the noise tone	0...100
g	NoiseLvl (Noise Level) Sets the noise level	0...100 D ^{mod}
	(Source) Selects the modulation source for the noise level	Off...Tempo
h	(Amount) Sets the modulation amount of the noise level	-100...+100
	ClickLvl (Click Level) Sets the click noise level	0...100 ES ⁺ , D ^{mod}
i	(Source) Selects the modulation source for the click noise level	Off...Tempo
	(Amount) Sets the modulation amount of the click noise level	-100...+100
j	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
k	(Amount) Sets the modulation amount of the effect balance	-100...+100

b: Flutter

This parameter enables you to set the depth of the modulation caused by a warped turntable.

h: ClickLvl

This parameter enables you to set the level of the click noise that occurs once every rotation of the turntable. This simulation reproduces record noise, and the noise generated after the music on a vinyl record finishes.

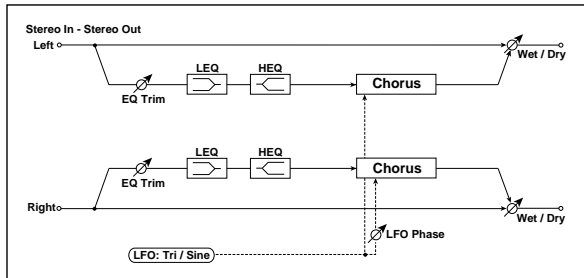
Pitch/Phase Mod.

Pitch/phase modulation effects

016: St.Chorus

(Stereo Chorus)

This effect adds thickness and warmth to the sound by modulating the delay time of the input signal. You can add spread to the sound by offsetting the phase of the left and right LFOs from each other.



a	LFO Wave (LFO Waveform) Selects LFO Waveform	Triangle, Sine
b	LFO Phase Sets the LFO phase difference between the left and right	-180...+180deg Fx:010
c	Freq (LFO Frequency) Sets the LFO speed	0.02...20.00Hz Fx:009, D ^{mod}
	(Source) Selects the modulation source of LFO speed	Off...Tempo
d	(Amount) Sets the modulation amount of LFO speed	-20.00...+20.00Hz
	BPM/MIDI Sync Switches between using the frequency of the LFO speed and using the tempo and notes	Off, On Fx:009, Sync
	BPM Selects MIDI Clock and assigns tempo	MIDI, 40...240 Fx:009
	Base (Base Note) Selects the type of notes that specify the LFO speed	1...16 Fx:009
e	L Dly (L Pre Delay) Sets the delay time for the left channel	0.0...50.0ms Fx:
	R Dly (R Pre Delay) Sets the delay time for the right channel	0.0...50.0ms Fx:
f	Depth Sets the depth of LFO modulation	0...100 D ^{mod}
	(Source) Selects the modulation source of the LFO modulation depth	Off...Tempo
	(Amount) Sets the modulation amount of the LFO modulation depth	-100...+100
g	Pre EQ Trim Sets the EQ input level	0...100
h	LoEQ (Pre Low EQ Gain) Sets the gain of Low EQ	-15.0...+15.0dB
	HiEQ (Pre High EQ Gain) Sets the gain of High EQ	-15.0...+15.0dB
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	-Wet...-1:99, Dry, 1:99...Wet Fx:010, D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

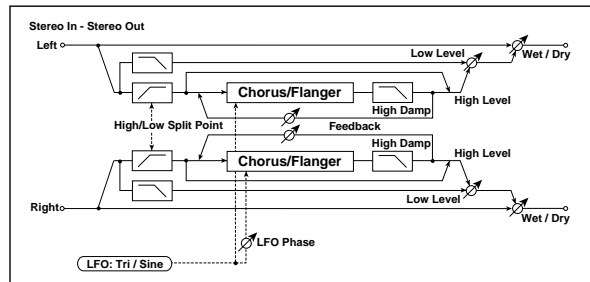
e: L Dly, e: R Dly

Setting the left and right delay time individually allows you to control the stereo image.

017: St.HarmonicCho

(Stereo Harmonic Chorus)

This effect applies chorus only to higher frequencies. This can be used to apply a chorus effect to a bass sound without making the sound thinner. You can also use this chorus block with feedback as a flanger.



a	LFO Wave (LFO Waveform) Selects LFO Waveform	Triangle, Sine
b	LFO Phase Sets the LFO phase difference between the left and right	-180...+180deg Fx:010
c	Freq (LFO Frequency) Sets the LFO speed	0.02...20.00Hz Fx:009, D ^{mod}
	(Source) Selects the modulation source of LFO speed	Off...Tempo
d	(Amount) Sets the modulation amount of LFO speed	-20.00...+20.00Hz
	BPM/MIDI Sync Switches between using the frequency of the LFO speed and using the tempo and notes	Off, On Fx:009, Sync
	BPM Selects MIDI Clock and assigns tempo	MIDI, 40...240 Fx:009
	Base (Base Note) Selects the type of notes that specify the LFO speed	1...16 Fx:009
e	Dly (Delay Time) Sets the delay time from the original sound	0.0...50.0ms
	Hi/Lo Split (High/Low Split Point) Sets the frequency split point between the high and low range	1...100 Fx:
f	Depth Sets the depth of LFO modulation	0...100 D ^{mod}
	(Source) Selects the modulation source of the LFO modulation depth	Off...Tempo
	(Amount) Sets the modulation amount of the LFO modulation depth	-100...+100
g	Feedback Sets the feed back amount of the chorus block	-100...+100 Fx:
	HiDamp (High Damp) Sets the high range damping amount of the chorus block	0...100%
h	Lo Level (Low Level) Sets the low range output level	0...100
	Hi Level (High Level) Sets the high range (chorus) output level	0...100
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

e: Hi/Lo Split

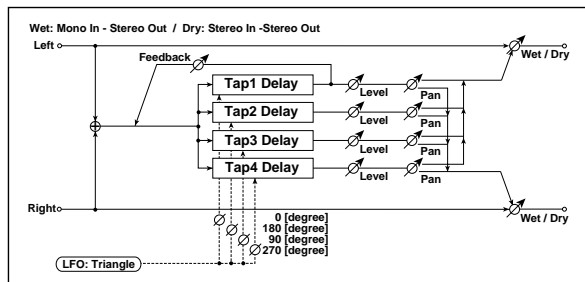
This parameter sets the frequency that splits the high and low range. Only the high range will be sent to the chorus block.

g: Feedback

Sets the feedback amount of the chorus block. Increasing the feedback will allow you to use the effect as a flanger.

018: MltTap ChoDly
(Multitap Chorus/Delay)

This effect has four chorus blocks with a different LFO phase. You can create a complex stereo image by setting each block's delay time, depth, output level, and pan individually. You can also fix some of the chorus blocks to combine the chorus and delay effects.

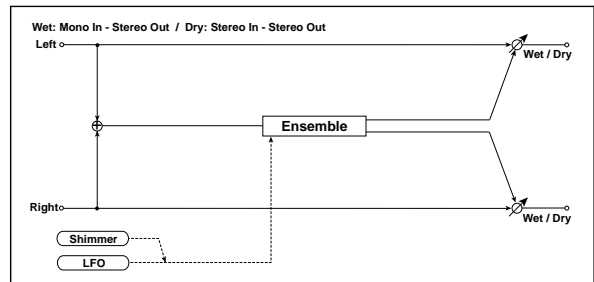


a	LFO Freq (LFO Frequency) Sets the LFO speed	0.02...13.00Hz
b	T1(000) (Tap1 Delay) Sets the Tap1 (LFO phase=0 degrees) delay time	0...570ms
	D (Depth) Sets the Tap1 chorus depth	0...30
	L (Level) Sets the Tap1 output level	0...30
	P (Pan) Sets the Tap1 stereo image	L6...L1, C, R1...R6
c	T2(180) (Tap2 Delay) Sets the Tap2 (LFO phase=180 degrees) delay time	0...570ms
	D (Depth) Sets the Tap2 chorus depth	0...30
	L (Level) Sets the Tap2 output level	0...30
	P (Pan) Sets the Tap2 stereo image	L6...L1, C, R1...R6
d	T3(090) (Tap3 Delay) Sets the Tap3 (LFO phase=90 degrees) delay time	0...570ms
	D (Depth) Sets the Tap3 chorus depth	0...30
	L (Level) Sets the Tap3 output level	0...30
	P (Pan) Sets the Tap3 stereo image	L6...L1, C, R1...R6
e	T4(270) (Tap4 Delay) Sets the Tap4 (LFO phase=270 degrees) delay time	0...570ms
	D (Depth) Sets the Tap4 chorus depth	0...30
	L (Level) Sets the Tap4 output level	0...30
	P (Pan) Sets the Tap4 stereo image	L6...L1, C, R1...R6
f	T1 Fb (Tap1 Feedback) Sets the Tap1 feedback amount	-100...+100 D ^{mod}
	(Source) Selects the modulation source of Tap1 feedback amount and effect balance	Off...Tempo
	(Amount) Sets the Tap1 feedback amount and modulation amount	-100...+100

g	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Amount) Sets the modulation amount of the effect balance	-100...+100

019: Ensemble

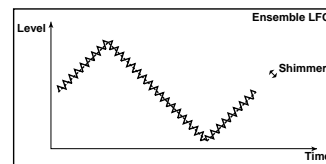
This Ensemble effect has three chorus blocks that use LFO to create subtle shimmering, and gives three dimensional depth and spread to the sound, because the signal is output from the left, right, and center.



a	Speed Sets the LFO speed	1...100 D ^{mod}
	(Source) Selects the modulation source of LFO speed	Off...Tempo
b	(Amount) Sets the modulation amount of LFO speed	-100...+100
	Depth Sets the depth of LFO modulation	0...100 D ^{mod}
c	(Source) Selects the modulation source of the LFO modulation depth	Off...Tempo
	(Amount) Sets the modulation amount of the LFO modulation depth	-100...+100
d	Shimmer Sets the amount of shimmering of the LFO waveform	0...100
d	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

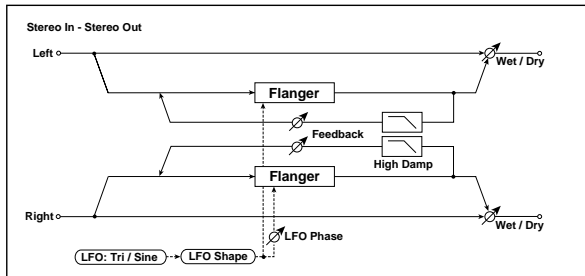
c: Shimmer

This parameter sets the amount of shimmering of the LFO waveform. Increasing this value adds more shimmering, making the chorus effect more complex and richer.



020: St.Flanger (Stereo Flanger)

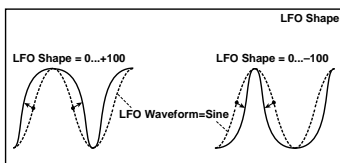
This effect gives a significant swell and movement of pitch to the sound. It is more effective when applied to a sound with a lot of harmonics. This is a stereo flanger. You can add spread to the sound by offsetting the phase of the left and right LFOs from each other.



a	LFO Wave (LFO Waveform) Selects LFO Waveform	Tri, Sine
	Shape (LFO Shape) Determines how much the LFO waveform is changed	-100...+100 Fx:009
b	LFO Phase Sets the LFO phase difference between the left and right	-180...+180deg Fx:010
	Freq (LFO Frequency) Sets the LFO speed	0.02...20.00Hz Fx:009, D-mod
c	(Source) Selects the modulation source of LFO speed	Off...Tempo
	(Amount) Sets the modulation amount of LFO speed	-20.00...+20.00Hz
d	BPM/MIDI Sync Switches between using the frequency of the LFO speed and using the tempo and notes	Off, On Fx:009, Sync
	BPM Selects MIDI Clock and assigns tempo	MIDI, 40...240 Fx:009
	Base (Base Note) Selects the type of notes that specify the LFO speed	1...16 Fx:009
e	Delay (Delay Time) Sets the delay time from the original sound	0.0...50.0ms
	Depth Sets the depth of LFO modulation	0...100
g	Feedback Sets the feedback amount	-100...+100 Fx:010
	High Damp Sets the feedback damping amount in the high range	0...100% Fx:010
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	-Wet...-1:99, Dry, 1:99...Wet Fx:010, D-mod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: Shape

Changing the LFO waveform shape controls the peak sweep of flanging effects.



g: Feedback, i: W/D

The peak shape of the positive and negative "Feedback" value is different. The harmonics will be emphasized when the effect sound is mixed with the dry sound if you set a positive value for

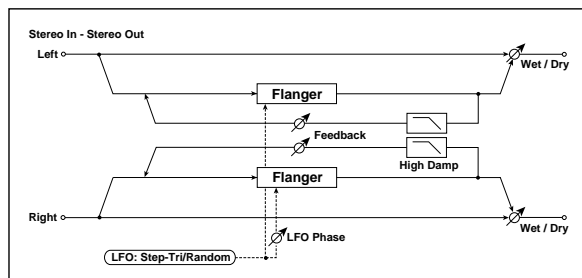
both "Feedback" and "W/D", and if you set a negative value for both "Feedback" and "W/D".

h: High Damp

This parameter sets the amount of damping of the feedback in the high range. Increasing the value will cut high-range harmonics.

021: St.Rndm Flang (Stereo Random Flanger)

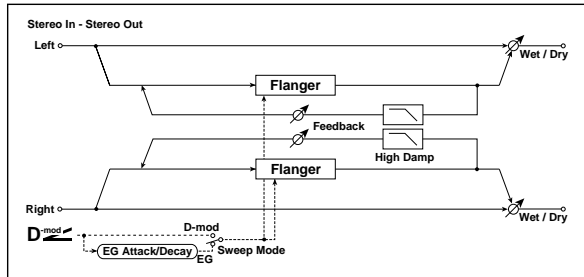
The stereo effect uses a step-shape waveform and random LFO for modulation, creating a unique flanging effect.



a	LFO Wave (LFO Waveform) Selects LFO Waveform	Step-Tri, Random Fx:010
	LFO Phase Sets the LFO phase difference between the left and right	-180...+180deg Fx:010
c	Freq (LFO Frequency) Sets the LFO speed	0.02...20.00Hz Fx:010, D-mod
	(Source) Selects the modulation source used for both LFO speed and step speed	Off...Tempo
d	(Amount) Sets the modulation amount of LFO speed	-20.00...+20.00Hz
	Step (LFO Step Frequency) Sets the LFO step speed (speed that changes in steps)	0.05...50.00Hz Fx:010, D-mod
e	(Amount) Sets the modulation amount of LFO step speed	-50.00...+50.00Hz
	Delay (Delay Time) Sets the delay time from the original sound	0.0...50.0ms
f	Depth Sets the depth of LFO modulation	0...100
	BPM/MIDI Sync Switches between using the frequency of the LFO speed and using the tempo and notes	Off, On Fx:009, Sync
g	BPM Selects MIDI Clock and assigns tempo	MIDI, 40...240 Fx:009, 010
	Base (Base Note) Selects the type of notes that specify the LFO speed	1...16 Fx:009
	Step Base (Step Base Note) Selects the type of notes to specify the LFO step speed	1...32 Fx:010, Sync
h	Times Sets the number of notes to specify the LFO step speed	1...32 Fx:010
	Feedback Sets the feedback amount	-100...+100 Fx:020
i	HiDamp (High Damp) Sets the feedback damping amount in the high range	0...100% Fx:020
	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	-Wet...-1:99, Dry, 1:99...Wet Fx:010, 020, D-mod
i	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

022: St.Env.Flanger (Stereo Envelope Flanger)

This Flanger uses an envelope generator for modulation. You will obtain the same pattern of flanging each time you play. You can also control the Flanger directly using the modulation source.



a	L Dly Bottom (L Delay Bottom) Sets the lower limit of the delay time on the left channel	0.0...50.0ms Fx:009
b	L Dly Top (L Delay Top) Sets the upper limit of the delay time on the left channel	0.0...50.0ms Fx:009
c	R Dly Bottom (R Delay Bottom) Sets the lower limit of the delay time on the right channel	0.0...50.0ms Fx:009
d	R Dly Top (R Delay Top) Sets the upper limit of the delay time on the right channel	0.0...50.0ms Fx:009
e	Swp Mode (Sweep Mode) Determines whether the flanger is controlled by the envelope generator or by the modulation source	EG, Dmod Fx:009, Dmod
	Src (Source) Selects the modulation source that triggers the EG (when EG is selected for Swp Mode), or modulation source that causes the flanger to sweep (when Dmod is selected for Swp Mode)	Off...Tempo Fx:009
f	EG Attack Sets the EG attack speed	1...100 Fx:009
g	EG Decay Sets the EG decay speed	1...100 Fx:009
h	Feedback Sets the feedback amount	-100...+100 Fx:020
i	High Damp Sets the feedback damping amount in the high range	0...100% Fx:020
j	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	-Wet...-1:99, Dry, 1:99...Wet Fx:010, 020, Dmod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

e: Swp Mode, e: Src

This parameter switches the flanger control mode. With "Swp Mode" = EG, the flanger will sweep using the envelope generator. This envelope generator is included in the envelope flanger, and not related to the Pitch EG, Filter EG, or Amp EG.

The "Src" parameter selects the source that starts the envelope generator. If you select, for example, **Gate**, the envelope generator will start when the note-on message is received.

When "Swp Mode" = **Dmod**, the modulation source can control the flanger directly. Select the modulation source using the "Src" parameter.



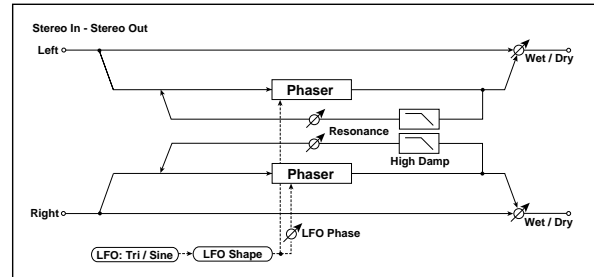
The effect is off when a value for the modulation source specified for the "Src" parameter is smaller than 64, and the effect is on when the value is 64 or higher. The Envelope Generator is triggered when the value changes from 63 or smaller to 64 or higher.

f: EG Attack, g: EG Decay

Attack and Decay speed are the only adjustable parameters on this EG.

023: St.Phaser (Stereo Phaser)

This effect creates a swell by shifting the phase. It is very effective on electric piano sounds. You can add spread to the sound by offsetting the phase of the left and right LFOs from each other.



a	LFO Wave (LFO Waveform) Selects LFO Waveform	Tri, Sine Fx:009
	Shape (LFO Shape) Determines how much the LFO waveform is changed	-100...+100 Fx:020
b	LFO Phase Sets the LFO phase difference between the left and right	-180...+180deg Fx:010
c	Freq (LFO Frequency) Sets the LFO speed	0.02...20.00Hz Fx:009, Dmod
	(Source) Selects the modulation source of LFO speed	Off...Tempo
	(Amount) Sets the modulation amount of LFO speed	-20.00...+20.00Hz
	BPM/MIDI Sync Switches between using the frequency of the LFO speed and using the tempo and notes	Off, On Fx:009, Sync
d	BPM Selects MIDI Clock and assigns tempo	MIDI, 40...240 Fx:009
	Base (Base Note) Selects the type of notes that specify the LFO speed	♩, ♪, ♫, ♮, ♯, ♭, ♮, ♯, ♭, ♮ Fx:009
	Times Sets the number of notes that specify the LFO speed	1...16 Fx:009
e	Manual Sets the frequency to which the effect is applied	0...100
f	Depth Sets the depth of LFO modulation	0...100 Dmod
	(Source) Selects the modulation source for the LFO modulation depth	Off...Tempo
	(Amount) Sets the modulation amount of the LFO modulation depth	-100...+100
g	Resonance Sets the resonance amount	-100...+100 Fx:009
h	High Damp [%] Sets the resonance damping amount in the high range	0...100% Fx:009
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	-Wet...-1:99, Dry, 1:99...Wet Fx:010, Dmod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

g: Resonance, i: W/D

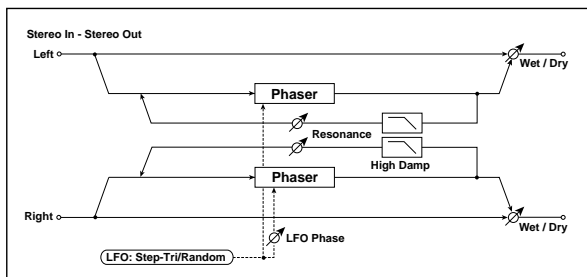
The peak shape of the positive and negative Feedback value is different. The harmonics will be emphasized when the effect sound is mixed with the dry sound, if you set a positive value for both "Resonance" and "W/D", and if you set a negative value for both "Resonance" and "W/D".

h: High Damp

This parameter sets the amount of damping of the resonance in the high range. Increasing the value will cut high-range harmonics.

024: St.Rndm Phasr (Stereo Random Phaser)

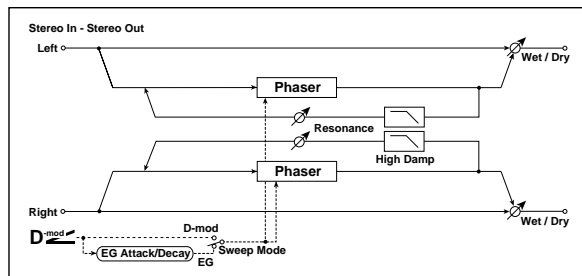
This is a stereo phaser. The effect uses a step-shape waveform and random LFO for modulation, creating a unique phasing effect.



a	LFO Wave (LFO Waveform) Selects LFO Waveform	Step-Tri, Step-Sin, Random Fx:010
b	LFO Phase Sets the LFO phase difference between the left and right	-180...+180deg Fx:010
c	Freq (LFO Frequency) Sets the LFO speed	0.02...20.00Hz Fx:010, D-mod
	(Source) Selects the modulation source commonly used for LFO speed and step speed	Off...Tempo
d	(Amount) Sets the modulation amount of LFO speed	-20.00...+20.00Hz
	Freq (LFO Step Frequency) Sets the LFO step speed	0.05...50.00Hz Fx:010, D-mod
e	(Amount) Sets the modulation amount of LFO step speed	-50.00...+50.00Hz
	Manual Sets the frequency to which the effect is applied	0...100
f	Depth Sets the depth of LFO modulation	0...100
	BPM/MIDI Sync Switches between using the frequency of the LFO speed and using the tempo and notes	Off, On Fx:009, Sync
	BPM Selects MIDI Clock and assigns tempo	MIDI, 40...240 Fx:009, 010
	Base (Base Note) Selects the type of notes that specify the LFO speed	1...16 Fx:009
g	Times Sets the number of notes that specify the LFO speed	1...32 Fx:010, Sync
	Step Base (Step Base Note) Selects the type of notes to specify the LFO step speed	1...32 Fx:010, Sync
h	Resonanc (Resonance) Sets the resonance amount	-100...+100 Fx:023
	HiDamp (High Damp) Sets the resonance damping amount in the high range	0...100% Fx:023
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	-Wet...-1:99, Dry, 1:99...Wet Fx:010, 023, D-mod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

025: St.Env.Phaser (Stereo Envelope Phaser)

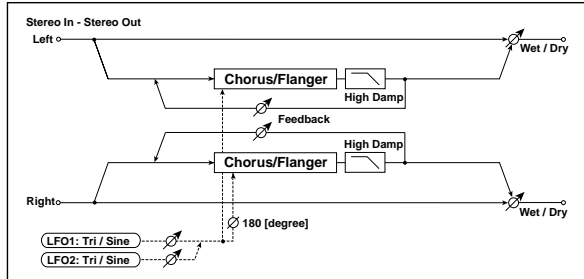
This stereo phaser uses an envelope generator for modulation. You will obtain the same pattern of phasing each time you play. You can also control the Phaser directly using the modulation source.



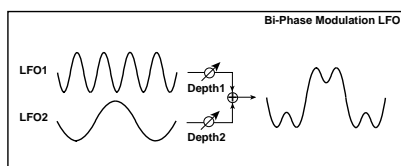
a	L Manu Bottom (L Manual Bottom) Sets the lower limit of the frequency range for the effect on the left channel	0...100 Fx:009
b	L Manu Top (L Manual Top) Sets the upper limit of the frequency range for the effect on the left channel	0...100 Fx:009
c	R Manu Bottom (R Manual Bottom) Sets the lower limit of the frequency range for the effect on the right channel	0...100 Fx:009
d	R Manu Top (R Manual Top) Sets the upper limit of the frequency range for the effect on the right channel	0...100 Fx:009
e	Swp Mode (Sweep Mode) Determines whether the flanger is controlled by the envelope generator or by the modulation source	EG, Dmod Fx:022, D-mod
	Src (Source) Selects the modulation source that triggers the EG (when EG is selected for Swp Mode), or modulation source that causes the flanger to sweep (when Dmod is selected for Swp Mode)	Off...Tempo
f	EG Attack Sets the EG attack speed	1...100 Fx:022
g	EG Decay Sets the EG decay speed	1...100 Fx:022
h	Resonance Sets the resonance amount	-100...+100 Fx:023
i	High Damp Sets the resonance damping amount in the high range	0...100% Fx:023
j	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	-Wet...-1:99, Dry, 1:99...Wet Fx:010, 023, D-mod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

026: St.BiphaseMod (Stereo Biphase Modulation)

This stereo chorus effect adds two different LFOs together. You can set the Frequency and Depth parameters for each LFO individually. Depending on the setting of these LFOs, very complex waveforms will create an analog-type, unstable modulated sound.

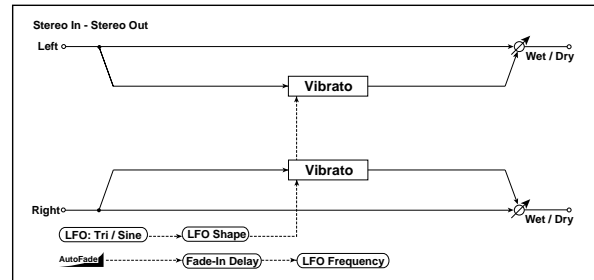


a	LFO1 Wave (LFO1 Waveform) Selects LFO1 waveform	Triangle, Sine
b	LFO2 Wave (LFO2 Waveform) Selects LFO2 waveform	Triangle, Sine
c	LFO Phase Sw Switches the LFO phase difference between left and right	0, 180degree
d	F1 (LFO1 Frequency) Sets the LFO1 speed	0.02...30.00Hz D^{mod}
	(Source) Selects the modulation source of LFO1&2 speed	Off...Tempo
	(Amount) Sets the modulation amount of LFO1 speed	-30.00...+30.00
e	F2 (LFO2 Frequency) Sets the LFO2 speed	0.02...30.00Hz D^{mod}
	(Amount) Sets the modulation amount of LFO2 speed	-30.00...+30.00
f	L Dly (L Pre Delay) Sets the delay time for the left channel	0.0...50.0ms Fx:016
	R Dly (R Pre Delay) Sets the delay time for the right channel	0.0...50.0ms Fx:016
g	Depth1 Sets the depth of LFO1 modulation	0...100 D^{mod}
	(Source) Selects the modulation source of LFO1&2 modulation depth	Off...Tempo
	(Amount) Sets the modulation amount of LFO1 modulation depth	-100...+100
h	Depth2 Sets the depth of LFO2 modulation	0...100 D^{mod}
	(Amount) Sets the modulation amount of LFO2 modulation depth	-100...+100
i	Feedback Sets the feedback amount	-100...+100 Fx:017
	HiDamp (High Damp) Sets the damping amount in the high range	0...100%
j	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	-Wet...-1:99, Dry, 1:99...Wet Fx:010, D^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100



027: St.Vibrato (Stereo Vibrato)

This effect causes the pitch of the input signal to shimmer. Using the AutoFade allows you to increase or decrease the shimmering speed.



a	LFO Wave (LFO Waveform) Selects LFO Waveform	Triangle, Sine
	Shape (LFO Shape) Determines how much the LFO waveform is changed	-100...+100 Fx:020
b	LFO Freq Mod (LFO Frequency Mod) Switches between Dmod and AUTOFADE for the LFO frequency modulation	Dmod, AUTOFADE Fx:009
	Freq (LFO Frequency) Sets the LFO speed	0.02...20.00Hz Fx:009, D^{mod}
c	(Source) Selects the modulation source of LFO speed	Off...Tempo
	(Amount) Sets the modulation amount of LFO speed	-20.00...+20.00Hz
d	BPM/MIDI Sync Switches between using the frequency of the LFO speed and using the tempo and notes	Off, On Fx:009, Sync
	BPM Selects MIDI Clock and assigns tempo	MIDI, 40...240 Fx:009
	Base (Base Note) Selects the type of notes that specify the LFO speed	♪, ♪, ♫, ♬, ♭, ♮, ♯, ♯ Fx:009
	Times Sets the number of notes that specify the LFO speed	1...16 Fx:009
e	Depth Sets the depth of LFO modulation	0...100 D^{mod}
	(Source) Selects the modulation source of the LFO modulation depth	Off...Tempo
	(Amount) Sets the modulation amount of the LFO modulation depth	-100...+100
f	AUTOFADE Src (AUTOFADE Source) Selects the modulation source that starts AutoFade	Off...Tempo Fx:009, D^{mod}
	Fade Rate (Fade-In Rate) Sets the rate of fade-in	1...100 Fx:009
g	Dly (Fade-In Delay) Sets the fade-in delay time	00...2000ms Fx:009
	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D^{mod}
h	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

b: LFO Freq Mod, f: AUTOFADE Src, g: Fade Rate, g: Dly

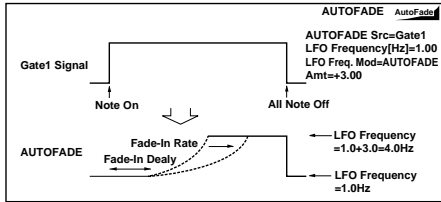
When "LFO Freq Mod" is set to **AUTOFADE**, you can use the modulation source selected in "AUTO FADE Src" as a trigger to automatically fade in the modulation amount. When "BPM/MIDI Sync" is set to **On**, you cannot use this.

The "Fade Rate" parameter specifies the rate of fade-in. The "Dly" parameter determines the time from AutoFade modulation source ON until the fade-in starts.

The following is an example of fade-in where the LFO speed is increased from "1.0Hz" to "4.0Hz" when a note-on message is received.

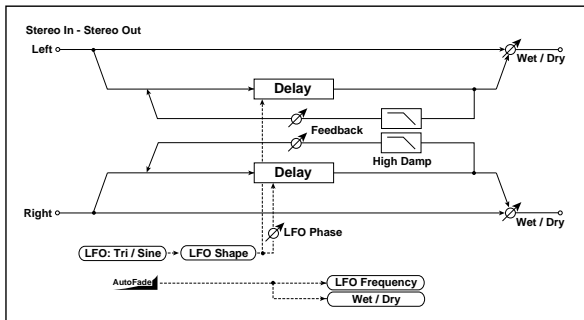
"AUTOFADE Src"=Gate1, "Freq"=1.00 Hz
 "LFO Freq Mod"=AUTOFADE, "(Amount)"=+3.00

MIDI The effect is off when a value for the dynamic modulation source specified for the "AUTOFADE Src" parameter is smaller than 64, and the effect is on when the value is 64 or higher. The AutoFade function is triggered when the value changes from 63 or smaller to 64 or higher.



028: St.AutoFd Mod (Stereo Auto Fade Modulation)

This stereo chorus/flanger effect enables you to control the LFO speed and effect balance using auto fade, and you can spread the sound by offsetting the phase of the left and right LFOs from each other.

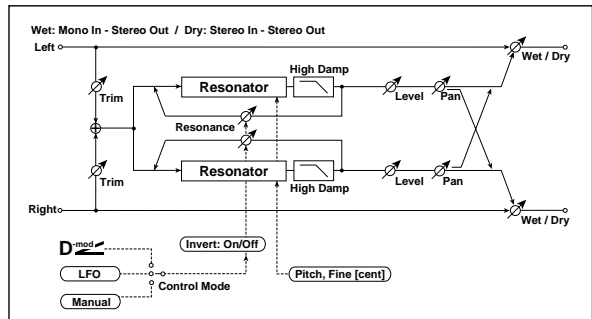


a	LFO Wave (LFO Waveform) Selects LFO Waveform	Tri, Sine
	Shape (LFO Shape) Determines how much the LFO waveform is changed	-100...+100 Fx:020
b	LFO Phase Sets the LFO phase difference between the left and right	-180...+180deg Fx:010
c	Freq (LFO Frequency) Sets the LFO speed	0.02...20.00Hz D-mod
	(Source) Selects the modulation source of LFO speed	Off...Tempo
	(Amount) Sets the modulation amount of LFO speed	-20.00...+20.00Hz
d	L Dly (L Pre Delay) Sets the left channel delay time	0.0...500.0ms
	R Dly (R Pre Delay) Sets the right channel delay time	0.0...500.0ms
e	Dep (Depth) Sets the depth of LFO modulation	0...200
	Fb (Feedback) Sets the feedback amount	-100...+100 Fx:020
	HD (High Damp) Sets the feedback damping amount in the high range	0...100% Fx:020
f	AUTOFADE Src (AUTOFADE Source) Selects the modulation source that starts AutoFade	Off...Tempo Fx:027, D-mod
g	Fade Rate (Fade-In Rate) Sets the rate of fade-in	1...100 Fx:027
	Dly (Fade-In Delay) Sets the fade-in delay time	00...2000ms Fx:027

h	Freq Mod (LFO Frequency Mod) Switches between D-mod and AUTOFADE for the LFO frequency modulation	D-mod, AUTOFADE Fx:027
i	W/D Mod (Wet/Dry Mod) Switches between D-mod and AUTOFADE for the effect balance modulation	D-mod, AUTOFADE Fx:027
j	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	-Wet...-1:99, Dry, 1:99...Wet Fx:010, 020, D-mod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

029: 2Voice Reso (2Voice Resonator)

This effect resonates the input signal at a specified pitch. You can set the pitch, output level, and pan settings for two resonators individually. You can control the resonance intensity via an LFO.



a	Ctrl (Control Mode) Switches the controls of resonance intensity	Manual, LFO, Dmod Fx:027, D-mod
	Invert (LFO/Dmod Invert) Reverses the Voice 1 and 2 control when LFO/Dmod is selected	Off, On Fx:027
b	lfoF (LFO Frequency) Sets the LFO speed	0.02...20.00Hz
	Dmod (Dmod Source) Selects the modulation source that controls resonance intensity	Off...Tempo
c	Mod Dep (Mod Depth) Sets the amount of resonance intensity control via LFO/Dmod	-100...+100
	Trim Sets the input level at the resonator	0...100
d	V1 Pitch (Voice1 Pitch) Sets the voice1 Pitch for resonance	C0...B8
	Fine Fine-adjusts the voice 1 pitch for resonance	-50...+50cent
e	V1 Reso (Voice1 Resonance) Sets the intensity of resonance when Control Mode = Manual	-100...+100 Fx:027
	HiDamp (High Damp) Sets the damping amount of resonant sound in the high range	0...100% Fx:027
f	V1 Level (Voice1 Level) Sets the Voice1 output level	0...100
	Pan Sets the Voice1 stereo image	L6...R6
g	V2 Pitch (Voice2 Pitch) Sets the Voice2 Pitch for resonance	C0...B8
	Fine Fine-adjusts the voice 2 pitch for resonance	-50...+50cent
h	V2 Reso (Voice2 Resonance) Sets the intensity of resonance when Control Mode = Manual	-100...+100 Fx:027
	HiDamp (High Damp) Sets the damping amount of resonant sound in the high range	0...100% Fx:027

i	V2 Level (Voice2 Level) Sets the Voice2 output level	0...100
	Pan Sets the Voice2 stereo image	L6...R6
j	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: Ctrl, e: V1 Reso, h: V2 Reso

This parameter determines the resonance intensity. When "Ctrl" = **Manual**, the "Reso" parameter sets the intensity of resonance. If the "Reso" parameter has a negative value, harmonics will be changed, and resonance will occur at a pitch one octave lower.

When "Ctrl" = **LFO**, the intensity of resonance varies according to the LFO. The LFO sways between positive and negative values, causing resonance to occur between specified pitches an octave apart in turn.

When "Ctrl" = **Dmod**, the resonance is controlled by the dynamic modulation source. If **JS X** or **Rbn#16** is assigned as the modulation source, the pitch an octave higher and lower can be controlled, similar to when LFO is selected for Control Mode.

a: Invert

When "Ctrl" = **LFO** or **Dmod**, the controlled phase of either Voice 1 or 2 will be reversed. When the resonance pitch is set for Voice 1 (Resonance has a positive value), Voice 2 will resonate at a pitch an octave below (Resonance has a negative value).

d: V1 Pitch, d: Fine, g: V2 Pitch, g: Fine

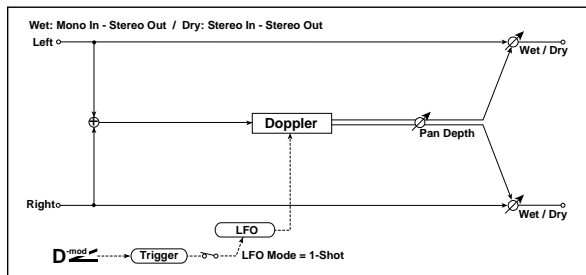
The Pitch parameter specifies the pitch of resonance by note name. The "Fine" parameter allows for fine adjustment in steps of cents.

e: HiDamp, h: HiDamp

This parameter sets the damping amount of resonant sound in the high range. Lower values will make a metallic sound with a higher range of harmonics.

030: Doppler

This effect simulates the "Doppler effect" of a moving sound with a changing pitch, similar to the siren of an passing ambulance. Mixing the effect sound with the dry sound will create a unique chorus effect.



a	Mode (LFO Mode) Switches LFO operation mode	Loop, 1-Shot E ³ , D ^{mod}
	Src (Source) When LFO Mode is set to 1-Shot, this modulation source triggers the LFO	Off...Tempo E ³
b	LFO Sync Switches between LFO reset on and off when LFO Mode is set to Loop	Off, On E ³

c	Freq (LFO Frequency) Sets the LFO speed	0.02...20.00Hz E ³ Fx:009, D ^{mod}
	(Source) Selects the modulation source of LFO speed	Off...Tempo
d	(Amount) Sets the modulation amount of LFO speed	-20.00...+20.00Hz
	BPM/MIDI Sync Switches between using the frequency of the LFO speed and using the tempo and notes	Off, On E ³ Fx:009, S ^{Sync}
	BPM Selects MIDI Clock and assigns tempo	MIDI, 40...240 E ³ Fx:009
e	Base (Base Note) Selects the type of notes that specify the LFO speed	E ³ , Fx:009
	Times Sets the number of notes that specify the LFO speed	1...16 E ³ Fx:009
f	Pitch Dep (Pitch Depth) Sets the pitch variation of the moving sound	0...100 E ³ , D ^{mod}
	(Source) Selects the modulation source of pitch variation	Off...Tempo
g	(Amount) Sets the modulation amount of pitch variation	-100...+100
	Pan Dep (Pan Depth) Sets the panning of the moving sound	-100...+100 E ³ , D ^{mod}
h	(Source) Selects the modulation source of panning	Off...Tempo
	(Amount) Sets the modulation amount of panning	-100...+100
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: Mode, a: Src, b: LFO Sync

The "Mode" parameter switches LFO operation mode. When **Loop** is selected, the Doppler effect will be created repeatedly. If "LFO Sync" is set to **On**, the LFO will be reset when the modulation source specified with the "Src" parameter is turned on. When "Mode" is set to **1-Shot**, the Doppler effect is created only once when the modulation source specified in the "Src" field is turned on. At this time if you do not set the "Src" parameter, the Doppler effect will not be created, and no effect sound will be output.

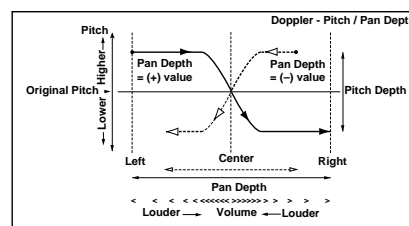
MIDI The effect is off when a value for the modulation source specified for the "Src" parameter is smaller than 64, and the effect is on when the value is 64 or higher. The Doppler effect is triggered when the value changes from 63 or smaller to 64 or higher.

e: Pitch Dep

With the Doppler effect, the pitch is raised when the sound approaches, and the pitch is lowered when the sound goes away. This parameter sets this pitch variation.

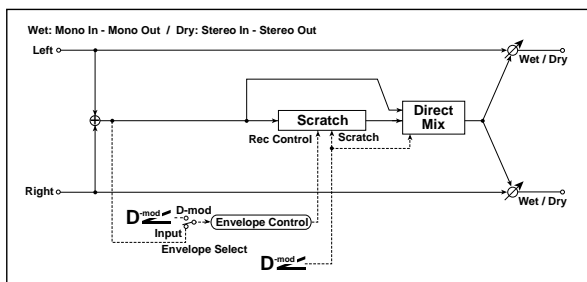
f: Pan Dep

This parameter sets the width of the stereo image of the effect sound. With larger values, the sound seems to come and go from much further away. With positive values, the sound moves from left to right; with negative values, the sound moves from right to left.



031: Scratch

This effect is applied by recording the input signal and moving the modulation source. It simulates the sound of scratches you can make using a turntable.



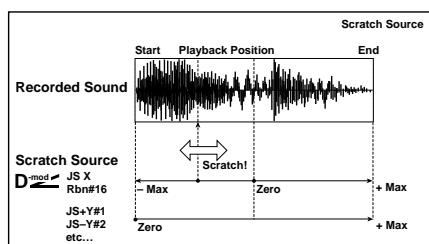
f: Direct Mix

With **Always On**, a dry sound is usually output. With **Always Off**, dry sounds are not output. With **Cross Fade**, a dry sound is usually output, and it is muted only when scratching. Set W/D to **Wet** to use this parameter effectively.

a	Scratch Source Selects the modulation source for simulation control	Off...Tempo [Icon], [D-mod]
b	Response(Scratch) Sets the speed of the response to the Scratch Source	0...100 [Icon]
c	Envelope (Envelope Select) Selects whether the start and end of recording is controlled via the modulation source or the input signal level	Dmod, Input [Icon], [D-mod]
	Src (Source) Selects the modulation source that controls recording when Envelope is set to Dmod	Off...Tempo [Icon]
d	Threshold Sets the recording start level when Envelope is set to Input	0...100 [Icon]
e	Response(Env) Sets the speed of the response to the end of recording	0...100 [Icon]
f	Direct Mix Selects how a dry sound is mixed	Always On, Always Off, Cross Fade [Icon]
g	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet [D-mod]
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: Scratch Source, b: Response(Scratch)

The Scratch Source parameter enables you to select the modulation source that controls simulation. The value of the modulation source corresponds to the playback position. The Response(Scratch) parameter enables you to set the speed of the response to the modulation source.



c: Envelope, c:Src, d: Threshold

When "Envelope" is set to **Dmod**, the input signal will be recorded only when the modulation source value is 64 or higher. When "Envelope" is set to **Input**, the input signal will be recorded only when its level is over the Threshold value. The maximum recording time is 1365msec. If this is exceeded, the recorded data will start being erased from the top.

e: Response(Env)

This parameter enables you to set the speed of the response to the end of recording. Set a smaller value when you are recording a phrase or rhythm pattern, and set a higher value if you are recording only one note.

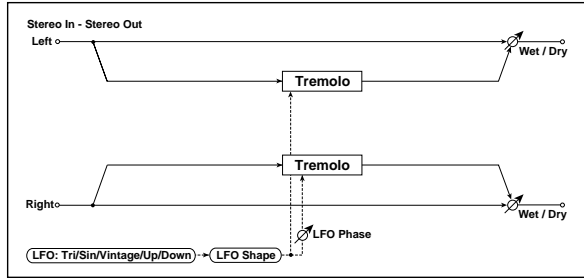
Mod./P.Shift

Other modulation and pitch shift effects

032: St.Tremolo

(Stereo Tremolo)

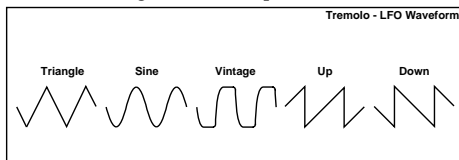
This effect modulates the volume level of the input signal. The effect is stereo, and offsetting the LFO of the left and right phases from each other produces a tremolo effect between left and right.



a	LFO Wave (LFO Waveform) Selects LFO Waveform	Tri, Sine, Vintg, Up, Down	
	Shape (LFO Shape) Determines how much the LFO waveform is changed	-100...+100	Fx:020
b	LFO Phase Sets the LFO phase difference between the left and right	-180...+180deg	
c	Freq (LFO Frequency) Sets the LFO speed	0.02...20.00Hz	Fx:009, D ^{mod}
	(Source) Selects the modulation source of LFO speed	Off...Tempo	
	(Amount) Sets the modulation amount of LFO speed	-20.00...+20.00Hz	
d	BPM/MIDI Sync Switches between using the frequency of the LFO speed and using the tempo and notes	Off, On	Fx:009, Sync
	BPM Selects MIDI Clock and assigns tempo	MIDI, 40...240	Fx:009
	Note (Base Note) Selects the type of notes that specify the LFO speed	♪, ♪, ♫, ♬, ♮, ♯, ♭, ♭♭, ♮	Fx:009
	Times Sets the number of notes that specify the LFO speed	1...16	Fx:009
e	Depth Sets the depth of LFO modulation	0...100	D ^{mod}
	(Source) Selects the modulation source of the depth of modulation	Off...Tempo	
	(Amount) Sets the modulation amount of the depth of modulation	-100...+100	
f	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet	D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo	
	(Amount) Sets the modulation amount of the effect balance	-100...+100	

a:LFO Wave

This parameter selects the LFO waveform. **Vintg (Vintage)** wave simulates the characteristics of the tremolo created on a guitar amplifier. Combining this effect with the Amp Simulation will make a realistic, vintage tremolo amplifier sound.



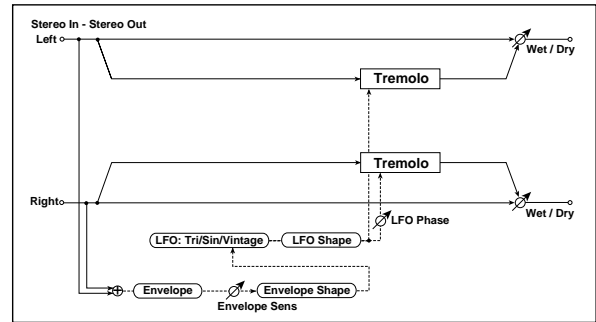
b: LFO Phase

This parameter determines the difference between the left and right LFO phases. A higher value will simulate the auto-pan effect in which the sound is panned between left and right.

033: St.Env. Tremlo

(Stereo Envelope Tremolo)

This effect uses the input signal level to modulate a stereo tremolo. You can simulate a tremolo effect that becomes deeper as it fades out while the level gets lower.



a	Envelope Sens (Envelope Sensitivity) Sets the envelope sensitivity of the input signal	0...100	
b	Envelope Shape Sets the envelope curve shape of the input signal	-100...+100	
c	LFO Wave (LFO Waveform) Selects LFO Waveform	Tri, Sine, Vintg	
	Shape (LFO Shape) Determines how much the LFO waveform is changed	-100...+100	Fx:020
d	LFO Phase Sets the LFO phase difference between the left and right	-180...+180deg	Fx:032
e	Freq (LFO Frequency) Sets the LFO speed	0.02...20.00Hz	
	(Envelope Amount) Sets the changes of the LFO speed according to the input signal level	-20.00...+20.00Hz	
f	Depth Sets the depth of LFO modulation	0...100	
	(Envelope Amount) Sets the changes of the modulation depth according to the input signal level	-100...+100	
g	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet	D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo	
	(Amount) Sets the modulation amount of the effect balance	-100...+100	

e: Freq, e: (Envelope Amount), f: Depth, f: (Envelope Amount)

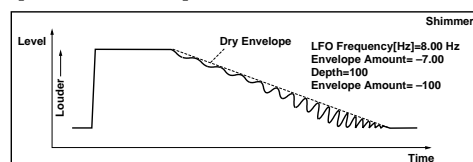
These parameters set the modulation via an envelope (input signal level).

The "LFO speed" is obtained by adding the "Freq" value to the "(Envelope Amount)" value multiplied by the input signal. The LFO modulation depth is obtained by adding the Depth value to the "(Envelope Amount)" value multiplied by the input signal level.

- The following example indicates that the "Depth" is 0 with an LFO Frequency of 1.0Hz and the maximum input, and that the "Depth" is 100 with a Frequency of 8.0 Hz with zero input.

"Freq"=8.00 Hz, "Envelope Amount"=-7.00

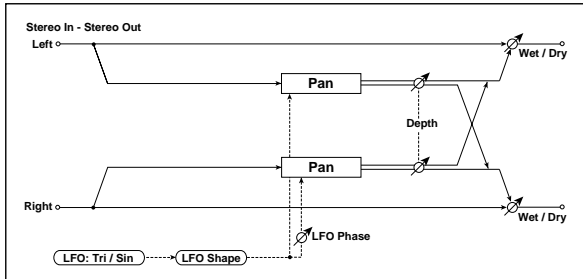
"Depth"=100, "Envelope Amount"=-100



034: St.Auto Pan

(Stereo Auto Pan)

This Auto Pan effect pans sound between left and right. It is stereo, and shifting the left and right LFO phases from each other will simulate the sound of the left and right channels crossing over each other by turns, or chasing each other.



a	LFO Wave (LFO Waveform) Selects LFO Waveform	Tri, Sine
	Shape (LFO Shape) Determines how much the LFO waveform is changed	-100...+100
b	LFO Phase Sets the LFO phase difference between the left and right	-180...+180deg
	<td>Freq (LFO Frequency) Sets the LFO speed</td> <td>0.02...20.00Hz</td>	Freq (LFO Frequency) Sets the LFO speed
c	(Source) Selects the modulation source of LFO speed	Off...Tempo
	(Amount) Sets the modulation amount of LFO speed	-20.00...+20.00Hz
d	BPM/MIDI Sync Switches between using the frequency of the LFO speed and using the tempo and notes	Off, On
	BPM Selects MIDI Clock and assigns tempo	MIDI, 40...240
	Base (Base Note) Selects the type of notes that specify the LFO speed	MIDI, 40...240
e	Depth Sets the depth of LFO modulation	0...100
	(Source) Selects the modulation source of the depth of modulation	Off...Tempo
	(Amount) Sets the modulation amount of the depth of modulation	-100...+100
f	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: Shape

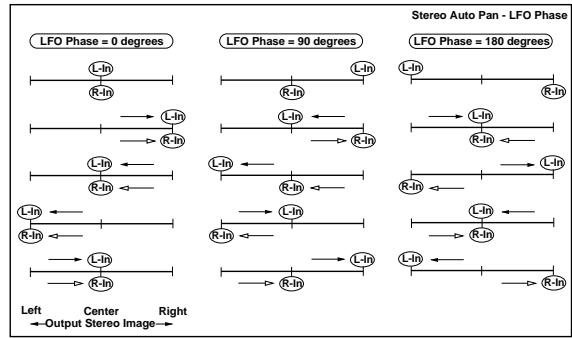
You can change the panning curve by modifying the LFO waveform.

b: LFO Phase

This parameter determines the difference in the left and right LFO phases. When you change the value gradually from 0, the sound from the left and right channels will chase each other around. If you set the parameter to +180 or -180, the sound from each channel will cross over each other.

You need to input different sounds to each channel in order for

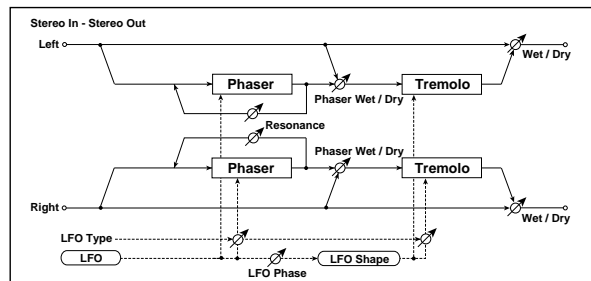
this parameter to be effective.



035: St.Phasr+Trml

(Stereo Phaser + Tremolo)

This effect has a stereo phaser and tremolo LFOs linked together. Swelling phaser modulation and tremolo effects synchronize with each other, creating a soothing modulation effect. It is suitable for electric piano type sounds.



a	Type: Selects the type of the tremolo and phaser LFOs	Phs - Trml...Phs LR - Trml LR
	LFO Phase Sets the phase difference between the tremolo and phaser LFOs	-180...+180deg
c	Freq (LFO Frequency) Sets the LFO speed	0.02...20.00Hz
	(Source) Selects the modulation source of LFO speed	Off...Tempo
d	(Amount) Sets the modulation amount of LFO speed	-20.00...+20.00Hz
	BPM/MIDI Sync Switches between using the frequency of the LFO speed and using the tempo and notes	Off, On
	BPM Selects MIDI Clock and assigns tempo	MIDI, 40...240
e	Base (Base Note) Selects the type of notes that specify the LFO speed	MIDI, 40...240
	Times Sets the number of notes that specify the LFO speed	1...16
f	P Manu (Phaser Manual) Sets the phaser frequency range	0...100
	Resonanc (Resonance) Sets the phaser resonance amount	-100...+100
f	P Dep (Phaser Depth) Sets the phaser modulation depth	0...100
	(Source) Selects the modulation source for the phaser modulation depth	Off...Tempo
	(Amount) Sets the modulation amount of the phaser modulation depth	-100...+100

g	P W/D (Phaser W/D)	-Wet...-2:99, Dry, 2:99...Wet	
	Sets the balance between the phaser effect and dry sounds		
h	T Shape (Tremolo Shape)	-100...+100	
	Sets the degree of the tremolo LFO shaping Fx:020		
h	T Dep (Tremolo Depth)	0...100	
	Sets the tremolo modulation depth D ^{mod}		
	(Source)	Off...Tempo	
(Amount)			-100...+100
Sets the modulation amount of the tremolo modulation depth			
i	W/D (Wet/Dly)	Dry, 1:99...99:1, Wet	
	Sets the balance between the effect and dry sounds D ^{mod}		
	(Source)	Off...Tempo	
(Amount)			-100...+100
Sets the modulation amount of the effect balance			

a: Type, b: LFO Phase

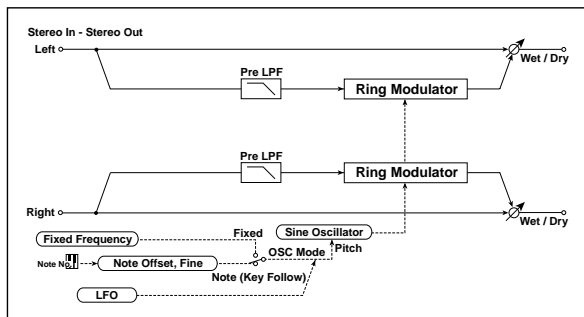
Select the type of phaser LFO and tremolo LFO for the “Type” parameter. How the effect sound moves or rotates depends on the type of LFO. Selecting “LFO Phase” enables you to offset the timing of the phaser peak and control a subtle movement and rotation of the sound.

f: P W/D, i: W/D

The “P W/D” parameter sets the balance between the phaser output and the dry sound. The “W/D” parameter sets the balance between the final phaser and tremolo output level and the dry sound.

036: St.Ring Mod (Stereo Ring Modulator)

This effect creates a metallic sound by applying the oscillators to the input signal. Use the LFO or Dynamic Modulation to modulate the oscillator to create a radical modulation. Matching the oscillator frequency with a note number will produce a ring modulation effect in specific key ranges.



a	Pre LPF	0...100	
	Sets the damping amount of the high range input to the ring modulator		
b	OSC Mode	Fixed, Note (Key Follow)	
	Switching between specifying the oscillator frequency and using a note number		
c	F (Fixed Frequency)	0...12.00kHz	
	Sets the oscillator frequency when OSC Mode is set to Fixed D ^{mod}		
	(Source)	Off...Tempo	
(Amount)			-12.00...+12.00kHz
Sets the modulation amount of the oscillator frequency when OSC Mode is set to Fixed			

d	Note Offset	-48...+48	
	Sets the pitch difference from the original note when OSC Mode is set to Note (Key Follow)		
e	Fine (Note Fine)	-100...+100	
	Fine-adjusts the oscillator frequency		
e	lfoF (LFO Frequency)	0.02...20.00Hz	
	Sets the LFO speed of the oscillator frequency modulation Fx:009, D ^{mod}		
	(Source)	Off...Tempo	
(Amount)			-20.00...+20.00Hz
Sets the modulation amount of LFO speed			
f	BPM/MIDI Sync	Off, On	
	Switches between using the frequency of the LFO speed and using the tempo and notes Fx:009, Sync		
	BPM	MIDI, 40...240	
	Sets MIDI Clock and assigns tempo Fx:009		
g	Base (Base Note)		
	Selects the type of notes that specify the LFO speed Fx:009		
g	Times	1...16	
	Sets the number of notes that specify the LFO speed Fx:009		
g	Depth (LFO Depth)	0...100	
	Sets the depth of LFO modulation for the oscillator frequency D ^{mod}		
	(Source)	Off...Tempo	
(Amount)			-100...+100
Sets the modulation amount of the depth of modulation			
h	W/D (Wet/Dly)	Dry, 1:99...99:1, Wet	
	Sets the balance between the effect and dry sounds D ^{mod}		
	(Source)	Off...Tempo	
(Amount)			-100...+100
Sets the modulation amount of the effect balance			

a: Pre LPF

This parameter enables you to set the damping amount of the high range sound input to the ring modulator. If the input sound contains lots of harmonics, the effect may sound dirty. In this case, cut a certain amount of high range.

b: OSC Mode

This parameter determines whether or not the oscillator frequency follows the note number.

c: F

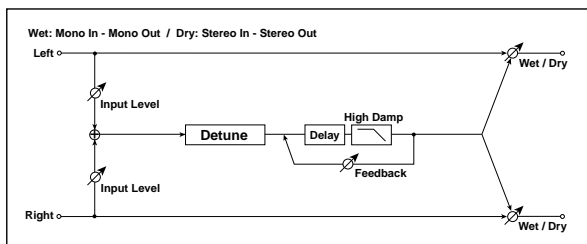
This parameter sets the oscillator frequency when “OSC Mode” is set to Fixed.

d: Note Offset, d: Fine

These parameters for the oscillator are used when “OSC Mode” is set to Note (Key Follow). The “Note Offset” sets the pitch difference from the original note in semitone steps. The “Fine” parameter fine-adjusts the pitch in cent steps. Matching the oscillator frequency with the note number produces a ring modulation effect in the correct key.

037: Detune

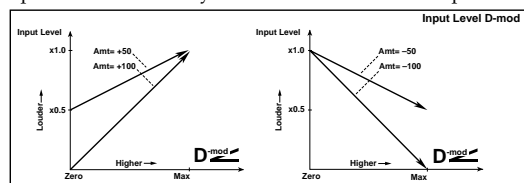
Using this effect, you can obtain a detune effect that offsets the pitch of the effect sound slightly from the pitch of the input signal. Compared to the chorus effect, a more natural sound thickness will be created.



a	Sft (Pitch Shift) Sets the pitch difference from the input signal	-100...+100cent	
	(Source) Selects the modulation source of the pitch shift	Off...Tempo	
	(Amount) Sets the modulation amount of the pitch shift	-100...+100cent	
b	Delay (Delay Time) Sets the delay time	0...1000ms	
c	Feedback Sets the feedback amount	-100...+100	
d	High Damp Sets the damping amount in the high range	0...100%	
e	InLvl Mod (Input Level Dmod [%]) Sets the modulation amount of the input level	-100...+100	
	Src (Source) Selects the modulation source for the input level	Off...Tempo	
f	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet	
	(Source) Selects the modulation source of the effect balance	Off...Tempo	
	(Amount) Sets the modulation amount of the effect balance	-100...+100	

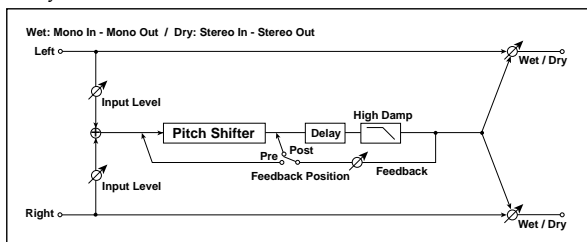
e: InLvl Mod, e: Src

This parameter sets the dynamic modulation of the input level.



038: Pitch Shifter

This effect changes the pitch of the input signal. You can select from three types: Fast (quick response), Medium, and Slow (preserves tonal quality). You can also create an effect in which the pitch is gradually raised (or dropped) using the delay with feedback.



a	Mode Switches Pitch Shifter mode	Slow, Medium, Fast	
b	Shift (Pitch Shift) Sets the pitch shift amount by steps of a semitone	-24...+24	
	(Source) Selects the modulation source of pitch shift amount	Off...Tempo	
	(Amount) Sets the modulation amount of pitch shift amount	-24...+24	
c	Fine Sets the pitch shift amount by steps of a cent	-100...+100cent	
	(Amount) Sets the modulation amount of pitch shift amount	-100...+100cent	
d	Delay (Delay Time) Sets the delay time	0...1000ms	
e	Feedback Position Switches the feedback connection.	Pre, Post	
f	Feedback Sets the feedback amount	-100...+100	
	HiDamp (High Damp) Sets the damping amount in the high range	0...100%	
g	InLvl Mod (Input Level Dmod [%]) Sets the modulation amount of the input level	-100...+100	
	Src (Source) Selects the modulation source for the input level	Off...Tempo	
h	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet	
	(Source) Selects the modulation source of the effect balance	Off...Tempo	
	(Amount) Sets the modulation amount of the effect balance	-100...+100	

a: Mode

This parameter switches the pitch shifter operating mode. With **Slow**, tonal quality will not be changed too much. With **Fast**, the effect becomes a Pitch Shifter that has a quick response, but may change the tone. **Medium** is in between these two. If you do not need to set too much pitch shift amount, set this parameter to **Slow**. If you wish to change the pitch significantly, use **Fast**.

b: Shift, b: (Source), b: (Amount), c: Fine, c: (Amount)

The amount of pitch shift will use the value of the "Shift" plus the "Fine" value. The amount of modulation will use the c: (Amount) value plus d: "(Amount)."

Modulation Source is used both for "Shift" and "Fine."

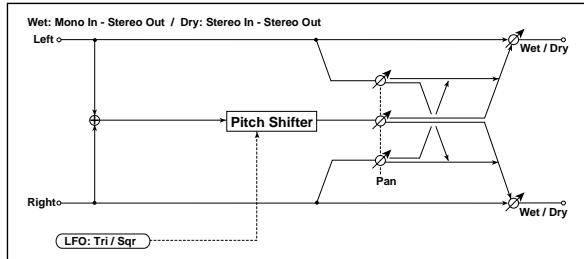
e: Feedback Position, f: Feedback

When "Feedback Position" is set to **Pre**, the pitch shifter output is again input to the pitch shifter. Therefore, if you specify a higher value for the Feedback parameter, the pitch will be raised (or lowered) more and more each time feedback is repeated.

If "Feedback Position" is set to **Post**, the feedback signal will not pass through the pitch shifter again. Even if you specify a higher value for the Feedback parameter, the pitch-shifted sound will be repeated at the same pitch.

039: PitchShft Mod (Pitch Shift Modulation)

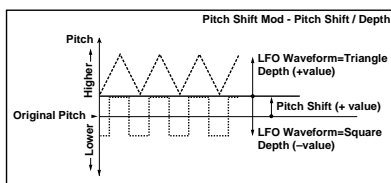
This effect modulates the detuned pitch shift amount using an LFO, adding a clear spread and width to the sound by panning the effect sound and dry sound to the left and right. This is especially effective when the effect sound and dry sound output from stereo speakers are mixed.



a	Pitch Shift Sets the pitch difference from the input signal	-100...+100cent
b	LFO Wave (LFO Waveform) Selects LFO Waveform	Triangle, Square
c	Freq (LFO Frequency) Sets the LFO speed	0.02...20.00Hz Fx:009, D ^{mod}
	(Source) Selects the modulation source of LFO speed	Off...Tempo
d	(Amount) Sets the modulation amount of LFO speed	-20.00...+20.00Hz
	BPM/MIDI Sync Switches between using the frequency of the LFO speed and using the tempo and notes	Off, On Fx:009,
	BPM Selects MIDI Clock and assigns tempo	MIDI, 40...240 Fx:009
e	Base (Base Note) Selects the type of notes that specify the LFO speed	Fx:009
	Times Sets the number of notes that specify the LFO speed	1...16 Fx:009
f	Depth Sets the LFO modulation depth for pitch shift amount	-100...+100 Fx:009, D ^{mod}
	(Source) Selects the modulation source of the depth of modulation	Off...Tempo
g	(Amount) Sets the modulation amount of the depth of modulation	-100...+100
	Pan Sets the panning effect sound and dry sound separately	L, 1:99...99:1, R
h	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet Fx:009, D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: Pitch Shift [cent], e: Depth

These parameters set the amount of pitch shift and amount of modulation by means of the LFO.

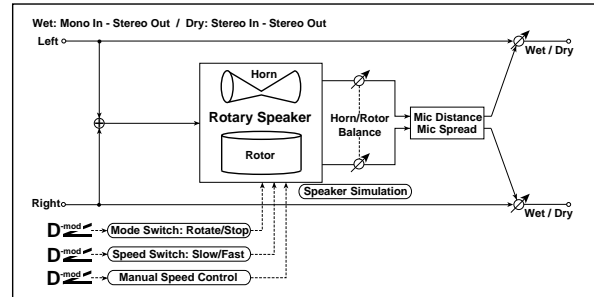


f: Pan, g: W/D

The Pan parameter pans the effect sound and dry sound to the left and right. With L, the effect sound is panned left, and the dry sound is panned right. With a W/D = **Wet** setting, the effect and dry sound will be output in a proportion of 1:1.

040: Rotary SP (Rotary Speaker)

This effect simulates a rotary speaker, and obtains a more realistic sound by simulating the rotor in the low range and the horn in the high range separately. The effect also simulates the stereo microphone settings.



	Mode (Mode Switch) Switches between speaker rotation and stop	Rotate, Stop D ^{mod}
a	(Source) Selects the modulation source that toggles between rotation and stop	Off...Tempo
	(Sw) Selects switching mode of the modulation source that toggles between rotation and stop	Tggl, Mmnt Fx:009
b	Speed (Speed Switch) Switches the speaker rotation speed between slow and fast	Slow, Fast D ^{mod}
	(Source) Selects the modulation source that toggles between slow and fast	Off...Tempo
c	(Sw) Selects switching mode of the modulation source that toggles between slow and fast	Tggl, Mmnt Fx:009
	H/R.Bal (Horn/Rotor Balance) Sets the level balance between the high-range horn and low-range rotor	Rot, 1...99, Hrn
d	ManuSp (Manual Speed Control) Selects the modulation source in case the rotation speed is changed directly	Off...Tempo Fx:009, D ^{mod}
	Horn Accel (Horn Acceleration) How quickly the horn rotation speed in the high range is switched	0...100 Fx:009
e	Ratio (Horn Ratio) Adjusts the (high-range side) horn rotation speed. Standard value is 1.00. Selecting "Stop" will stop the rotation	Stop, 0.50...2.00
	Rotor Accel (Rotor Acceleration) Determines how quickly the rotor rotation speed in the low range is switched	0...100 Fx:009
f	Ratio (Rotor Ratio) Adjusts the (low-range side) rotor rotation speed. Standard value is 1.00. Selecting "Stop" will stop the rotation	Stop, 0.50...2.00
	MicDistance Sets the distance between the microphone and rotary speaker	0...100 Fx:009
g	Spread (Mic Spread) Sets the angle of left and right microphones	0...100 Fx:009
	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: (Sw)

This parameter sets how the modulation source switches between rotation and stop.

When "Sw" = **Tggl (Toggle)**, the speaker rotates or stops alternately each time you press the pedal or operate the joystick.

MIDI Each time the value for the modulation source exceeds 64, the speaker rotates or stops alternately.

When "(Sw)" = **Mmnt (Moment)**, the speaker is rotating. It stops

only when you press the pedal or operate the joystick.

MIDI Rotation will occur when the value of the modulation source is less than 64, and will stop when the value is 64 or greater.

b: (Sw)

This parameter sets how the rotation speed (slow and fast) is switched via the modulation source.

When "(Sw)" = **Tgg1 (Toggle)**, the speed is switched between slow and fast each time you press the pedal or operate the joystick.

MIDI Slow/fast will alternate each time the value of the modulation source exceeds 64.

When "(Sw)" = **Mmnt (Moment)**, the speed is usually slow. It becomes fast only when you press the pedal or operate the joystick.

MIDI When a value for the modulation source is less than 64, "slow" speed is selected, and when the value is 64 or higher, "fast" is selected.

c: ManuSp

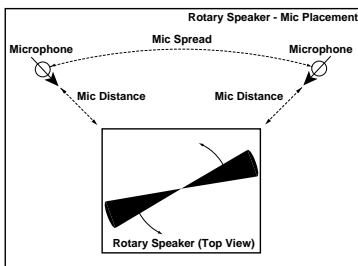
If you wish to control the speaker rotation speed manually, not switching between Slow and Fast, select the modulation source in the "ManuSp" field. If manual control is not necessary, set this field to **Off**.

d: Horn Accel, e: Rotor Accel

On a real rotary speaker, the rotation speed is accelerated or decelerated gradually after you switch the speed. The "Horn Accel" parameter sets the speed at which the rotation is accelerated or decelerated.

f: MicDistance, f: Spread

This is a simulation of stereo microphone settings.

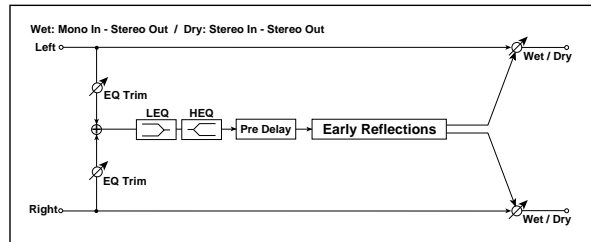


ER/Delay

Early reflection and delay effects

041: Early Reflect (Early Reflections)

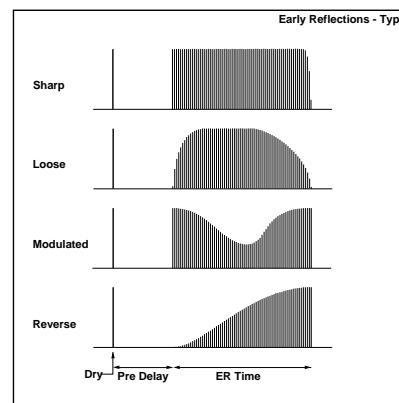
This effect is only the early reflection part of a reverberation sound, and adds presence to the sound. You can select one of the four decay curves.



a	Type Selects the decay curve for the early reflection	Sharp, Loose, Modulated, Reverse	ES
b	ER Time Sets the time length of early reflection	10...800ms	
c	Pre Delay Sets the time taken from the original sound to the first early reflection	0...200ms	
d	Pre EQ Trim Sets the input level of EQ applied to the effect sound	0...100	
e	LoEQ (Pre Low EQ Gain) Sets the gain of Low EQ	-15.0...+15.0dB	
	HiEQ (Pre High EQ Gain) Sets the gain of High EQ	-15.0...+15.0dB	
f	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet	D-mod
	(Source) Selects the modulation source of the effect balance	Off...Tempo	
	(Amount) Sets the modulation amount of the effect balance	-100...+100	

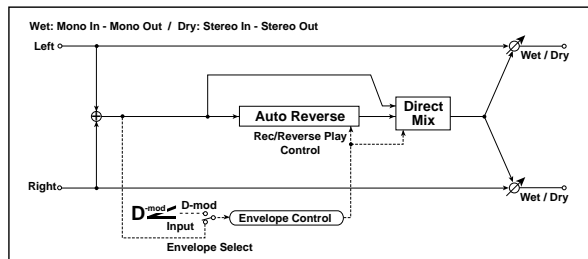
a: Type

This parameter selects the decay curve for the early reflection.



042: Auto Reverse

This effect records the input signal and automatically plays it in reverse (the effect is similar to a tape reverse sound).



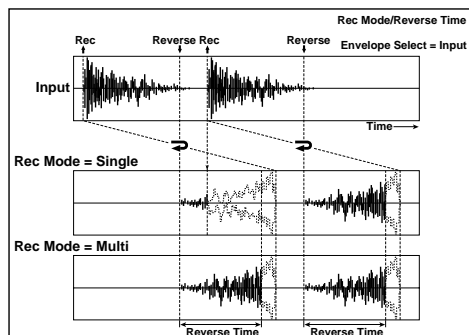
a	Rec Mode Sets the recording mode	Single, Multi E3F
b	Reverse Time Sets the maximum duration of the reverse playback	20...1320ms E3F
c	Envelope (Envelope Select) Selects whether the start and end of recording is controlled via the modulation source or the input signal level	Dmod, Input E3F, Dmod
	Src (Source) Selects the modulation source that controls recording when Envelope is set to Dmod	Off...Tempo E3F
d	Threshold Sets the recording start level when Envelope is set to Input	0...100 E3F
e	Response Sets the speed of the response to the end of recording	0...100 E3F Fx:031
f	Direct Mix Always On, Always Off, Cross Fade Selects how a dry sound is mixed	E3F Fx:031
g	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet Dmod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: Rec Mode, b: Reverse Time

When "Rec Mode" is set to **Single**, you can set up to 1320msec for "Reverse Time." If recording starts during the reverse playback, the playback will be interrupted.

When "Rec Mode" is set to **Multi**, you can make another recording during the reverse playback. However, the maximum Reverse Time is limited to 660msec.

If you wish to record a phrase or rhythm pattern, set "Rec Mode" to **Single**. If you record only one note, set "Rec Mode" to **Multi**. The "Reverse Time" parameter specifies the maximum duration of the reverse playback. The part in excess of this limit will not be played in reverse. If you wish to add short pieces of the reverse playback of single notes, make the "Reverse Time" shorter.



c: Envelope, c: Src, d: Threshold

These parameters select the source to control the start and end of recording.

When "Envelope" is set to **Dmod**, the input signal will be recorded only when the value of the modulation source selected

by the Src parameter is 64 or higher.

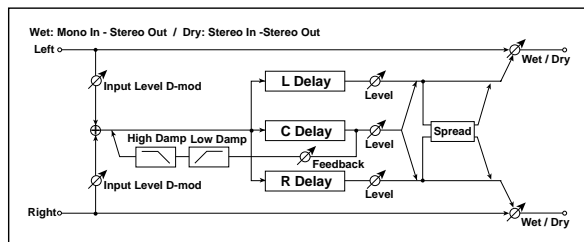
When "Envelope" is set to **Input**, the input signal will be recorded only when its level exceeds the Threshold level.

When recording is completed, reverse playback starts immediately.

043: LCR Delay

(L/C/R Delay)

This multitap delay outputs three Tap signals to the left, right, and center respectively. You can also adjust the left and right spread of the delay sound.



a	L Delay (L Delay Time) Sets the delay time of TapL	0...1360ms
	Level Sets the output level of TapL	0...50
b	C Delay (C Delay Time) Sets the delay time of TapC	0...1360ms
	Level Sets the output level of TapC	0...50
c	R Delay (R Delay Time) Sets the delay time of TapR	0...1360ms
	Level Sets the output level of TapR	0...50
d	C Fb (C Delay Feedback) Sets the feedback amount of TapC	-100...+100 Dmod
	(Source) Selects the modulation source of the TapC feedback amount	Off...Tempo
	(Amount) Sets the modulation amount of the TapC feedback amount	-100...+100
e	HiDamp (High Damp) Sets the damping amount in the high range	0...100% E3F
	LoDamp (Low Damp) Sets the damping amount in the low range	0...100% E3F
f	InLvl Mod (Input Level Dmod [%]) Sets the modulation amount of the input level	-100...+100 E3F Fx:037, Dmod
	Src (Source) Selects the modulation source for the input level	Off...Tempo E3F Fx:037
	Spread Sets the width of the stereo image of the effect sound	0...50 E3F
h	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet Dmod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

e: HiDamp, e: LoDamp

These parameters set the damping amount of high range and low range. The tone of the delayed sound becomes darker and lighter as it feeds back.

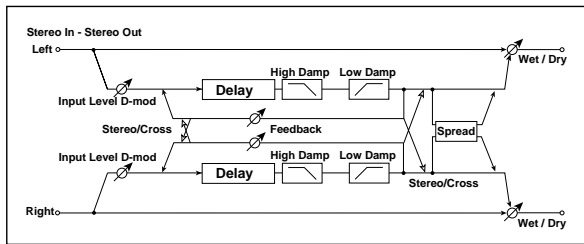
g: Spread

This parameter sets the pan width of the effect sound. The stereo image is widest with a value of 50, and the effect sound of both channels is output from the center with a value of 0.

044: St/Cross Dly

(Stereo/Cross Delay)

This is a stereo delay, and can be used as a cross-feedback delay effect in which the delay sounds cross over between the left and right by changing the feedback routing.

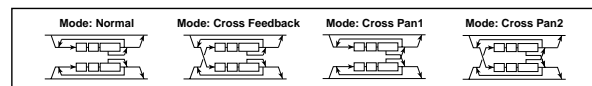
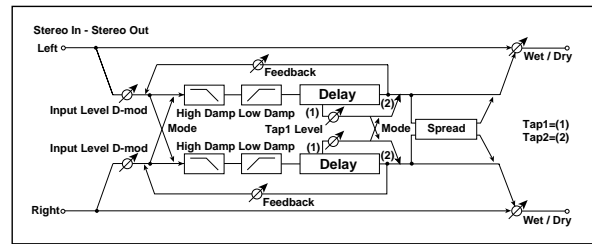


a	Stereo/Cross Switches between stereo delay and cross-feedback delay	Stereo, Cross
b	L Delay (L Delay Time) Sets the delay time for the left channel	0.0...680.0ms
c	R Delay (R Delay Time) Sets the delay time for the right channel	0.0...680.0ms
d	L Fb (L Feedback) Sets the feedback amount for the left channel	-100...+100 D-mod
	(Source) Selects the modulation source of feedback amount	Off...Tempo
e	(Amount L) Sets the modulation amount of the left channel feedback	-100...+100
	R Fb (R Feedback) Sets the feedback amount for the right channel	-100...+100 D-mod
f	(Amount R) Sets the modulation amount of the right channel feedback	-100...+100
	HiDamp (High Damp) Sets the damping amount in the high range	0...100% Fx:043
g	LoDamp (Low Damp) Sets the damping amount in the low range	0...100% Fx:043
h	InLvl Mod (Input Level Dmod [%]) Sets the modulation amount of the input level	-100...+100 Fx:037, D-mod
	Src (Source) Selects the modulation source for the input level	Off...Tempo Fx:037
i	Spread Sets the width of the stereo image of the effect sound	-50...+50 Fx:043
j	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D-mod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

045: St.MltTap Dly

(Stereo Multitap Delay)

The left and right Multitap Delays have two taps respectively. Changing the routing of feedback and tap output allows you to create various patterns of complex effect sounds.



a	Mode Switches the left and right delay routing	Normal, Cross Feedback, Cross Pan1, Cross Pan2
b	Tap1 Time Sets the Tap1 delay time	0.0...680.0ms
c	Tap2 Time Sets the Tap2 delay time	0.0...680.0ms
d	Tap1 Level Sets the Tap1 output level	0...100 Fx
	Fb(T2) (Tap2 Feedback) Sets the Tap2 feedback amount	-100...+100 D-mod
e	(Source) Selects the modulation source of the Tap2 feedback amount	Off...Tempo
	(Amount) Sets the modulation amount of the Tap2 feedback amount	-100...+100
f	HiDamp (High Damp) Sets the damping amount in the high range	0...100% Fx:043
	LoDamp (Low Damp) Sets the damping amount in the low range	0...100% Fx:043
g	InLvl Mod (Input Level Dmod [%]) Sets the modulation amount of the input level	-100...+100 Fx:037, D-mod
	Src (Source) Selects the modulation source for the input level	Off...Tempo Fx:037
h	Spread Sets the width of the stereo image of the effect sound	-100...+100 Fx:043, D-mod
	(Source) Selects the modulation source of the effect sound's stereo image width	Off...Tempo
	(Amount) Sets the modulation amount of the effect sound's stereo image width	-100...+100
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D-mod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: Mode

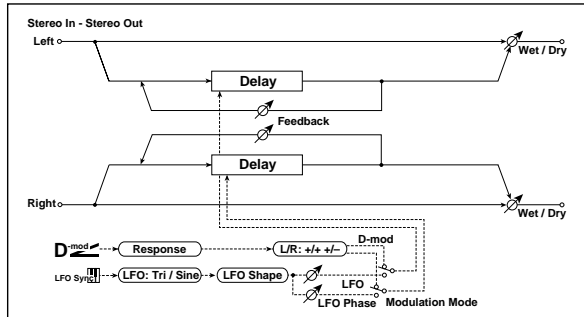
You can change how the left and right delay signals are panned by modifying the routing of the left and right delay as shown in the figure above. You need to input different sounds to each channel in order for this parameter to be effective.

d: Tap1 Level

This parameter sets the output level of Tap1. Setting a different level from Tap2 will add a unique touch to a monotonous delay and feedback.

046: St.Mod. Delay (Stereo Modulation Delay)

This stereo delay uses an LFO to sweep the delay time. The pitch also varies. You will obtain a delay sound with swell and shimmering. You can also control the delay time using a modulation source.



a	Mod Mode (Modulation Mode) Switches between LFO modulation control and modulation source control	LFO, Dmod
	Src (Source) Selects the modulation source that controls delay time	Off...Tempo
b	Dmod Reversed L/R control by modulation source	L/R: +/+, L/R: +/- E ³ , D ^{mod}
	Respons (Response) Sets the rate of response to the modulation source	0...30
c	LFO Wave (LFO Waveform) Selects LFO Waveform	Tri, Sine
	Shape (LFO Shape) Determines how much the LFO waveform is changed	-100...+100 E ³ Fx:020
d	LFO Freq (LFO Frequency) Sets the LFO speed	0.02...20.00Hz
e	LFO Sync Switches LFO reset off/on	Off, On E ³ , D ^{mod}
	Src (Source) Selects the modulation source that resets the LFO	Off...Tempo
f	L Phase (L LFO Phase) Sets the phase obtained when the left LFO is reset	-180...+180 E ³
	R Phase (R LFO Phase) Sets the phase obtained when the right LFO is reset	-180...+180 E ³
g	L Depth Sets the depth of the left LFO modulation	0...200
	R Depth Sets the depth of the right LFO modulation	0...200
h	L Dly (L Delay Time) Sets the left delay time	0.0...500.0
	R Dly (R Delay Time) Sets the right delay time	0.0...500.0
i	L Fb (L Feedback) Sets the feedback amount of left delay	-100...+100
	R Fb (R Feedback) Sets the feedback amount of right delay	-100...+100
j	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	-Wet...-1:99, Dry, 1:99...Wet E ³ Fx:010, D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

b: Dmod

When the modulation source is used for control, this parameter reverses the left and right modulation direction.

e: LFO Sync, e: Src, f: L Phase, f: R Phase

The LFO can be reset via a modulation source.

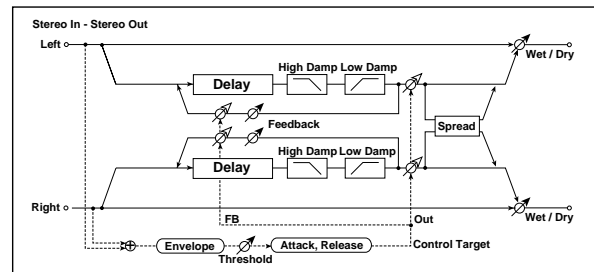
The "Src" parameter sets the modulation source that resets the LFO. For example, you can assign Gate as a modulation source so that the sweep always starts from the specified point.

"L Phase" and "R Phase" set the phase obtained when the left and right LFOs are reset. In this way, you can create changes in pitch sweep for the left and right channels individually.

MIDI The effect is off when a value of the modulation source specified in the "Src" parameter is 63 or smaller, and the effect is on when the value is 64 or higher. The LFO is triggered and reset to the "L Phase" and "R Phase" settings when the value changes from 63 or smaller to 64 or higher.

047: St.DynamicDly (Stereo Dynamic Delay)

This stereo delay controls the level of delay according to the input signal level. You can use this as a ducking delay that applies delay to the sound only when you play keys at a high velocity or only when the volume level is low.



a	Ctrl Target (Control Target) Selects from no control, output, and feedback	None, Out, FB E ³
	Pol (Polarity) Reverses level control	+, - E ³
b	Threshold Sets the level to which the effect is applied	0...100 E ³
	Offset Sets the offset of level control	0...100 E ³
c	Attack Sets the attack time of level control	1...100 E ³
	Release Sets the release time of level control	1...100 E ³
d	L Delay (L Delay Time) Sets the delay time for the left channel	0.0...680.0ms
e	R Delay (R Delay Time) Sets the delay time for the right channel	0.0...680.0ms
f	Feedback Sets the feedback amount	-100...+100
g	HiDamp (High Damp) Sets the damping amount in the high range	0...100% E ³ Fx:043
	LoDamp (Low Damp) Sets the damping amount in the low range	0...100% E ³ Fx:043
h	Spread Sets the width of the stereo image of the effect sound	-100...+100 E ³ Fx:043
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: Ctrl Target

This parameter selects no level control, delay output control (effect balance), or feedback amount control.

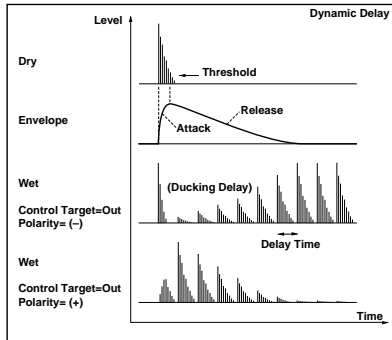
a: Pol, b: Threshold, b: Offset, c: Attack, d: Release

The "Offset" parameter specifies the value for the "Ctrl Target" parameter (that is set to None), expressed as the ratio relative to the parameter value (the "W/D" value with "Ctrl Target"=Out, or the "Feedback" value with "Ctrl Target"=FB).

When "Pol" is **positive**, the "Ctrl Target" value is obtained by multiplying the parameter value by the "Offset" value (if the input level is below the threshold), or equals the parameter value if the input level exceeds the threshold.

When "Pol" is **negative**, Ctrl Target value equals the parameter value if the input level is below the threshold, or is obtained by multiplying the parameter value by the "Offset" value if the level exceeds the threshold.

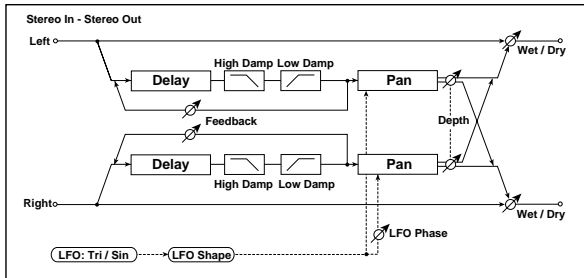
The "Attack" and "Release" parameters specify attack time and release time of delay level control.



048: St.AutoPanDly

(Stereo Auto Panning Delay)

This stereo delay effect pans the delay sound left and right using the LFO.



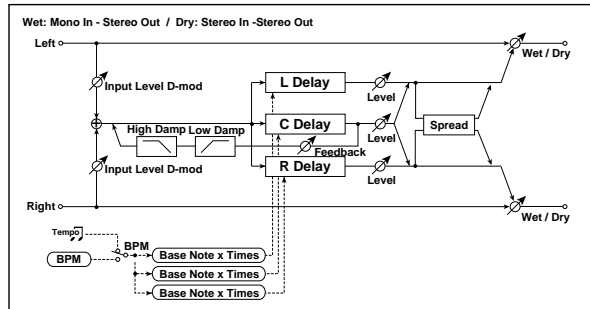
a	L Delay (L Delay Time)	0.0...680.0ms
	Sets the delay time for the left channel	
b	R Delay (R Delay Time)	0.0...680.0ms
	Sets the delay time for the right channel	
c	L Feedback	-100...+100
	Sets the feedback amount for the left channel	
d	R Feedback	-100...+100
	Sets the feedback amount for the right channel	
e	HiDamp (High Damp)	0...100% Fx:043
	Sets the damping amount in the high range	
e	LoDamp (Low Damp)	0...100% Fx:043
	Sets the damping amount in the low range	
f	LFO Wave (LFO Waveform)	Tri, Sine
	Selects LFO Waveform	
f	Shape (LFO Shape)	-100...+100 Fx:020
	Determines how much the LFO waveform is changed	
g	LFO Phase	-180...+180deg
	Sets the LFO phase difference between the left and right	Fx:034

h	Pan Freq (Panning Frequency)	0.02...20.00Hz
	Sets the panning speed	
i	Pan Dep (Panning Depth)	0...100
	Sets the panning width	D-mod
	(Source)	Off...Tempo
j	(Amount)	-100...+100
	W/D (Wet/Dly)	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds	D-mod
j	(Source)	Off...Tempo
	(Amount)	-100...+100
	Sets the modulation amount of the effect balance	

049: LCR BPM Delay

(L/C/R BPM Delay)

The L/C/R delay enables you to match the delay time with the song tempo. You can also synchronize the delay time with the arpeggiator or sequencer. If you program the tempo before performance, you can achieve a delay effect that synchronizes with the song in real-time. Delay time is set by notes.



a	BPM	MIDI, 40...240
	Selects MIDI Clock and assigns tempo	
b	L Bs (L Delay Base Note)	Notes icon
	Selects the type of notes to specify the delay time for TapL	
b	Times	1...16
	Sets the number of notes to specify the delay time for TapL	
c	Level	0...50
	Sets the output level of TapL	
c	C Bs (C Delay Base Note)	Notes icon
	Selects the type of notes to specify the delay time for TapC	
c	Times	1...16
	Sets the number of notes to specify the delay time for TapC	
c	Level	0...50
	Sets the output level of TapC	
d	R Bs (R Delay Base Note)	Notes icon
	Selects the type of notes to specify the delay time for TapR	
d	Times	1...16
	Sets the number of notes to specify the delay time for TapR	
d	Level	0...50
	Sets the output level of TapR	
e	C Fb (C Delay Feedback)	-100...+100
	Sets the feedback amount of TapC	D-mod
	(Source)	Off...Tempo
e	(Amount)	-100...+100
	Sets the modulation amount of the TapC feedback	
f	Time Over? >	----, OVER!
	Displays an error message when the delay time exceeds the upper limit	Fx:034

g	HiDamp (High Damp) Sets the damping amount in the high range	0...100% F _x :043
	LoDamp (Low Damp) Sets the damping amount in the low range	0...100% F _x :043
h	InLvl Mod (Input Level Dmod [%]) Sets the modulation amount of the input level	-100...+100 F _x :037, D _{mod}
	Src (Source) Selects the modulation source for the input level	Off...Tempo F _x :037
i	Spread Sets the width of the stereo image of the effect sound	0...50 F _x :043
j	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D _{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: BPM, b: L Bs, b: Times, c: C Bs, c: Times, d: R Bs, d: Times

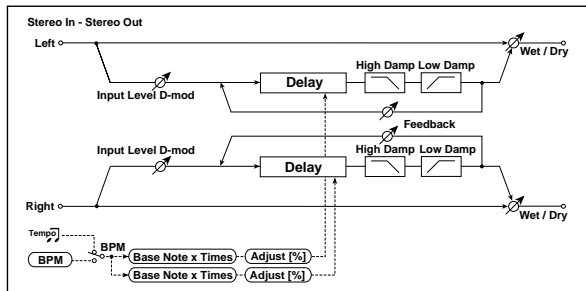
The delay time is the length of the note obtained by multiplying the "Bs" parameter by the Times value, in relation to the tempo specified by the "BPM" parameter (or the MIDI Clock tempo if "BPM" is set to **MIDI**).

f: Time Over? >

You can set the delay time up to 1365msec. If the delay time exceeds this limit, the error message "OVER!" appears in the display. Set the delay time parameters so that this message will not appear. "Time Over?>" is only a display parameter.

050: St.BPM Delay (Stereo BPM Delay)

This stereo delay enables you to set the delay time to match the song tempo.



a	BPM Selects MIDI Clock and assigns tempo	MIDI, 40...240 F _x :049, Sync
b	L Bs (L Delay Base Note) Selects the type of notes to specify the left channel delay time	F _x :049, Sync
	Times Sets the number of notes to specify the left channel delay time	1...16 F _x :049
	Adj (Adjust) Fine-adjust the left channel delay time	-2.50...+2.50%
c	R Bs (R Delay Base Note) Selects the type of notes to specify the right channel delay time	F _x :049, Sync
	Times Sets the number of notes to specify the right channel delay time	1...16 F _x :049
	Adj (Adjust) Fine-adjust the right channel delay time	-2.50...+2.50%
d	L Fb (L Feedback) Sets the feedback amount for the left channel	-100...+100 D _{mod}
	(Source) Selects the modulation source of feedback amount	Off...Tempo
	(Amount L) Sets the modulation amount of the left channel feedback	-100...+100

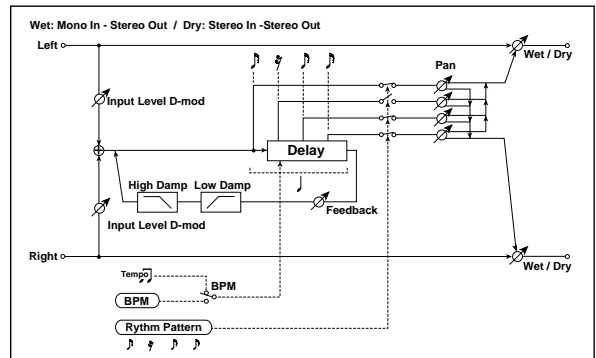
e	R Fb (R Feedback) Sets the feedback amount for the right channel	-100...+100 D _{mod}
	(Amount R) Sets the modulation amount of the right channel feedback	-100...+100
f	Time Over? L > Display the error message if the left channel delay time exceeds the upper limit	----, OVER! F _x
	R > Display the error message if the right channel delay time exceeds the upper limit	----, OVER! F _x
g	HiDamp (High Damp) Sets the damping amount in the high range	0...100% F _x :043
	LoDamp (Low Damp) Sets the damping amount in the low range	0...100% F _x :043
h	InLvl Mod (Input Level Mod [%]) Sets the modulation amount of the input level	-100...+100 F _x :037, D _{mod}
	Src (Source) Selects the modulation source for the input level	Off...Tempo F _x :037
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D _{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

f: Time Over? L >, f: R >

You can set the delay time up to 682msec. If the delay time exceeds this limit, the error message "OVER!" appears in the display. Set the delay time parameters so that this message will not appear. "Time Over?>" is only a display parameter.

051: Sequence Dly (Sequence Delay)

This four-tap delay enables you to select a tempo and rhythm pattern to set up each tap.



a	BPM Selects MIDI Clock and assigns tempo	MIDI, 44...240 F _x :049, Sync
a	Rhythm (Rhythm Pattern) Selects a rhythm pattern	3 F _x :049, Sync
b	Tap1 Pan Sets the panning of Tap1	L, 1...99, R
c	Tap2 Pan Sets the panning of Tap2	L, 1...99, R
d	Tap3 Pan Sets the panning of Tap3	L, 1...99, R
e	Tap4 Pan Sets the panning of Tap4	L, 1...99, R
f	Fb (Feedback) Sets the feedback amount	-100...+100 D _{mod}
	(Source) Selects the modulation source of feedback amount	Off...Tempo
	(Amount) Sets the modulation amount of the feedback	-100...+100

g	HiDamp (High Damp) Sets the damping amount in the high range	0...100% Fx:043
	LoDamp (Low Damp) Sets the damping amount in the low range	0...100% Fx:043
h	InLvl Mod (Input Level Mod [%]) Sets the modulation amount of the input level	-100...+100 Fx:037,
	Src (Source) Selects the modulation source for the input level	Off...Tempo Fx:037
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: BPM, a: Rhythm

With the tempo specified by the “BPM” parameter (or the MIDI Clock tempo if “BPM” is set to **MIDI**), the length of one beat equals the feedback delay time, and the interval between taps becomes equal. Selecting a rhythm will automatically turn the tap outputs on and off. When “BPM” is set to **MIDI**, the lower limit of the “BPM” is **44**.

Reverb

Reverb effects

These effects simulate the ambience of reverberation in concert halls.

052: Rev Hall (Reverb Hall)

This hall-type reverb simulates the reverberation of mid-size concert halls or ensemble halls.

053: Rev SmoothHall (Reverb Smooth Hall)

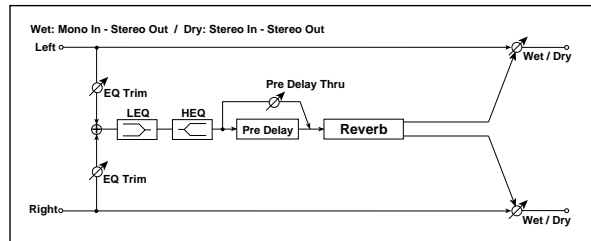
This hall-type reverb simulates the reverberation of larger halls and stadiums, and creates a smooth release.

054: Rev Wet Plate (Reverb Wet Plate)

This plate reverb simulates warm (dense) reverberation.

055: Rev Dry Plate (Reverb Dry Plate)

This plate reverb simulates dry (light) reverberation.

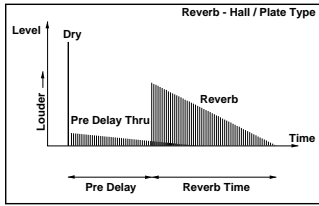


a	Reverb Time Sets the reverberation time	0.1...10.0s
b	High Damp Sets the damping amount in the high range	0...100%
c	Pre Delay Sets the delay time from the dry sound	0...200ms Fx
d	Pre Delay Thru Sets the mix ratio of non-delay sound	0...100% Fx
e	Pre EQ Trim Sets the EQ input level	0...100
f	LoEQ (Pre Low EQ Gain) Sets the gain of Low EQ	-15...+15dB
	HiEQ (Pre High EQ Gain) Sets the gain of High EQ	-15...+15dB
g	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

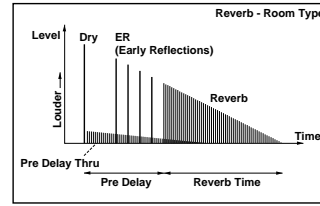
c: Pre Delay, d: Pre Delay Thru

The “Pre Delay” sets the delay time to the reverb input, allowing you to control spaciousness. Using the “Pre Delay Thru” parameter, you can mix the dry sound

without delay, emphasizing the attack of the sound.



wall, and a larger "Reverb Level" simulates a soft wall.

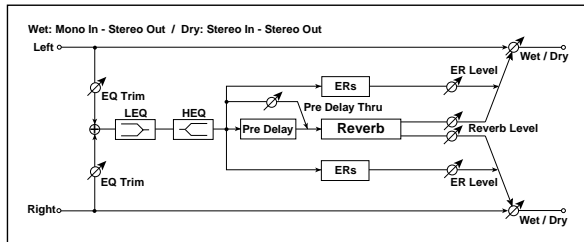


056: Rev Room (Reverb Room)

This room-type reverb emphasizes the early reflections that make the sound tighter. Changing the balance between the early reflections and reverb sound allows you to simulate nuances, such as the type of walls of a room.

057: Rev BrightRoom (Reverb Bright Room)

This room-type reverb emphasizes the early reflections that make the sound brighter. See 056: Reverb Room.



a	Reverb Time Sets the reverberation time	0.1...3.0sec
b	High Damp Sets the damping amount in the high range	0...100%
c	Pre Delay Sets the delay time from the dry sound	0...200ms ES [®] Fx:052
d	Pre Delay Thru Sets the mix ratio of non-delay sound	0...100% ES [®] Fx:052
e	Pre EQ Trim Sets the EQ input level	0...100
f	LoEQ (Pre Low EQ Gain) Sets the gain of Low EQ	-15...+15dB
	HiEQ (Pre High EQ Gain) Sets the gain of High EQ	-15...+15dB
g	ER Level Sets the level of early reflections	0...100 ES [®]
h	Reverb Level Sets the reverberation level	0...100 ES [®]
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

g: ER Level, h: Reverb Level

These parameters set the early reflection level and reverb level. Changing these parameter values allows you to simulate the type of walls in the room. That is, a larger "ER Level" simulates a hard

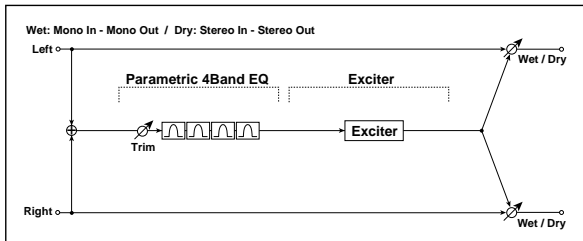
Mono → Mono Chain

Effects that combine two mono effects connected in series

058: P4EQ-Exciter

(Parametric 4-Band EQ – Exciter)

This effect combines a mono-type four-band parametric equalizer and an exciter.

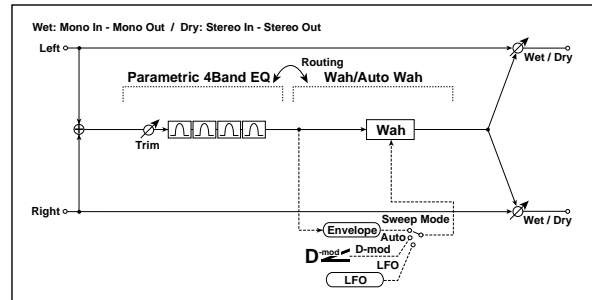


a	[PEQ] Trim Sets the parametric EQ input level	0...100
b	B1 (Band1 Cutoff) Sets the center frequency of Band 1	20...1.00kHz
	Q Sets the bandwidth of Band 1	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 1	-18...+18dB
c	B2 (Band2 Cutoff) Sets the center frequency of Band 2	50...5.00kHz
	Q Sets the bandwidth of Band 2	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 2	-18...+18dB
d	B3 (Band3 Cutoff) Sets the center frequency for Band 3	300...10.00kHz
	Q Sets the bandwidth of Band 3	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 3	-18...+18dB
e	B4 (Band4 Cutoff) Sets the center frequency for Band 4	500...20.00kHz
	Q Sets the bandwidth of Band 4	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 4	-18...+18dB
f	[XCT] Blend (Exciter Blend) Sets the intensity (depth) of the Exciter effect	-100...+100 Fx:011
g	Emphatic Point Sets the frequency range to be emphasized	0...70 Fx:011
h	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D-mod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

059: P4EQ-Wah

(Parametric 4-Band EQ – Wah/Auto Wah)

This effect combines a mono-type four-band parametric equalizer and a wah. You can change the order of the connection.

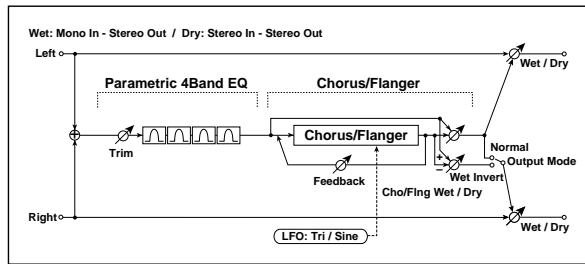


a	[PEQ] Trim Sets the parametric EQ input level	0...100
b	B1 (Band1 Cutoff) Sets the center frequency of Band 1	20...1.00kHz
	Q Sets the bandwidth of Band 1	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 1	-18...+18dB
c	B2 (Band2 Cutoff) Sets the center frequency of Band 2	50...5.00kHz
	Q Sets the bandwidth of Band 2	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 2	-18...+18dB
d	B3 (Band3 Cutoff) Sets the center frequency for Band 3	300...10.00kHz
	Q Sets the bandwidth of Band 3	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 3	-18...+18dB
e	B4 (Band4 Cutoff) Sets the center frequency for Band 4	500...20.00kHz
	Q Sets the bandwidth of Band 4	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 4	-18...+18dB
f	[WAH] FreqBtm (Frequency Bottom) Sets the lower limit of the wah center frequency	0...100 Fx:009
	Top (Frequency Top) Sets the upper limit of the wah center frequency	0...100 Fx:009
g	Swp Mode (Sweep Mode) Selects the control from auto-wah, modulation source, and LFO	Auto, Dmod, LFO Fx:009, D-mod
	Src (Source) Selects the modulation source for the wah when Sweep Mode=D-mod	Off...Tempo
h	lfoF (LFO Frequency) Sets the LFO speed	0.02...20.00Hz
	Res (Resonance) Sets the resonance amount	0...100
	LPF (Low Pass Filter) Switches the wah low pass filter on and off	Of, On
i	[Routing] Changes the order of the parametric equalizer and wah connection	PEQ → WAH, WAH → PEQ
j	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D-mod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

060: P4EQ-Cho/Fl

(Parametric 4-Band EQ – Chorus/Flanger)

This effect combines a mono-type four-band parametric equalizer and a chorus/flanger.



a	[PEQ] Trim Sets the parametric EQ input level	0...100
b	B1 (Band1 Cutoff) Sets the center frequency of Band 1	20...1.00kHz
	Q Sets the bandwidth of Band 1	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 1	-18...+18dB
c	B2 (Band2 Cutoff) Sets the center frequency of Band 2	50...5.00kHz
	Q Sets the bandwidth of Band 2	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 2	-18...+18dB
d	B3 (Band3 Cutoff) Sets the center frequency for Band 3	300...10.00kHz
	Q Sets the bandwidth of Band 3	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 3	-18...+18dB
e	B4 (Band4 Cutoff) Sets the center frequency for Band 4	500...20.00kHz
	Q Sets the bandwidth of Band 4	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 4	-18...+18dB
f	[CH/FL] LFO (LFO Waveform) Selects the LFO waveform of the chorus/flanger	Tri, Sine
	F (LFO Frequency) Sets the LFO speed	0.02...20.00Hz
g	Dly (Delay Time) Sets the delay time	0.0...50.0ms
	Dep (Depth) Sets the depth of LFO modulation	0...100
	Fb (Feedback) Sets the feedback amount	-100...+100 Fx:020
h	C/F W/D (Cho/Fing Wet/Dry) Sets the effect balance of the chorus/flanger	-Wet...-2:98, Dry, 2:98...Wet Fx:010, 020
	Out (Output Mode) Selects the output mode for the chorus/flanger	Normal, Wet Inv Fx:
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

h: Out

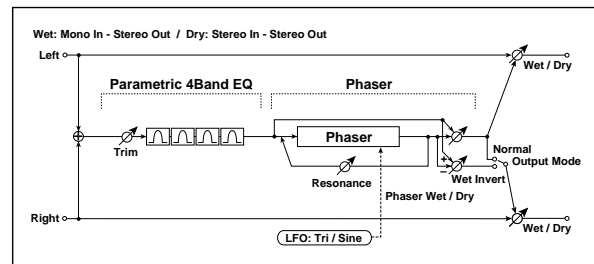
When **Wet Inv** is selected, the right channel phase of the chorus/flanger effect sound is inverted. This creates pseudo-stereo effects and adds spread.

However, if a mono-input type effect is connected after this effect, the left and right sounds may cancel each other, eliminating the chorus/flanger effects.

061: P4EQ-Phaser

(Parametric 4-Band EQ – Phaser)

This effect combines a mono-type four-band parametric equalizer and a phaser.

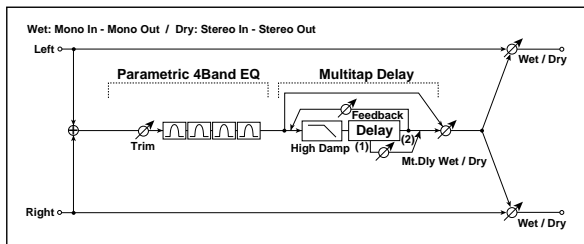


a	[PEQ] Trim Sets the parametric EQ input level	0...100
b	B1 (Band1 Cutoff) Sets the center frequency of Band 1	20...1.00kHz
	Q Sets the bandwidth of Band 1	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 1	-18...+18dB
c	B2 (Band2 Cutoff) Sets the center frequency of Band 2	50...5.00kHz
	Q Sets the bandwidth of Band 2	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 2	-18...+18dB
d	B3 (Band3 Cutoff) Sets the center frequency for Band 3	300...10.00kHz
	Q Sets the bandwidth of Band 3	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 3	-18...+18dB
e	B4 (Band4 Cutoff) Sets the center frequency for Band 4	500...20.00kHz
	Q Sets the bandwidth of Band 4	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 4	-18...+18dB
f	[PHS] LFO (LFO Waveform) Selects the LFO waveform of the phaser	Tri, Sine
	F (LFO Frequency) Sets the LFO speed	0.02...20.00Hz
g	Manu (Manual) Sets the frequency to which the effect is applied	0...100
	Dep (Depth) Sets the depth of LFO modulation	0...100
	Res (Resonance) Sets the resonance amount	-100...+100 Fx:023
h	Phs W/D (Phaser Wet/Dry) Sets the phaser effect balance	-Wet...-2:98, Dry, 2:98...Wet Fx:010, 023
	Output Mode Selects the phaser output mode	Normal, Wet Inv Fx:060
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

062: P4EQ-M.Dly

(Parametric 4-Band EQ – Multitap Delay)

This effect combines a mono-type four-band parametric equalizer and a multitap delay.

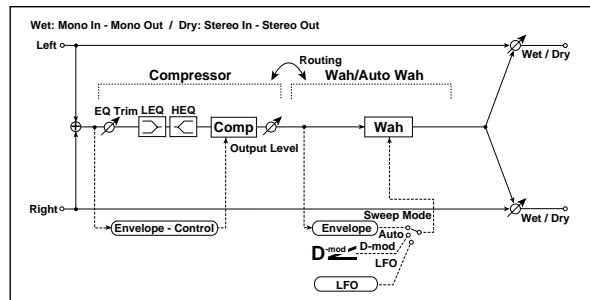


a	[PEQ] Trim Sets the parametric EQ input level	0...100
b	B1 (Band1 Cutoff) Sets the center frequency of Band 1	20...1.00kHz
	Q Sets the bandwidth of Band 1	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 1	-18...+18dB
c	B2 (Band2 Cutoff) Sets the center frequency of Band 2	50...5.00kHz
	Q Sets the bandwidth of Band 2	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 2	-18...+18dB
d	B3 (Band3 Cutoff) Sets the center frequency for Band 3	300...10.00kHz
	Q Sets the bandwidth of Band 3	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 3	-18...+18dB
e	B4 (Band4 Cutoff) Sets the center frequency for Band 4	500...20.00kHz
	Q Sets the bandwidth of Band 4	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 4	-18...+18dB
f	[DLY] T1 (Tap1 Delay) Sets the Tap1 delay time	0...680ms
	T2 (Tap2 Delay) Sets the Tap2 delay time	0...680ms
g	T1 Level (Tap1 Level) Sets the Tap1 output level	0...100 Fx:045
	T2 Fb (Tap2 Feedback) Sets the Tap2 feedback amount	-100...+100
h	Dly W/D (Delay Wet/Dry) Sets the multitap delay effect balance	Dry, 2:98...98:2, Wet
	HiDamp (High Damp) Sets the damping amount in the high range	0...100% Fx:043
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D-mod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

063: Comp-Wah

(Compressor – Wah/Auto Wah)

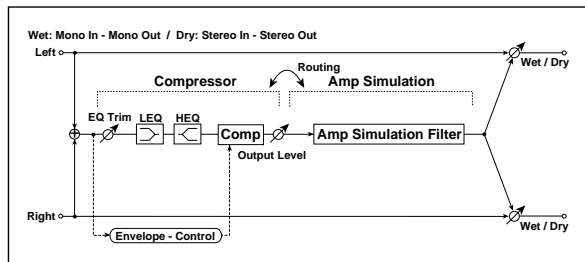
This effect combines a mono-type compressor and a wah. You can change the order of the connection.



a	[CMP] Sensitivity Sets the sensitivity	1...100 Fx:002
b	Attack Sets the attack level	1...100 Fx:002
	Level (Output Level) Sets the compressor output level	0...100 Fx:002
c	Pre EQ Trim Sets the EQ input level	0...100
d	LoEQ (Pre Low EQ Gain) Sets the gain of Low EQ	-15...+15dB
	HiEQ (Pre High EQ Gain) Sets the gain of High EQ	-15...+15dB
e	[WAH] FreqBtm (Frequency Bottom) Sets the lower limit of the wah center frequency	0...100 Fx:009
	Top (Frequency Top) Sets the upper limit of the wah center frequency	0...100 Fx:009
f	Swp Mode (Sweep Mode) Selects the control from auto-wah, modulation source, and LFO	Auto, Dmod, LFO Fx:009, D-mod
	Src (Source) Selects the modulation source for the wah when Swp Mode=Dmod	Off...Tempo
g	IfoF (LFO Frequency) Sets the LFO speed	0.02...20.00Hz
	Res (Resonance) Sets the resonance amount	0...100
h	LPF (Low Pass Filter) Switches the wah low pass filter on and off	Of, On
	[Routing] Switches the order of the compressor and wah connection	CMP → WAH, WAH → CMP
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D-mod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

064: Comp-AmpSim (Compressor – Amp Simulation)

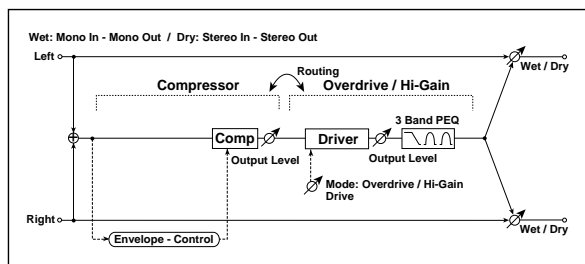
This effect combines a mono-type compressor and an amp simulation. You can change the order of the effect connection.



a	[CMP] Sensitivity	1...100
	Sets the sensitivity	FX:002
b	Attack	1...100
	Sets the attack level	FX:002
c	Level (Output Level)	0...100
	Sets the compressor output level	FX:002
d	Pre EQ Trim	0...100
e	LoEQ (Pre Low EQ Gain)	-15...+15dB
	Sets the gain of Low EQ	
f	HiEQ (Pre High EQ Gain)	-15...+15dB
	Sets the gain of High EQ	
g	[AMP] Amplifier Type	SS, EL84, 6L6
h	[Routing]	CMP → AMP, AMP → CMP
i	W/D (Wet/Dly)	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds	D-mod
	(Source)	Off...Tempo
j	(Amount)	-100...+100
	Sets the modulation amount of the effect balance	

065: Comp-OD/HG (Compressor – Overdrive/Hi.Gain)

This effect combines a mono-type compressor and an overdrive/high-gain distortion. You can change the order of the effect connection.

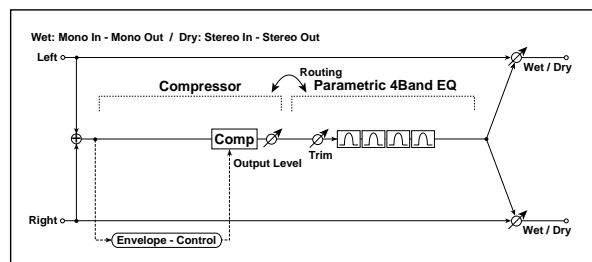


a	[CMP] Sensitivity	1...100
	Sets the sensitivity	FX:002
b	Attack	1...100
	Sets the attack level	FX:002
c	Level (Output Level)	0...100
	Sets the compressor output level	FX:002

c	[OD] Mode (Drive Mode)	OverD, Hi-Gain
	Switches between overdrive and high-gain distortion	
d	Drive	1...100
	Sets the degree of distortion	FX:006, D-mod
e	Level (Output Level)	0...50
	Sets the overdrive output level	FX:006, D-mod
f	(Source)	Off...Tempo
	Selects the modulation source for the overdrive output level	
g	(Amount)	-50...+50
	Sets the modulation amount of the overdrive output level	
h	Lo (Low Cutoff)	20...1.00kHz
	Sets the center frequency for Low EQ (shelving type)	
i	G (Gain)	-18...+18dB
	Sets the gain of Low EQ	
j	M1 (Mid1 Cutoff)	300...10.00kHz
	Sets the center frequency for Mid/High EQ 1 (peaking type)	
k	Q	0.5...10.0
	Sets the band width of Mid/High EQ 1	FX:006
l	G (Gain)	-18...+18dB
	Sets the gain of Mid/High EQ 1	
m	M2 (Mid2 Cutoff)	500...20.00kHz
	Sets the center frequency for Mid/High EQ 2 (peaking type)	
n	Q	0.5...10.0
	Sets the band width of Mid/High EQ 2	FX:006
o	G (Gain)	-18...+18dB
	Sets the gain of Mid/High EQ 2	
p	[Routing]	CMP → OD, OD → CMP
	Switches the order of the compressor and overdrive connection	
q	W/D (Wet/Dly)	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds	D-mod
	(Source)	Off...Tempo
r	(Amount)	-100...+100
	Sets the modulation amount of the effect balance	

066: Comp-P4EQ (Compressor – Parametric 4-Band EQ)

This effect combines a mono-type compressor and a four-band parametric equalizer. You can change the order of the effect connection.

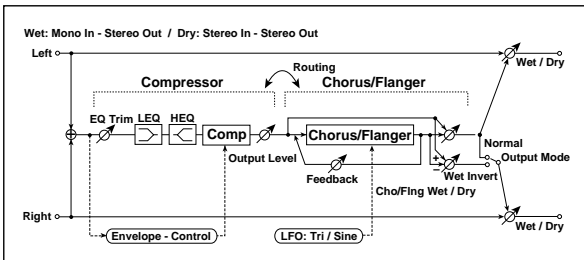


a	[CMP] Sensitivity	1...100
	Sets the sensitivity	FX:002
b	Attack	1...100
	Sets the attack level	FX:002
c	Level (Output Level)	0...100
	Sets the compressor output level	FX:002
d	[PEQ] Trim	0...100
e	[Routing]	CMP → PEQ, PEQ → CMP
	Switches the order of the compressor and parametric EQ connection	

e	B1 (Band1 Cutoff) Sets the center frequency of Band 1	20...1.00kHz
	Q Sets the bandwidth of Band 1	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 1	-18...+18dB
f	B2 (Band2 Cutoff) Sets the center frequency of Band 2	50...5.00kHz
	Q Sets the bandwidth of Band 2	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 2	-18...+18dB
g	C/F W/D (Cho/FIng Wet/Dry) Sets the center frequency for Band 3	300...10.00kHz
	Q Sets the bandwidth of Band 3	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 3	-18...+18dB
h	B4 (Band4 Cutoff) Sets the center frequency for Band 4	500...20.00kHz
	Q Sets the bandwidth of Band 4	0.5...10.0 Fx:006
	G (Gain) Sets the gain of Band 4	-18...+18dB
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

067: Comp-Cho/FI (Compressor - Chorus/Flanger)

This effect combines a mono-type compressor and a chorus/flanger. You can change the order of the effect connection.



a	[CMP] Sensitivity Sets the sensitivity	1...100 Fx:002
	Attack Sets the attack level	1...100 Fx:002
b	Level (Output Level) Sets the compressor output level	0...100 Fx:002
	Pre EQ Trim Sets the EQ input level	0...100
d	LoEQ (Pre Low EQ Gain) Sets the gain of Low EQ	-15...+15dB
	HiEQ (Pre High EQ Gain) Sets the gain of High EQ	-15...+15dB
e	[CH/FL] LFO (LFO Waveform) Selects the LFO waveform of the chorus/flanger	Tri, Sine
	F (LFO Frequency) Sets the LFO speed	0.02...20.00Hz
f	Dly (Delay Time) Sets the delay time	0.0...50.0ms
	Dep (Depth) Sets the depth of LFO modulation	0...100
	Fb (Feedback) Sets the feedback amount	-100...+100 Fx:020

g	[F] Cho/Fing W/D Sets the effect balance of the chorus/flanger	-Wet...-2:98, Dry, 2:98...Wet Fx:010, 020
	Out (Output Mode) Selects the output mode for the chorus/flanger	Normal, Wet Inv Fx:006
h	[Routing] Switches the order of the compressor and chorus/flanger connection	CMP → CF/FL, CH/FL → CMP Fx:006
	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
i	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

g: Out, h: [Routing]

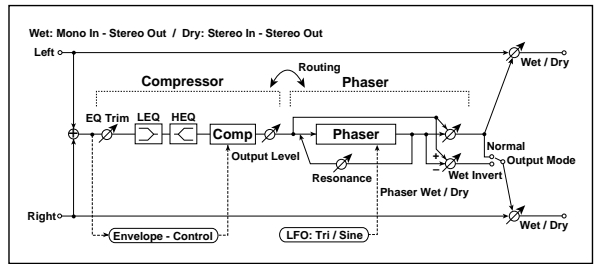
When **Wet Inv** is selected, the right channel phase of the chorus/flanger effect sound is inverted. This creates pseudo-stereo effects and adds spread.

However, if a mono-input type effect is connected after this effect, the left and right sounds may cancel each other, eliminating the chorus/flanger effects.

When "[Routing]" is set to **CH/FL→CMP**, "Out" will be set to **Normal**.

068: Comp-Phaser (Compressor - Phaser)

This effect combines a mono-type compressor and a phaser. You can change the order of the effect connection.

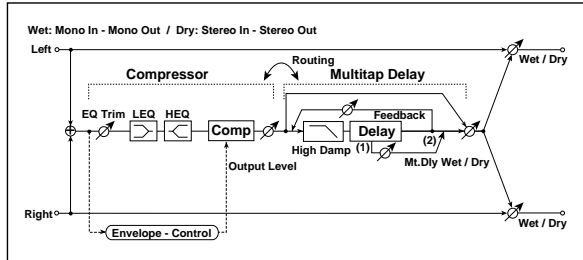


a	[CMP] Sensitivity Sets the sensitivity	1...100 Fx:002
	Attack Sets the attack level	1...100 Fx:002
b	Level (Output Level) Sets the compressor output level	0...100 Fx:002
	Pre EQ Trim Sets the EQ input level	0...100
d	LoEQ (Pre Low EQ Gain) Sets the gain of Low EQ	-15...+15dB
	HiEQ (Pre High EQ Gain) Sets the gain of High EQ	-15...+15dB
e	[PHS] LFO (LFO Waveform) Selects the LFO waveform of the phaser	Tri, Sine
	F (LFO Frequency) Sets the LFO speed	0.02...20.00Hz
f	Manu (Manual) Sets the frequency to which the effect is applied	0...100
	Dep (Depth) Sets the depth of LFO modulation	0...100
	Res (Resonance) Sets the resonance amount	-100...+100 Fx:023
g	Phs W/D (Phaser Wet/Dry) Sets the phaser effect balance	-Wet...-2:98, Dry, 2:98...Wet Fx:010, 023
	Out (Output Mode) Selects the phaser output mode	Normal, Wet Inv Fx:067
h	[Routing] Switches the order of the compressor and phaser connection	CMP→PHS, PHS→CMP Fx:067

i	W/D (Wet/Dly)	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds D^{mod}	
	(Source)	Off...Tempo
(Amount)		-100...+100
		Sets the modulation amount of the effect balance

069: Comp-M.Dly (Compressor - Multitap Delay)

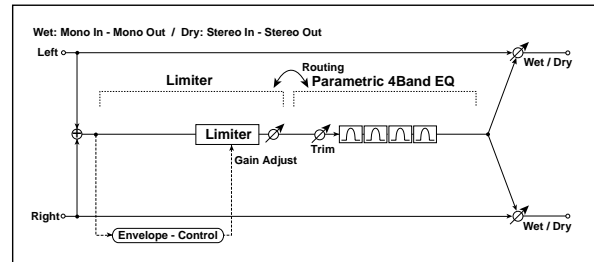
This effect combines a mono-type compressor and a multitap delay. You can change the order of the effect connection.



a	[CMP] Sensitivity	1...100
		Sets the sensitivity Fx:002
b	Attack	1...100
	Sets the attack level Fx:002	
c	Level (Output Level)	0...100
	Sets the compressor output level Fx:002	
d	Pre EQ Trim	0...100
	Sets the EQ input level	
e	LoEQ (Pre Low EQ Gain)	-15...+15dB
	Sets the gain of Low EQ	
f	HiEQ (Pre High EQ Gain)	-15...+15dB
	Sets the gain of High EQ	
g	[DLY] T1 (Tap1 Delay)	0...680msec
	Sets the Tap1 delay time	
h	T2 (Tap2 Delay)	0...680msec
	Sets the Tap2 delay time	
i	T1 Level (Tap1 Level)	0...100
	Sets the Tap1 output level Fx:045	
j	T2 (Tap2 Level)	-100...+100
	Sets the Tap2 feedback amount	
k	Dly W/D (Delay Wet/Dry)	Dry, 1:99...99:1, Wet
	Sets the multitap delay effect balance	
l	HiDamp (High Damp)	0...100%
	Sets the damping amount in the high range Fx:043	
m	[Routing]	CMP→DLY, DLY→CMP
	Switches the order of the compressor and multitap delay connection	
n	W/D (Wet/Dly)	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds D^{mod}	
	(Source)	Off...Tempo
o	(Amount)	
	Sets the modulation amount of the effect balance -100...+100	

070: Limiter-P4EQ (Limiter - Parametric 4-Band EQ)

This effect combines a mono-type limiter and a four-band parametric equalizer. You can change the order of the effect connection.

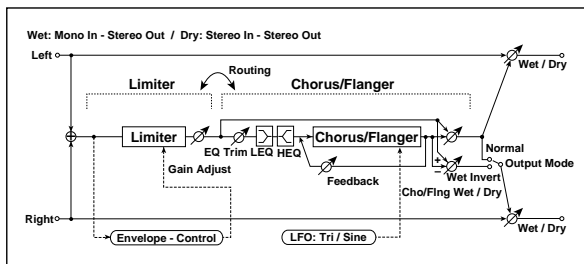


a	[LMT] Ratio	1.0:1...50.0:1, Inf:1
		Sets the signal compression ratio Fx:003
b	Threshold (Threshold)	-40...0dB
	Sets the level above which the compressor is applied Fx:003	
c	G.Adj (Gain Adjust)	-Inf, -38...+24dB
	Sets the limiter output gain Fx:003	
d	Attack	1...100
	Sets the attack time Fx:003	
e	Release	1...100
	Sets the release time Fx:003	
f	[PEQ] Trim	0...100
	Sets the parametric EQ input level	
g	[Routing]	LMT→PEQ, PEQ→LMT
	Switches the order of the limiter and parametric EQ connection	
h	B1 (Band1 Cutoff)	20...1.00kHz
	Sets the center frequency of Band 1	
	Q	0.5...10.0
i	Sets the bandwidth of Band 1 Fx:006	
	G (Gain)	-18...+18dB
	Sets the gain of Band 1	
j	B2 (Band2 Cutoff)	50...5.00kHz
	Sets the center frequency of Band 2	
	Q	0.5...10.0
k	Sets the bandwidth of Band 2 Fx:006	
	G (Gain)	-18...+18dB
	Sets the gain of Band 2	
l	B3 (Band3 Cutoff)	300...10.00kHz
	Sets the center frequency for Band 3	
	Q	0.5...10.0
m	Sets the bandwidth of Band 3 Fx:006	
	G (Gain)	-18...+18dB
	Sets the gain of Band 3	
n	B4 (Band4 Cutoff)	500...20.00kHz
	Sets the center frequency for Band 4	
	Q	0.5...10.0
o	Sets the bandwidth of Band 4 Fx:006	
	G (Gain)	-18...+18dB
	Sets the gain of Band 4	
p	W/D (Wet/Dly)	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds D^{mod}	
	(Source)	Off...Tempo
q	(Amount)	
	Sets the modulation amount of the effect balance -100...+100	

071: Limit-Cho/Fl

(Limiter – Chorus/Flanger)

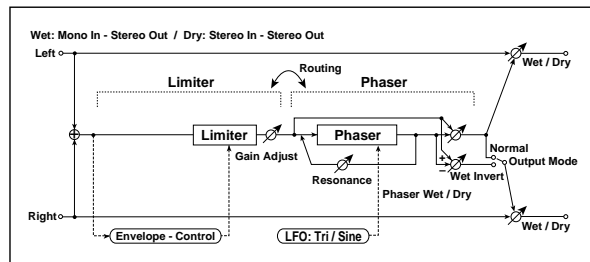
This effect combines a mono-type limiter and a chorus/flanger. You can change the order of the effect connection.



a	[LMT] Ratio Sets the signal compression ratio	1.0:1...50.0:1, Inf:1 Fx:003
b	Threshld (Threshold) Sets the level above which the compressor is applied	-40...0dB Fx:003
	G.Adj (Gain Adjust) Sets the limiter output gain	-Inf, -38...+24dB Fx:003
c	Attack Sets the attack time	1...100 Fx:003
	Release Sets the release time	1...100 Fx:003
d	[CH/FL] LFO (LFO Waveform) Selects the LFO waveform of the chorus/flanger	Tri, Sine
	F (LFO Frequency) Sets the LFO speed	0.02...20.00Hz
e	Dly (Delay Time) Sets the delay time	0.0...50.0ms
	Dep (Depth) Sets the depth of LFO modulation	0...100
	Feedback Sets the feedback amount	-100...+100 Fx:020
f	[F] EQ Trim Sets the EQ input level	0...100
	[F] Pre LEQ Gain [dB] Sets the gain of Low EQ	-15...+15dB
g	Pre HEQ Gain [dB] Sets the gain of High EQ	-15...+15dB
	[F] Cho/Fing W/D Sets the effect balance of the chorus/flanger	-Wet...-2:98, Dry, 2:98...Wet Fx:010, 020
h	Output Mode Selects the output mode for the chorus/flanger	Normal, Wet Inv Fx:067
	Routing Switches the order of the limiter and chorus/flanger connection	LMT→CH/FL, CH/FL→LMT Fx:067
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

072: Limit-Phaser

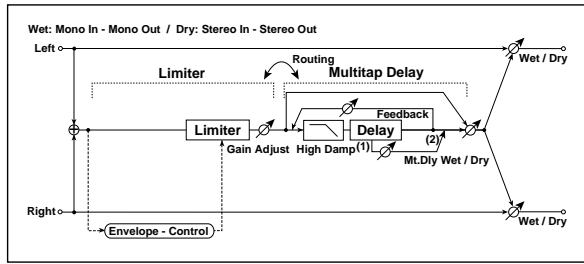
This effect combines a mono-type limiter and a phaser. You can change the order of the effect connection.



a	[LMT] Ratio Sets the signal compression ratio	1.0:1...50.0:1, Inf:1 Fx:003
b	Threshld (Threshold) Sets the level above which the compressor is applied	-40...0dB Fx:003
	G.Adj (Gain Adjust) Sets the limiter output gain	-Inf, -38...+24dB Fx:003
c	Attack Sets the attack time	1...100 Fx:003
	Release Sets the release time	1...100 Fx:003
d	[PHS] LFO (LFO Waveform) Selects the LFO waveform of the phaser	Tri, Sine
	F (LFO Frequency) Sets the LFO speed	0.02...20.00Hz
e	Manu (Manual) Sets the frequency to which the effect is applied	0...100
	Dep (Depth) Sets the depth of LFO modulation	0...100
	Resonance Sets the resonance amount	-100...+100 Fx:023
f	[P] Phaser W/D Sets the phaser effect balance	-Wet...-2:98, Dry, 2:98...Wet Fx:010, 023
	Output Mode Selects the phaser output mode	Normal, Wet Inv Fx:067
g	Routing Switches the order of the limiter and phaser connection	LMT→PHS, PHS→LMT Fx:067
	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
h	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

073: Limiter-M.Dly (Limiter – Multitap Delay)

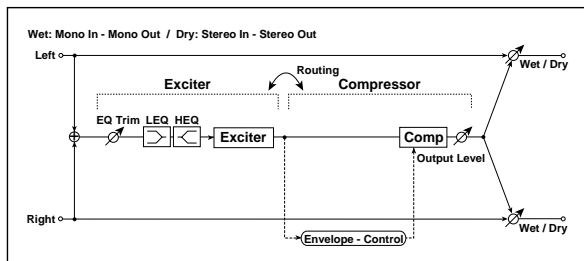
This effect combines a mono-type limiter and a multitap delay. You can change the order of the effect connection.



a	[LMT] Ratio Sets the signal compression ratio	1.0:1...50.0:1, Inf:1 Fx:003
	Threshold (Threshold) Sets the level above which the compressor is applied	-40...0dB Fx:003
b	G.Adj (Gain Adjust) Sets the limiter output gain	-Inf, -38...+24dB Fx:003
	Attack Sets the attack time	1...100 Fx:003
c	Release Sets the release time	1...100 Fx:003
	[DLY] T1 (Tap1 Delay) Sets the Tap1 delay time	0...680ms
d	T2 (Tap2 Delay) Sets the Tap2 delay time	0...680ms
	T1 Level (Tap1 Level) Sets the Tap1 output level	0...100 Fx:045
e	T2 Fb (Tap2 Feedback) Sets the Tap2 feedback amount	-100...+100
	Dly W/D (Delay Wet/Dry) Sets the multitap delay effect balance	Dry, 1:99...99:1, Wet
f	HiDamp (High Damp) Sets the damping amount in the high range	0...100% Fx:043
	[Routing] Switches the order of the limiter and multitap delay connection	LMT→DLY, DLY→LMT
h	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

074: Exct-Comp (Exciter – Compressor)

This effect combines a mono-type exciter and a compressor. You can change the order of the effect connection.

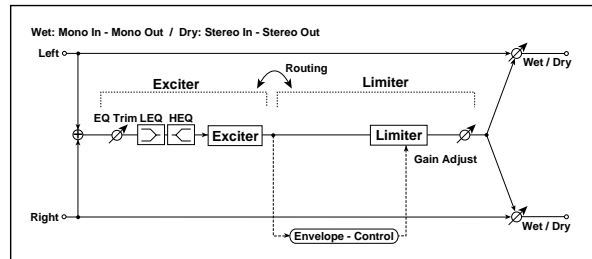


a	[XTC] Blend (Exciter Blend) Sets the intensity (depth) of the Exciter effect	-100...+100 Fx:011
	Emphatic Point Sets the frequency range to be emphasized	0...70 Fx:011

c	Pre EQ Trim Sets the EQ input level	0...100
	LoEQ (Pre Low EQ Gain) Sets the gain of Low EQ	-15...+15dB
d	HiEQ (Pre High EQ Gain) Sets the gain of High EQ	-15...+15dB
	[CMP] Sensitivity Sets the sensitivity	1...100 Fx:002
f	Attack Sets the attack level	1...100 Fx:002
	Level (Output Level) Sets the compressor output level	0...100 Fx:002
g	[Routing] Switches the order of the exciter and compressor connection	XCT→CMP, CMP→XCT
	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
h	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

075: Exct-Limiter (Exciter Limiter)

This effect combines a mono-type exciter and a limiter. You can change the order of the effect connection.

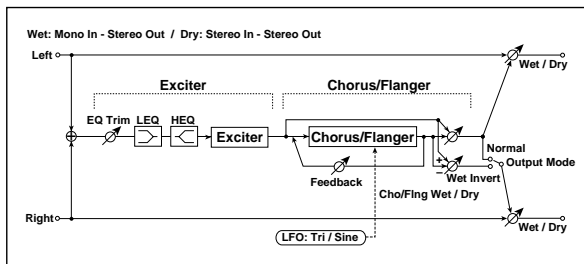


a	[XTC] Blend (Exciter Blend) Sets the intensity (depth) of the Exciter effect	-100...+100 Fx:011
	Emphatic Point Sets the frequency range to be emphasized	0...70 Fx:011
c	Pre EQ Trim Sets the EQ input level	0...100
	LoEQ (Pre Low EQ Gain) Sets the gain of Low EQ	-15...+15dB
d	HiEQ (Pre High EQ Gain) Sets the gain of High EQ	-15...+15dB
	[LMT] Ratio Sets the signal compression ratio	1.0:1...50.0:1, Inf:1 Fx:003
f	Threshold (Threshold) Sets the level above which the compressor is applied	-40...0dB Fx:003
	G.Adj (Gain Adjust) Sets the limiter output gain	-Inf, -38...+24dB Fx:003
g	Attack Sets the attack time	1...100 Fx:003
	Release Sets the release time	1...100 Fx:003
h	[Routing] Switches the order of the exciter and limiter connection	XCT→LMT, LMT→XCT
	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
i	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

076: Exct-Cho/Fl

(Exciter - Chorus/Flanger)

This effect combines a mono-type limiter and a chorus/flanger.

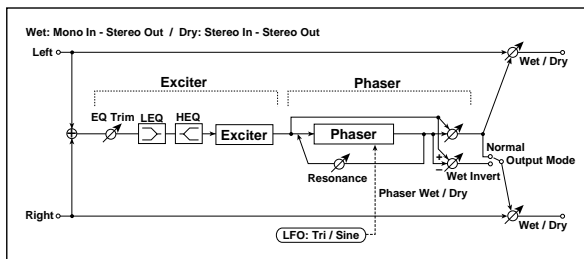


a	[XCT] Blend (Exciter Blend) Sets the intensity (depth) of the Exciter effect	-100...+100 Fx:011
b	Emphatic Point Sets the frequency range to be emphasized	0...70 Fx:011
c	Pre EQ Trim Sets the EQ input level	0...100
d	LoEQ (Pre Low EQ Gain) Sets the gain of Low EQ	-15...+15dB
	HiEQ (Pre High EQ Gain) Sets the gain of High EQ	-15...+15dB
e	[CH/FL] LFO (LFO Waveform) Selects the LFO waveform of the chorus/flanger	Tri, Sine
	F (LFO Frequency) Sets the LFO speed	0.02...20.00Hz
f	Dly (Delay Time) Sets the delay time	0.0...50.0ms
	Dep (Depth) Sets the depth of LFO modulation	0...100
	Fb (Feedback) Sets the feedback amount	-100...+100 Fx:020
g	C/F W/D (Cho/Fing Wet/Dry) Sets the effect balance of the chorus/flanger	-Wet...-2:98, Dry, 2:98...Wet Fx:010, 020
	Out (Output Mode) Selects the output mode for the chorus/flanger	Normal, Wet Inv Fx:060
h	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

077: Exct-Phaser

(Exciter - Phaser)

This effect combines a mono-type limiter and a phaser.



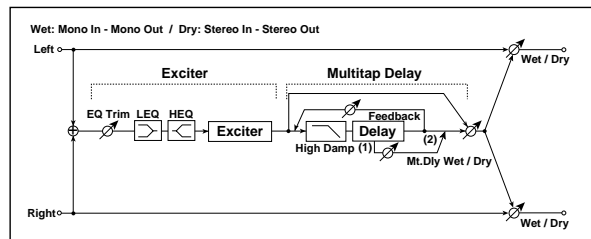
a	[XCT] Blend (Exciter Blend) Sets the intensity (depth) of the Exciter effect	-100...+100 Fx:011
b	Emphatic Point Sets the frequency range to be emphasized	0...70 Fx:011
c	Pre EQ Trim Sets the EQ input level	0...100

d	LoEQ (Pre Low EQ Gain) Sets the gain of Low EQ	-15...+15dB
	HiEQ (Pre High EQ Gain) Sets the gain of High EQ	-15...+15dB
e	[PHS] LFO (LFO Waveform) Selects the LFO waveform of the phaser	Tri, Sine
	F (LFO Frequency) Sets the LFO speed	0.02...20.00Hz
f	Manu (Manual) Sets the frequency to which the effect is applied	0...100
	Dep (Depth) Sets the depth of LFO modulation	0...100
	Res (Resonance) Sets the resonance amount	-100...+100 Fx:023
g	Phs W/D (Phaser Wet/Dry) Sets the phaser effect balance	-Wet...-2:98, Dry, 2:98...Wet Fx:010, 023
	Out (Output Mode) Selects the phaser output mode	Normal, Wet Inv Fx:060
h	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

078: Exct-M.Dly

(Exciter - Multitap Delay)

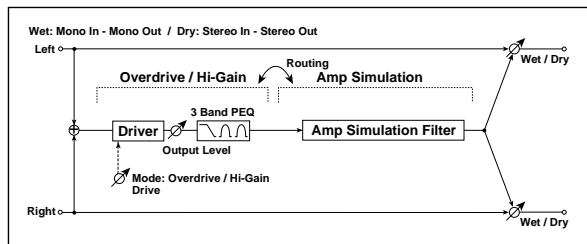
This effect combines a mono-type exciter and a multitap delay.



a	[XCT] Blend (Exciter Blend) Sets the intensity (depth) of the Exciter effect	-100...+100 Fx:011
b	Emphatic Point Sets the frequency range to be emphasized	0...70 Fx:011
c	Pre EQ Trim Sets the EQ input level	0...100
d	LoEQ (Pre Low EQ Gain) Sets the gain of Low EQ	-15...+15dB
	HiEQ (Pre High EQ Gain) Sets the gain of High EQ	-15...+15dB
e	[DLY] T1 (Tap1 Delay) Sets the Tap1 delay time	0...680ms
	T2 (Tap2 Delay) Sets the Tap2 delay time	0...680ms
f	T1 Level (Tap1 Level) Sets the Tap1 output level	0...100 Fx:045
	T2 Fb (Tap2 Feedback) Sets the Tap2 feedback amount	-100...+100
g	Dly W/D (Delay Wet/Dry) Sets the multitap delay effect balance	Dry, 1:99...99:1, Wet
	HiDamp (High Damp) Sets the damping amount in the high range	0...100% Fx:043
h	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

079: OD/HG-AmpSim (Overdrive/Hi.Gain – Amp Simulation)

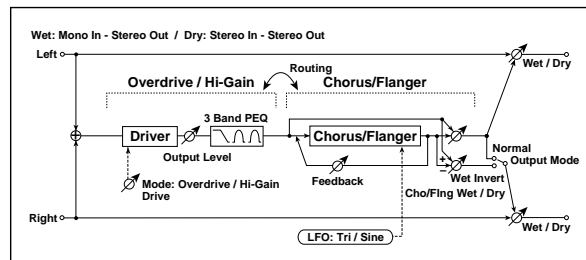
This effect combines a mono-type overdrive/high-gain distortion and an amp simulation. You can change the order of the effect connection.



a	[OD] Mode (Drive Mode)	OverD, Hi-Gain
	Switches between overdrive and high-gain distortion	
b	Drive	1...100 Sets the degree of distortion Fx:006
	Level (Output Level)	0...50 Sets the overdrive output level Fx:006, D ^{mod}
c	(Source)	Off...Tempo Selects the modulation source for the overdrive output level
	(Amount)	-50...+50 Sets the modulation amount of the overdrive output level
d	Lo (Low Cutoff)	20...1.00kHz Sets the center frequency for Low EQ (shelving type)
	G (Gain)	-18...+18dB Sets the gain of Low EQ
e	M1 (Mid1 Cutoff)	300...10.00kHz Sets the center frequency for Mid/High EQ 1 (peaking type)
	Q	0.5...10.0 Sets the band width of Mid/High EQ 1 Fx:006
	G (Gain)	-18...+18dB Sets the gain of Mid/High EQ 1
f	M2 (Mid2 Cutoff)	500...20.00kHz Sets the center frequency for Mid/High EQ 2 (peaking type)
	Q	0.5...10.0 Sets the band width of Mid/High EQ 2 Fx:006
	G (Gain)	-18...+18dB Sets the gain of Mid/High EQ 2
g	[AMP] Amplifier Type	SS, EL84, 6L6 Selects the type of guitar amplifier
h	[Routing]	OD→AMP, AMP→OD Switches the order of the overdrive and amp simulation connection
i	W/D (Wet/Dly)	Dry, 1:99...99:1, Wet Sets the balance between the effect and dry sounds D ^{mod}
	(Source)	Off...Tempo Selects the modulation source of the effect balance
	(Amount)	-100...+100 Sets the modulation amount of the effect balance

080: OD/HG-Cho/FI (Overdrive/Hi.Gain – Chorus/Flanger)

This effect combines a mono-type overdrive/high-gain distortion and a chorus/flanger. You can change the order of the effect connection.

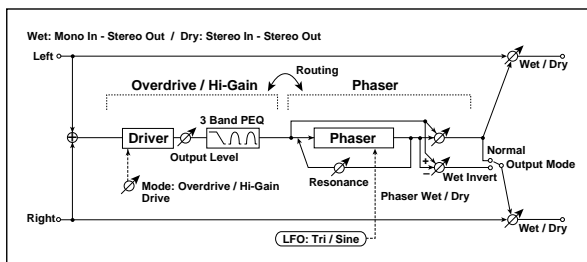


a	[OD] Mode (Drive Mode)	OverD, Hi-Gain
	Switches between overdrive and high-gain distortion	
b	Drive	1...100 Sets the degree of distortion Fx:006
	Level (Output Level)	0...50 Sets the overdrive output level Fx:006, D ^{mod}
c	(Source)	Off...Tempo Selects the modulation source for the overdrive output level
	(Amount)	-50...+50 Sets the modulation amount of the overdrive output level
d	Lo (Low Cutoff)	20...1.00kHz Sets the center frequency for Low EQ (shelving type)
	G (Gain)	-18...+18dB Sets the gain of Low EQ
e	M1 (Mid1 Cutoff)	300...10.00kHz Sets the center frequency for Mid/High EQ 1 (peaking type)
	Q	0.5...10.0 Sets the band width of Mid/High EQ 1 Fx:006
	G (Gain)	-18...+18dB Sets the gain of Mid/High EQ 1
f	M2 (Mid2 Cutoff)	500...20.00kHz Sets the center frequency for Mid/High EQ 2 (peaking type)
	Q	0.5...10.0 Sets the band width of Mid/High EQ 2 Fx:006
	G (Gain)	-18...+18dB Sets the gain of Mid/High EQ 2
g	[CH/FL] LFO (LFO Waveform)	Tri, Sine Selects the LFO waveform of the chorus/flanger
h	F (LFO Frequency)	0.02...20.00Hz Sets the LFO speed
	Dly (Delay Time)	0.0...50.0ms Sets the delay time
	Dep (Depth)	0...100 Sets the depth of LFO modulation
i	Fb (Feedback)	-100...+100 Sets the feedback amount Fx:020
	C/F W/D (Cho/Fing Wet/Dry)	-Wet...-2:98, Dry, 2:98...Wet Sets the effect balance of the chorus/flanger Fx:010, 020
j	Out (Output Mode)	Normal, Wet Inv Selects the output mode for the chorus/flanger Fx:067
k	[Routing]	OD → CH/FL, CH/FL → OD Switches the order of the overdrive and chorus/flanger connection Fx:067
l	W/D (Wet/Dly)	Dry, 1:99...99:1, Wet Sets the balance between the effect and dry sounds D ^{mod}
	(Source)	Off...Tempo Selects the modulation source of the effect balance
	(Amount)	-100...+100 Sets the modulation amount of the effect balance

081: OD/HG-Phaser

(Overdrive/Hi.Gain – Phaser)

This effect combines a mono-type overdrive/high-gain distortion and a phaser. You can change the order of the effect connection.

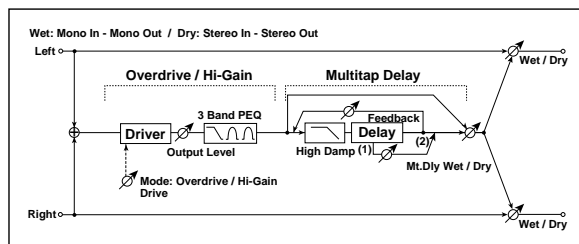


a	[OD] Mode (Drive Mode)	OverD, Hi-Gain
	Switches between overdrive and high-gain distortion	
b	Drive	1...100
	Sets the degree of distortion Fx:006	
c	Level (Output Level)	0...50
	Sets the overdrive output level Fx:006, 	
	(Source)	Off...Tempo
d	Selects the modulation source for the overdrive output level	
	(Amount)	-50...+50
Sets the modulation amount of the overdrive output level		
e	Lo (Low Cutoff)	20...1.00kHz
	Sets the center frequency for Low EQ (shelving type)	
	G (Gain)	-18...+18dB
Sets the gain of Low EQ		
f	M1 (Mid1 Cutoff)	300...10.00kHz
	Sets the center frequency for Mid/High EQ 1 (peaking type)	
	Q	0.5...10.0
Sets the band width of Mid/High EQ 1 Fx:006		
g	G (Gain)	
	Sets the gain of Mid/High EQ 1	
	M2 (Mid2 Cutoff)	500...20.00kHz
Sets the center frequency for Mid/High EQ 2 (peaking type)		
h	Q	
	Sets the band width of Mid/High EQ 2 Fx:006	
	G (Gain)	
Sets the gain of Mid/High EQ 2		
i	[PHS] LFO (LFO Waveform)	Tri, Sine
	Selects the LFO waveform of the phaser	
j	F (LFO Frequency)	0.02...20.00Hz
	Sets the LFO speed	
k	Manu (Manual)	0...100
	Sets the frequency to which the effect is applied	
	Dep (Depth)	0...100
Sets the depth of LFO modulation		
l	Res (Resonance)	-100...+100
	Sets the resonance amount Fx:023	
m	Phs W/D (Phaser Wet/Dry)	-Wet...-2:98, Dry, 2:98...Wet
	Sets the phaser effect balance Fx:010, 023	
n	Out (Output Mode)	Normal, Wet Inv
	Selects the phaser output mode Fx:067	
o	[Routing]	OD → PHS, PHS → OD
	Switches the order of the overdrive and phaser connection Fx:067	
p	W/D (Wet/Dly)	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds 	
	(Source)	Off...Tempo
Selects the modulation source of the effect balance		
(Amount)	-100...+100	
Sets the modulation amount of the effect balance		

082: OD/HG-M.Dly

(Overdrive/Hi.Gain – Multitap Delay)

This effect combines a mono-type overdrive/high-gain distortion and a multitap delay.

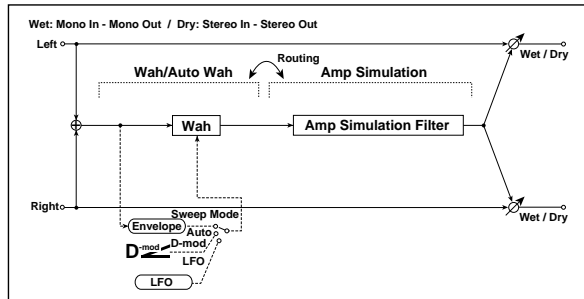


a	[OD] Mode (Drive Mode)	OverD, Hi-Gain
	Switches between overdrive and high-gain distortion	
b	Drive	1...100
	Sets the degree of distortion Fx:006	
c	Level (Output Level)	0...50
	Sets the overdrive output level Fx:006, 	
	(Source)	Off...Tempo
Selects the modulation source for the overdrive output level		
(Amount)	-50...+50	
Sets the modulation amount of the overdrive output level		
d	Lo (Low Cutoff)	20...1.00kHz
	Sets the center frequency for Low EQ (shelving type)	
e	G (Gain)	
	Sets the gain of Low EQ	
	M1 (Mid1 Cutoff)	300...10.00kHz
Sets the center frequency for Mid/High EQ 1 (peaking type)		
f	Q	
	Sets the band width of Mid/High EQ 1 Fx:006	
	G (Gain)	
Sets the gain of Mid/High EQ 1		
g	M2 (Mid2 Cutoff)	
	Sets the center frequency for Mid/High EQ 2 (peaking type)	
	Q	
Sets the band width of Mid/High EQ 2 Fx:006		
h	G (Gain)	
	Sets the gain of Mid/High EQ 2	
i	[DLY] T1 (Tap1 Delay)	0...680ms
	Sets the Tap1 delay time	
j	T2 (Tap2 Delay)	0...680ms
	Sets the Tap2 delay time	
k	T1 Level (Tap1 Level)	0...100
	Sets the Tap1 output level Fx:045	
l	T2 Fb (Tap2 Feedback)	-100...+100
	Sets the Tap2 feedback amount	
m	Dly W/D (Delay Wet/Dry)	Dry, 2:98...98:2, Wet
	Sets the multitap delay effect balance	
n	HiDamp (High Damp)	0...100%
	Sets the damping amount in the high range Fx:043	
o	W/D (Wet/Dly)	Dry, 1:99...99:1, Wet
	Sets the balance between the effect and dry sounds 	
	(Source)	Off...Tempo
Selects the modulation source of the effect balance		
(Amount)	-100...+100	
Sets the modulation amount of the effect balance		

083: Wah–AmpSim

(Wah/Auto Wah – Amp Simulation)

This effect combines a mono-type wah and an amp simulation. You can change the order of the effect connection.

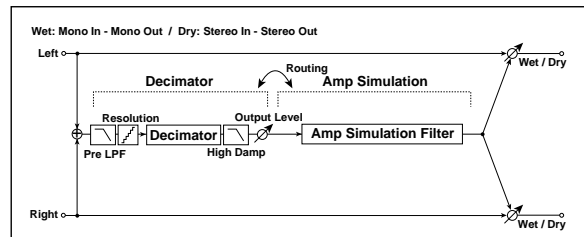


a	[WAH] Freq Btm (Frequency Bottom) Sets the lower limit of the wah center frequency	0...100 Fx:009
	Top (Frequency Top) Sets the upper limit of the wah center frequency	0...100 Fx:009
b	Swp Mode (Sweep Mode) Selects the control from auto-wah, modulation source, and LFO	Auto, Dmod, LFO Fx:009, D ^{mod}
	Src (Source) Selects the modulation source for the wah when Swp Mode=Dmod	Off...Tempo
c	lfoF (LFO Frequency) Sets the LFO speed	0.02...20.00Hz
d	Resonance Sets the resonance amount	0...100
	LPF (Low Pass Filter) Switches the wah low pass filter on and off	Off, On
e	[AMP] Amplifier Type Selects the type of guitar amplifier	SS, EL84, 6L6
f	[Routing] Switches the order of the wah and amp simulation connection	WAH → AMP, AMP → WAH
g	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

084: Deci–AmpSim

(Decimator – Amp Simulation)

This effect combines a mono-type decimator and an amp simulation. You can change the order of the effect connection.



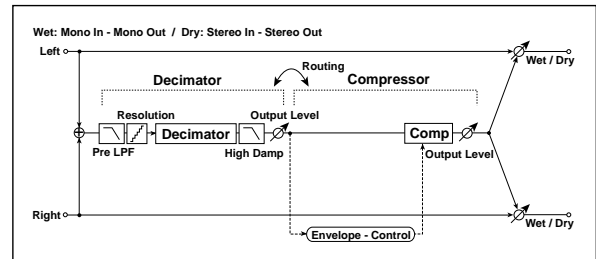
a	[DECI] Pre LPF Turn the harmonic noise caused by lowered sampling on and off	Off, On Fx:014
b	High Damp Sets the ratio of high-range damping	0...100%
c	Sampling Freq (Sampling Frequency) Sets the sampling frequency	1.00k...48.00kHz

d	Resolution Sets the data bit length	4...24 Fx:014
e	Level (Output Level) Sets the decimator output level	0...100 Fx:014
f	[AMP] Amplifier Type Selects the type of guitar amplifier	SS, EL84, 6L6
g	[Routing] Switches the order of the wah and amp simulation connection	DECI→AMP, AMP→DECI
h	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

085: Deci–Comp

(Decimator – Compressor)

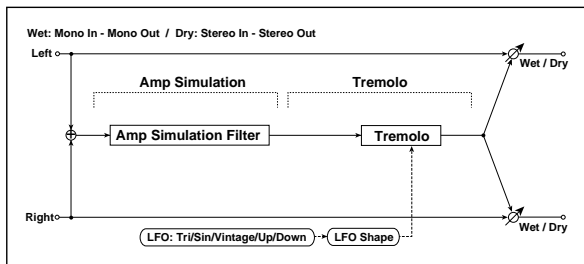
This effect combines a mono-type decimator and a compressor. You can change the order of the effect connection.



a	[DECI] Pre LPF Turn the harmonic noise caused by lowered sampling on and off	Off, On Fx:014
	High Damp Sets the ratio of high-range damping	0...100%
b	Sampling Freq (Sampling Frequency) Sets the sampling frequency	1.00k...48.00kHz
c	Resolution Sets the data bit length	4...24 Fx:014
d	Level (Output Level) Sets the decimator output level	0...100 Fx:014
e	[CMP] Sensitivity Sets the sensitivity	1...100 Fx:002
f	Attack Sets the attack level	1...100 Fx:002
	Level (Output Level) Sets the compressor output level	0...100 Fx:002
g	[Routing] Switches the order of the decimator and compressor connection	DECI→CMP, CMP→DECI
h	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

086: AmpSim-Trml (Amp Simulation – Tremolo)

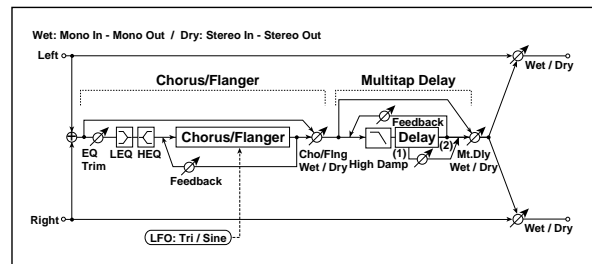
This effect combines a mono-type amp simulation and a tremolo.



a	[AMP] Amplifier Type Selects the type of guitar amplifier	SS, EL84, 6L6
b	[TRML] LFO Wave (LFO Waveform) Selects LFO Waveform	Triangle, Sine, Vintage, Up, Down F _x :032
c	LFO Shape Determines how much the LFO waveform is changed	-100...+100 F _x :020
d	Freq (LFO Frequency) Sets the LFO speed	0.02...20.00Hz
e	Depth Sets the depth of LFO modulation	0...100
f	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

087: Cho/Fl-M.Dly (Chorus/Flanger – Multitap Delay)

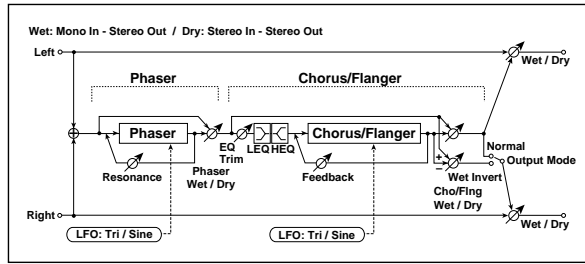
This effect combines a mono-type chorus/flanger and a multitap delay.



	[CH/FL] LFO (LFO Waveform) Selects the LFO waveform of the chorus/flanger	Tri, Sine
a	F (LFO Frequency) Sets the LFO speed	0.02...20.00Hz
b	Dly (Delay Time) Sets the delay time	0.0...50.0ms
	Dep (Depth) Sets the depth of LFO modulation	0...100
	Fb (Feedback) Sets the feedback amount	-100...+100 F _x :020
c	Pre EQ Trim Sets the EQ input level	0...100
d	LoEQ (Pre Low EQ Gain) Sets the gain of Low EQ	-15...+15dB
	HiEQ (Pre High EQ Gain) Sets the gain of High EQ	-15...+15dB
e	C/F W/D (Cho/Flng Wet/Dry) Sets the effect balance of the chorus/flanger	-Wet...-2:98, Dry, 2:98...Wet F _x :010, 020
f	[DLY]T1 (Tap1 Delay) Sets the Tap1 delay time	0...680ms
	T2 (Tap2 Delay) Sets the Tap2 delay time	0...680ms
g	T1 Level (Tap1 Level) Sets the Tap1 output level	0...100 F _x :045
	T2 Fb (Tap2 Feedback) Sets the Tap2 feedback amount	-100...+100
h	Dly W/D (Delay Wet/Dry) Sets the multitap delay effect balance	Dry, 1:99...99:1, Wet
	HiDamp (High Damp) Sets the damping amount in the high range	0...100% F _x :043
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

088: Phasr-Cho/FI (Phaser – Chorus/Flanger)

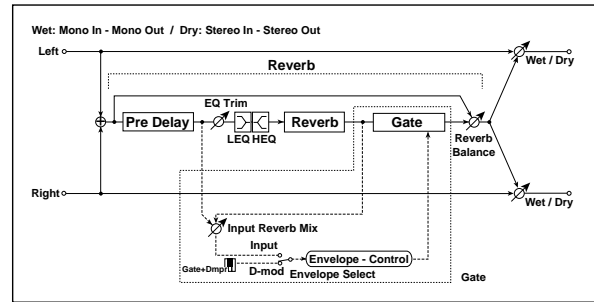
This effect combines a mono-type phaser and a chorus/flanger.



a	[PHS] LFO (LFO Waveform) Selects the LFO waveform of the phaser	Tri, Sine
	F (LFO Frequency) Sets the LFO speed	0.02...20.00Hz
b	Manu (Manual) Sets the frequency to which the effect is applied	0...100
	Dep (Depth) Sets the depth of LFO modulation	0...100
	Res (Resonance) Sets the resonance amount	-100...+100 F ₃₅ Fx:023
c	Phs W/D (Phaser Wet/Dry) Sets the phaser effect balance	-Wet...-2:98, Dry, 2:98...Wet F ₃₅ Fx:010, 023
d	[CH/FL] LFO (LFO Waveform) Selects the LFO waveform of the chorus/flanger	Tri, Sine
	F (LFO Frequency) Sets the LFO speed	0.02...20.00Hz
e	Dly (Delay Time) Sets the delay time	0.0...50.0ms
	Dep (Depth) Sets the depth of LFO modulation	0...100
	Fb (Feedback) Sets the feedback amount	-100...+100 F ₃₅ Fx:020
f	Pre EQ Trim Sets the EQ input level	0...100
g	LoEQ (Pre Low EQ Gain) Sets the gain of Low EQ	-15...+15dB
	HiEQ (Pre High EQ Gain) Sets the gain of High EQ	-15...+15dB
h	C/F W/D (Cho/Fing Wet/Dry) Sets the effect balance of the chorus/flanger	-Wet...-2:98, Dry, 2:98...Wet F ₃₅ Fx:010, 020
	Out (Output Mode) Selects the output mode for the chorus/flanger	Normal, Wet Inv F ₃₅ Fx:060
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D _{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

089: Reverb-Gate

This effect combines a mono-type reverb and a gate.



a	[REV] Reverb Time Sets the reverberation time	0.1...10.0sec
b	HiDamp (High Damp) Sets the damping amount in the high range	0...100%
	Pre Dly (Pre Delay) Sets the delay time of the reverb sound and gate control signal	0...200ms
c	Pre EQ Trim Sets the EQ input level	0...100
d	LoEQ (Pre Low EQ Gain) Sets the gain of Low EQ	-15...+15dB
	HiEQ (Pre High EQ Gain) Sets the gain of High EQ	-15...+15dB
e	Rev Balance (Reverb Balance) Sets the reverb effect balance	Dry, 1:99...99:1, Wet
f	[GATE] In Rev Mix (Input Reverb Mix) Sets the balance between the dry and reverb sounds of the gate control signal.	Dry, 1:99...99:1, Wet F ₃₅
g	Envelope (Envelope Select) Switches between modulation source control and input signal control	Dmod, Input F ₃₅
	Src (Source) Selects the modulation source that controls the gate when Envelope is set to Dmod	Off...G2+Dmp F ₃₅
h	Threshold Sets the gate threshold level	0...100 F ₃₅
	Polarity Switches between non-invert and invert of the gate on/off state	+ , - F ₃₅ Fx:005
i	Attack Sets the attack time	1...100 F ₃₅ Fx:005
	Release Sets the release time	1...100 F ₃₅ Fx:005
j	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D _{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

g: Envelope, g:Src, f: In Rev Mix, h: Threshold

The “Envelope” parameter enables you to select whether turning the gate on and off is triggered by the input signal level or controlled directly by the modulation source. You can select from **Off** to **G2+Dmp** for the Source parameter to specify the modulation source.

When “Envelope” is set to **Input**, the gate is controlled by the level of signals that are the combination of the dry sound and the reverb sound. When the signal level exceeds the threshold, the gate opens and the reverb sound is output.

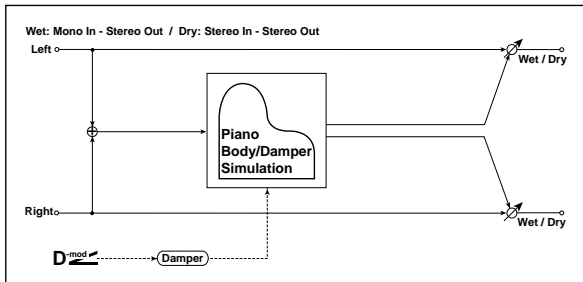
Normally, set “In Rev Mix” to **Dry** (the gate is controlled only by the dry sound). If you wish to extend the gate time, set the “In Rev Mix” value higher and adjust the “Threshold” value.

Double Size

Double-size effects
(Available for Insert Effects IFX2, 3, and 4)

090: Piano Body (Piano Body/Damper Simulation)

This effect simulates the resonance of the piano sound board caused by the string vibration, and also simulates the resonance of other strings that are not being played when you press the damper pedal. It will create a very realistic sound when applied to acoustic piano sounds.



a	Sound Board Depth Sets the intensity of resonance of the sound board	0...100 FX
b	DamperDep (Damper Depth) Sets the intensity of the string resonance created when the damper pedal is pressed	0...100 FX, D-mod
	Src (Source) Selects the modulation source of damper effect	Off...Tempo FX
c	Tone Sets tonal quality of effect sound	1...100 FX
d	Mid Shape Sets the mid range of tonal quality	0...36 FX
e	Tune Fine tuning	-50...+50 FX
f	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D-mod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: Sound Board Depth

This parameter sets the intensity of resonance of the piano sound board.

b: DamperDep, b: Src

This parameter sets the resonance intensity of the other strings created when the damper pedal is pressed. The "Src" parameter selects the modulation source from which the damper effect is applied. Usually, select **Dmp #64** (Damper pedal).

MIDI The effect is off when a value for the modulation source specified for the "Src" parameter is 63 or smaller, and the effect is on when the value is 64 or higher.

c: Tone, d: Mid Shape

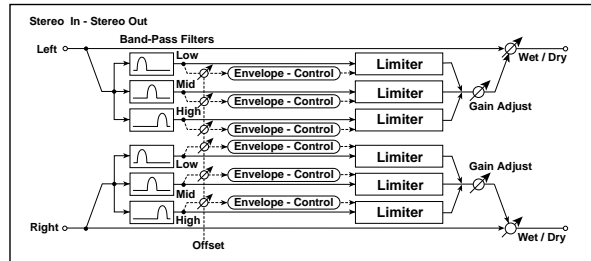
These parameters control the tonal quality of the effect sound.

e: Tune

Since this effect simulates the resonance of the strings, the sound varies depending on the pitch. If you have changed tuning using the "Master Tune" (GLOBAL 1. 1-1a), adjust this parameter value.

091: St.MltbandLmt (Stereo Multiband Limiter)

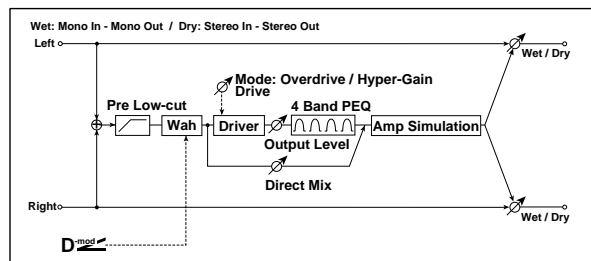
This is a stereo multiband limiter.



a	Ratio Sets the signal compression ratio	1.0:1...50.0:1, Inf:1 FX:003
b	Threshold Sets the level above which the compressor is applied	-40...0dB FX:003
c	Attack Sets the attack time	1...100 FX:003
d	Release Sets the release time	1...100 FX:003
e	Low Offset Sets the low range gain of trigger signal	-40...0dB FX:004
f	Mid Offset Sets the mid range gain of trigger signal	-40...0dB FX:004
g	High Offset Sets the high range gain of trigger signal	-40...0dB FX:004
h	G.Adj (Gain Adjust) Sets the output gain	-Inf, -38...+24dB FX:003, D-mod
	(Source) Selects the modulation source for the output gain	Off...Tempo
	(Amount) Sets the modulation amount of the output gain	-63...+63
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D-mod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

092: OD/HyprG Wah (Overdrive/Hyper Gain Wah)

This distortion effect has two modes: overdrive and hyper-gain that produces a strong distortion. A higher high-gain setting is required for this effect relative to a normal-size effect.



a	Wah Switches Wah on/off	Off, On F _x :006, D _{mod}
	(Source) Selects the modulation source that switches the Wah on and off	Off...Tempo F _x :006
	(Sw) Selects the switching mode for the modulation source that switches the Wah on and off	Tggl. Mmnt F _x :006
b	SweepRng (Wah Sweep Range) Sets the range of Wah	-10...+10 F _x :006, D _{mod}
	Src (Source) Selects the modulation source that controls the Wah	Off...Tempo
c	Mode (Drive Mode) Switching between overdrive and hyper-gain mode	Overdrive, HyperGain
	Drive Sets the degree of distortion	1...120 F _x :006
d	Pre Low-cut Sets the low range cut amount of the distortion input	0...10 F _x :006
e	Level (Output Level) Sets the output level	0...50 F _x :006, D _{mod}
	(Source) Selects the modulation source for the output level	Off...Tempo
	(Amount) Sets the modulation amount of the output level	-50...+50
f	Lo (Low Cutoff) Sets the center frequency for Low EQ (shelving type)	20...1.00kHz
	G (Gain) Sets the gain of Low EQ	-18...+18dB
g	M1 (Mid1 Cutoff) Sets the center frequency for Mid/High EQ 1 (peaking type)	300...10.00kHz
	Q Sets the band width of Mid/High EQ 1	0.5...10.0 F _x :006
	G (Gain) Sets the gain of Mid/High EQ 1	-18...+18dB
h	M2 (Mid2 Cutoff) Sets the center frequency for Mid/High EQ 2 (peaking type)	500...20.00kHz
	Q Sets the band width of Mid/High EQ 2	0.5...10.0 F _x :006
	G (Gain) Sets the gain of Mid/High EQ 2	-18...+18dB
i	Direct Mix Amount of the dry sound mixed to the distortion	0...50
	SpSim (Speaker Simulation) Speaker simulation on/off	Off, On
j	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D _{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a	L (Carrier) Trim Sets the input level of left channel (Carrier)	0...100
	R (Modulator) Trim Sets the input level of right channel (Modulator)	0...100
c	Formant Shift Sets the height of the frequency for the vocoder effect	-2...+2 F _x
d	Response Sets the speed of the response to the modulator input	0...100
e	LoGain (Low Gain) Sets the low-range output level of the vocoder	-12...+12
	HiGain (High Gain) Sets the high-range output level of the vocoder	-12...+12
f	Noise (Noise Level) Sets the noise mix level to the Carrier	0...100 F _x , D _{mod}
	(Source) Selects the modulation source for the noise mix level	Off...Tempo
	(Amount) Sets the modulation amount for the noise mix level	-100...+100
g	Modulator High Mix Sets the high-range output level of the modulator	0...100 F _x
h	V/C (Vocoder/Carrier) Sets the balance between the vocoder output and the Carrier	Carrier, 1:99...99:1, Vocoder F _x , D _{mod}
	(Source) Selects the modulation source for the balance between the vocoder output and the carrier	Off...Tempo
	(Amount) Sets the modulation amount of the balance between the vocoder output and the carrier	-100...+100
i	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet F _x , D _{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

c: Formant Shift

By offsetting the Carrier filter, you can adjust the height of the frequency range to which the vocoder effect is applied. The tonal quality will change significantly.

f: Noise

This parameter enables you to mix white noise with the Carrier.

g: Modulator High Mix

This parameter sets the high-range output level of the right channel sound (Modulator). If the modulator is a human voice, it will make the words more clear.

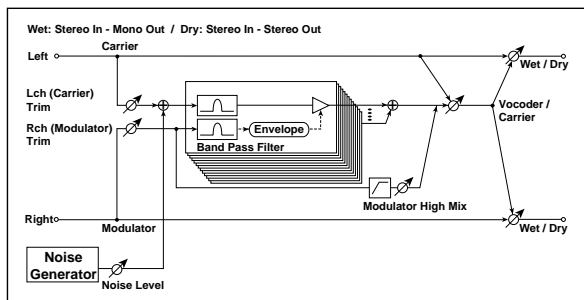
h: V/C, i: W/D

The "V/C" parameter sets the balance between the vocoder sound and the left channel sound (Carrier). The "W/D" parameter sets the balance between the effect and dry sound.

If you wish to change the intensity of the vocoder effect, select **Wet** for "W/D", and adjust the balance using the "V/C" parameter.

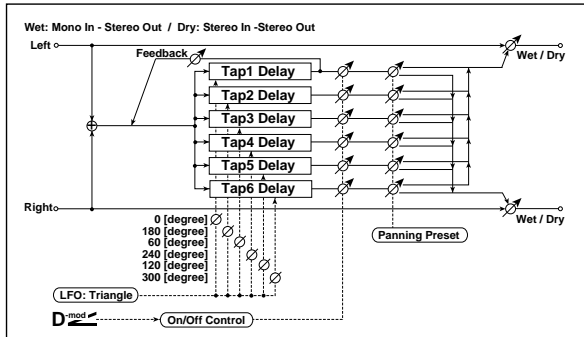
093: Vocoder

This effect applies the character of the right channel signal (Modulator) to the left channel signal input (Carrier). Sounds such as rhythm and sound effects are suitable for use as the modulator, and sounds with rich harmonic structure such as strings and distortion guitar are suitable for use as the carrier.



094: MltTap ChoDly (Multitap Chorus/Delay)

This effect has six chorus blocks with different LFO phases. You can produce a complex stereo image by setting a different delay time and depth for each block. You can control the delay output level via a modulation source.



a	LFO Freq (LFO Frequency) Sets the LFO speed	0.02...13.00Hz
b	T1(000) (Tap1 Delay) Sets the Tap1 (LFO phase=0 degrees) delay time	0...570ms
	D (Depth) Sets the Tap1 chorus depth	0...30
	S (Staus) Selects on, off, or modulation source for the control of Tap1 output	On, Off, On→Off, Off→On E ³⁸ , D ^{mod}
c	T2(180) (Tap2 Delay) Sets the Tap2 (LFO phase=180 degrees) delay time	0...570ms
	D (Depth) Sets the Tap2 chorus depth	0...30
	S (Staus) Selects on, off, or modulation source for the control of Tap2 output	On, Off, On→Off, Off→On E ³⁸ , D ^{mod}
d	T3(060) (Tap3 Delay) Sets the Tap3 (LFO phase=60 degrees) delay time	0...570ms
	D (Depth) Sets the Tap3 chorus depth	0...30
	S (Staus) Selects on, off, or modulation source for the control of Tap3 output	On, Off, On→Off, Off→On E ³⁸ , D ^{mod}
e	T4(240) (Tap4 Delay) Sets the Tap4 (LFO phase=240 degrees) delay time	0...570ms
	D (Depth) Sets the Tap4 chorus depth	0...30
	S (Staus) Selects on, off, or modulation source for the control of Tap4 output	On, Off, On→Off, Off→On E ³⁸ , D ^{mod}
f	T5(120) (Tap5 Delay) Sets the Tap5 (LFO phase=120 degrees) delay time	0...570ms
	D (Depth) Sets the Tap5 chorus depth	0...30
	S (Staus) Selects on, off, or modulation source for the control of Tap5 output	On, Off, On→Off, Off→On E ³⁸ , D ^{mod}
g	T6(300) (Tap6 Delay) Sets the Tap6 (LFO phase=300 degrees) delay time	0...570ms
	D (Depth) Sets the Tap6 chorus depth	0...30
	S (Staus) Selects on, off, or modulation source for the control of Tap6 output	On, Off, On→Off, Off→On E ³⁸ , D ^{mod}
h	Panning (Panning Preset) Specifies the stereo image of each Tap	1, 2, 3, 4 E ³⁸

i	T1 Fb (Tap1 Feedback) Sets the Tap1 feedback amount	-100...+100 D ^{mod}
	(Source) Selects the modulation source for the Tap output level, feedback amount, and effect balance	Off...Tempo E ³⁸
	(Amount) Sets the modulation amount of Tap1 feedback amount	-100...+100 E ³⁸
j	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Amount) Sets the modulation amount of the effect balance	-100...+100 E ³⁸

b: S, c: S, d: S, e: S, f: S, g: S

These parameters set the output status of each Tap.

On: Output is always on. (No modulation)

Off: Output is always off. (No modulation)

On→Off: Output level is switched from on to off depending on the modulation source.

Off→On: Output level is switched from off to on depending on the modulation source.

Combining these parameters, you can change from 4-phase chorus to two-tap delay by crossfading them gradually via the modulation source during a performance.

h: Panning

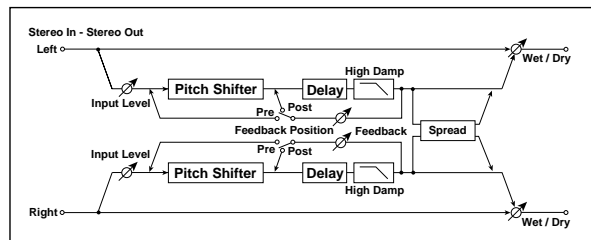
This parameter selects combinations of stereo images of the tap outputs.

i: (Source), i: (Amount), j: (Amount)

Tap output level, feedback amount and effect balance are controlled simultaneously via a modulation source.

095: St.Pitch Shift (Stereo Pitch Shifter)

This is a stereo pitch shifter. The pitch shift amount for the left and right channels can be reversed from each other.



a	Mode Switches Pitch Shifter mode	Slow, Medium, Fast E ³⁸ Fx:038
	L/R (L/R Pitch) Determines whether or not the L/R pitch shift amount is inverted	Normal, Up/Down E ³⁸
b	Shift (Pitch Shift) Sets the pitch shift amount in steps of a semitone	-24...+24 E ³⁸ Fx:038, D ^{mod}
	(Source) Selects the modulation source of pitch shift amount	Off...Tempo E ³⁸ Fx:038
	(Amount) Sets the modulation amount of pitch shift amount	-24...+24 E ³⁸ Fx:038
c	Fine Sets the pitch shift amount in steps of one cent	-100...+100cent E ³⁸ Fx:038, D ^{mod}
	(Amount) Sets the modulation amount of pitch shift amount	-100...+100cent E ³⁸ Fx:038
d	L Delay (L Delay Time) Sets the delay time for the left channel	0...1000ms
e	R Delay (R Delay Time) Sets the delay time for the right channel	0...1000ms
f	Feedback Position Switches the feedback connection	Pre, Post E ³⁸ Fx:038

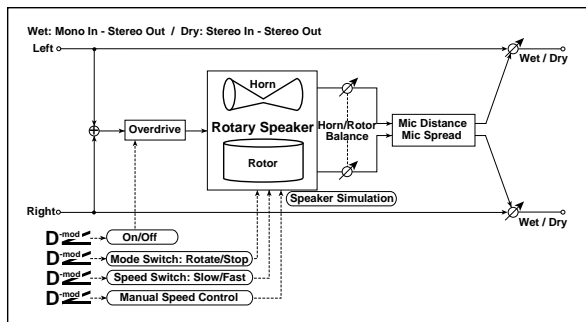
g	Feedback Sets the feedback amount	-100...+100 F ^{mod} Fx:038
	HiDamp (High Damp) Sets the damping amount in the high range	0...100%
h	InLvl Mod (Input Level Dmod [%]) Sets the modulation amount of the input level	-100...+100 F ^{mod} Fx:037, D ^{mod}
	Src (Source) Selects the modulation source for the input level	Off...Tempo F ^{mod} Fx:037
i	Spread Sets the width of the stereo image of the effect sound	-100...+100 F ^{mod} Fx:043
j	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: L/R

When you select **Up/Down** for this parameter, the pitch shift amount for the right channel will be reversed. If the pitch shift amount is positive, the pitch of the left channel is raised, and the pitch of the right channel is lowered.

096: Rotary SP OD (Rotary Speaker Overdrive)

This is a stereo rotary speaker effect. It has an internal speaker simulator that simulates overdrive (recreating the amp distortion) and characteristics of the rotary speaker, producing a very realistic rotary speaker sound.



a	OD (Overdrive) Switches overdrive on/off.	Off, On D ^{mod}
	(Source) Selects the modulation source that switches overdrive on/off	Off...Tempo
	(Sw) Selects the switching mode of the modulation source that switches overdrive on/off	Tggl, Mmnt F ^{mod}
b	OD Gain (Overdrive Gain) Determines the degree of distortion	0...100
	Level (Overdrive Level) Sets the overdrive output level	0...100
c	OD Tone (Overdrive Tone) Sets the tonal quality of overdrive	0...15
	SpSim (Speaker Simulation) Switches speaker simulation on/off	Off, On
d	Mode (Mode Switch) Switches between speaker rotation and stop	Rotate, Stop D ^{mod}
	(Source) Selects the modulation source that toggles between rotation and stop	Off...Tempo
	(Sw) Selects the switching mode of the modulation source that toggles between rotation and stop	Tggl, Mmnt F ^{mod} Fx:040

e	Speed (Speed Switch) Switches the speaker rotation speed between slow and fast.	Slow, Fast D ^{mod}
	(Source) Selects the modulation source that toggles between slow and fast	Off...Tempo
f	(Sw) Selects the switching mode of the modulation source that toggles between slow and fast	Tggl, Mmnt F ^{mod} Fx:040
	H/R Bal (Horn/Rotor Balance) Sets the volume level balance between the high-range horn and low-range rotor	Rot, 1...99, Hrn
g	ManuSp (Manual Speed Control) Sets the modulation source in case the rotation speed is changed directly	Off...Tempo F ^{mod} Fx:040, D ^{mod}
	Horn Accel (Horn Acceleration) How quickly the horn rotation speed in the high range is switched	0...100 F ^{mod} Fx:040
h	Ratio (Horn Ratio) Adjusts the (high-range side) horn rotation speed. Standard value is 1.00. Selecting "Stop" will stop the rotation	Stop, 0.50...2.00
	Rotor Accel (Rotor Acceleration) Determines how quickly the rotor rotation speed in the low range is switched	0...100 F ^{mod} Fx:040
i	Ratio (Rotor Ratio) Adjusts the (low-range side) rotor rotation speed. Standard value is 1.0. Selecting "Stop" will stop the rotation	Stop, 0.50...2.00
	MicDistance Distance between the microphone and rotary speaker	0...100 F ^{mod} Fx:040
j	Spread (Mic Spread) Angle of left and right microphones	0...100 F ^{mod} Fx:040
	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D ^{mod}
k	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

a: (Sw)

This parameter determines how to switch on/off the overdrive via a modulation source.

When "(Sw)" = **Tggl (Toggle)**, overdrive is turned on/off each time the pedal or joystick is operated.

MIDI Overdrive will be switched on/off each time the value of the modulation source exceeds 64.

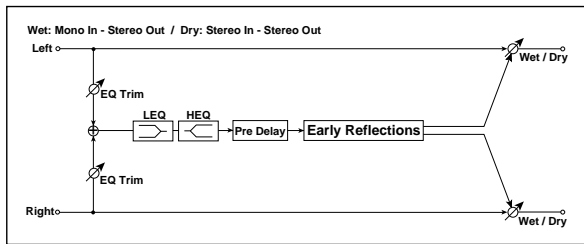
When "(Sw)" = **Mmnt (Moment)**, overdrive is applied only when you press the pedal or operate the joystick.

MIDI Only when the value for the modulation source is 64 or higher, the overdrive effect is applied.

097: Early Reflect

(Early Reflections)

This early reflection effect has more precise early reflections with twice the maximum length of a normal-size effect (Fx:041). You can create a very smooth and dense sound.

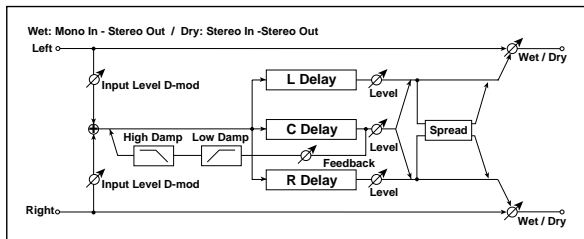


a	Type Selects the decay curve for the early reflection	Sharp, Loose, Modulated, Reverse Fx:041
b	ER Time Sets the time length of early reflection	10...1600ms
c	Pre Delay Sets the time taken from the original sound to the first early reflection	0...200ms
d	Pre EQ Trim Sets the input level of EQ applied to the effect sound	0...100
e	LoEQ (Pre Low EQ Gain) Sets the gain of Low EQ	-15.0...+15.0dB
	HiEQ (Pre High EQ Gain) Sets the gain of High EQ	-15.0...+15.0dB
f	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D-mod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

098: LCR Long Delay

(L/C/R Long Delay)

This multitap delay outputs three Tap signals to left, right and center respectively. You can set a maximum of 2,730msec for the delay time.



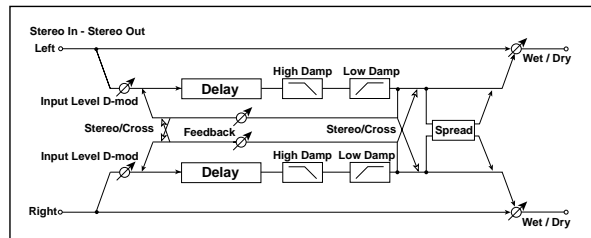
a	L Delay (L Delay Time) Sets the delay time of TapL	0...2730ms
	Level Sets the output level of TapL	0...50
b	C Delay (C Delay Time) Sets the delay time of TapC	0...2730ms
	Level Sets the output level of TapC	0...50
c	R Delay (R Delay Time) Sets the delay time of TapR	0...2730ms
	Level Sets the output level of TapR	0...50
d	C Fb (C Delay Feedback) Sets the feedback amount of TapC	-100...+100 D-mod
	(Source) Selects the modulation source of the TapC feedback amount	Off...Tempo
	(Amount) Sets the modulation amount of the TapC feedback amount	-100...+100

e	HiDamp (High Damp) Sets the damping amount in the high range	0...100% Fx:043
	LoDamp (Low Damp) Sets the damping amount in the low range	0...100% Fx:043
f	InLvl Mod (Input Level Dmod [%]) Sets the modulation amount of the input level	-100...+100 Fx:037, D-mod
	Src (Source) Selects the modulation source for the input level	Off...Tempo Fx:037
g	Spread Sets the width of the stereo image of the effect sound	0...50 Fx:043
h	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D-mod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

099: St/Cross LDly

(Stereo/Cross Long Delay)

This is a stereo delay, and can be used as a cross-feedback delay effect in which the delay sounds cross over between left and right by changing the feedback routing. You can set a maximum of 1,360msec for the delay time.

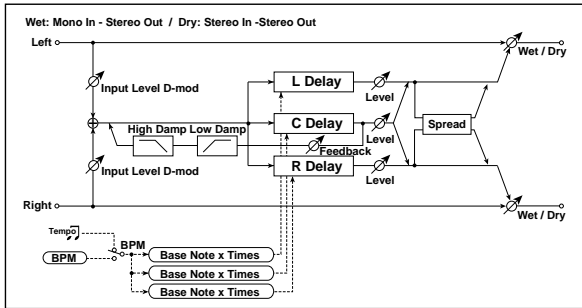


a	Stereo/Cross Switches between stereo delay and cross-feedback delay	Stereo, Cross
b	L Delay (L Delay Time) Sets the delay time for the left channel	0.0...1360.0ms
c	R Delay (R Delay Time) Sets the delay time for the right channel	0.0...1360.0ms
d	L Fb (L Feedback) Sets the feedback amount for the left channel	-100...+100 D-mod
	(Source) Selects the modulation source of feedback amount	Off...Tempo
	(Amount L) Sets the modulation amount of the left channel feedback	-100...+100
e	R Fb (R Feedback) Sets the feedback amount for the right channel	-100...+100 D-mod
	(Amount R) Sets the modulation amount of the right channel feedback	-100...+100
f	HiDamp (High Damp) Sets the damping amount in the high range	0...100% Fx:043
g	LoDamp (Low Damp) Sets the damping amount in the low range	0...100% Fx:043
h	InLvl Mod (Input Level Dmod [%]) Sets the modulation amount of the input level	-100...+100 Fx:037, D-mod
	Src (Source) Selects the modulation source for the input level	Off...Tempo Fx:037
i	Spread Sets the width of the stereo image of the effect sound	-50...+50 Fx:043
j	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet D-mod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

100: LCR BPM LDly

(L/C/R BPM Long Delay)

The L/C/R delay enables you to match the delay time with the song tempo. You can set the delay time up to 2,730msec.



a	BPM Selects MIDI Clock and assigns tempo	MIDI, 40...240 Fx:049, Sync
b	L Bs (L Delay Base Note) Selects the type of notes to specify the delay time for TapL	Fx:049, Sync
	Times Sets the number of notes to specify the delay time for TapL	1...16
	Level Sets the output level of TapL	0...50
c	C Bs (C Delay Base Note) Selects the type of notes to specify the delay time for TapC	Fx:049, Sync
	Times Sets the number of notes to specify the delay time for TapC	1...16
	Level Sets the output level of TapC	0...50
d	R Bs (R Delay Base Note) Selects the type of notes to specify the delay time for TapR	Fx:049, Sync
	Times Sets the number of notes to specify the delay time for TapR	1...16
	Level Sets the output level of TapR	0...50
e	C Fb (C Delay Feedback) Sets the feedback amount of TapC	-100...+100 Dmod
	(Source) Selects the modulation source for the TapC feedback	Off...Tempo
	(Amount) Sets the modulation amount of the TapC feedback	-100...+100
f	Time Over? > Displays an error message when the delay time exceeds the upper limit	----, OVER! Fx
g	HiDamp (High Damp) Sets the damping amount in the high range	0...100% Fx:043
	LoDamp (Low Damp) Sets the damping amount in the low range	0...100% Fx:043
h	InLvl Mod (Input Level Dmod [%]) Sets the modulation amount of the input level	-100...+100 Fx:037, Dmod
	Src (Source) Selects the modulation source for the input level	Off...Tempo Fx:037
i	Spread Sets the width of the stereo image of the effect sound	0...50 Fx:043
j	W/D (Wet/Dly) Sets the balance between the effect and dry sounds	Dry, 1:99...99:1, Wet Dmod
	(Source) Selects the modulation source of the effect balance	Off...Tempo
	(Amount) Sets the modulation amount of the effect balance	-100...+100

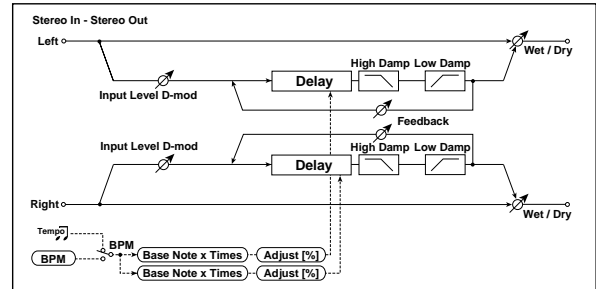
f: Time Over? >

You can set the delay time up to 2,730msec. If the delay time exceeds this limit, the error message "OVER!" appears on the display. Set the delay time parameters so that this message will not appear. "Time Over?>" is only a display parameter.

101: St.BPM LDelay

(Stereo BPM Long Delay)

The stereo delay enables you to match the delay time with the song tempo. You can set the delay time up to 1365msec.



a	BPM Selects MIDI Clock and assigns tempo	MIDI, 40...240 Fx:049, Sync
b	L Bs (L Delay Base Note) Selects the type of notes to specify the left channel delay time	Fx:049, Sync
	Times Sets the number of notes to specify the left channel delay time	1...16 Fx:049
	Adj (Adjust) Fine-adjust the left channel delay time	-2.50...+2.50%
c	R Bs (R Delay Base Note) Selects the type of notes to specify the right channel delay time	Fx:049, Sync
	Times Sets the number of notes to specify the right channel delay time	1...16 Fx:049
	Adj (Adjust) Fine-adjust the right channel delay time	-2.50...+2.50%
d	L Fb (L Feedback) Sets the feedback amount for the left channel	-100...+100 Dmod
	(Source) Selects the modulation source of feedback amount	Off...Tempo
	(Amount L) Sets the modulation amount of the left channel feedback	-100...+100
e	R Fb (R Feedback) Sets the feedback amount for the right channel	-100...+100 Dmod
	(Source) Selects the modulation source of feedback amount	Off...Tempo
	(Amount R) Sets the modulation amount of the right channel feedback	-100...+100
f	Time Over? L > Display the error message if the left channel delay time exceeds the upper limit	----, OVER! Fx
	R > Display the error message if the right channel delay time exceeds the upper limit	----, OVER! Fx
g	HiDamp (High Damp) Sets the damping amount in the high range	0...100% Fx:043
	LoDamp (Low Damp) Sets the damping amount in the low range	0...100% Fx:043
h	InLvl Mod (Input Level Dmod [%]) Sets the modulation amount of the input level	-100...+100 Fx:037, Dmod
	Src (Source) Selects the modulation source for the input level	Off...Tempo Fx:037

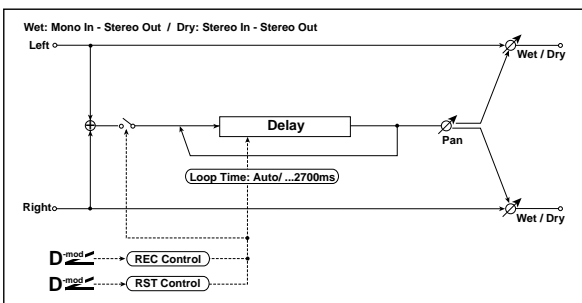
i	W/D (Wet/Dly)	Dry, 1:99...99:1, Wet	
	Sets the balance between the effect and dry sounds		
	(Source)	Off...Tempo	
Selects the modulation source of the effect balance			
(Amount)	-100...+100		
Sets the modulation amount of the effect balance			

f: Time Over? L >, f: R >

You can set the delay time up to 1365msec. If the delay time exceeds this limit, the error message "OVER!" appears on the display. Set the delay time parameters so that this message will not appear. "Time Over?>" is only a display parameter.

102: Hold Delay

This effect records the input signal and plays it back repeatedly. You can control the start of recording and reset via a modulation source. Easy to use for real-time performances.



a	Loop Time	Auto, 1...2700ms	
Sets Automatic loop time setup mode or specifies loop time			
b	REC Control Src	Off...Tempo	
Selects control source for recording			
c	RST Control Src	Off...Tempo	
Selects control source for reset			
d	Manual REC Ctrl	REC Off, REC On	
Sets the recording switch			
e	Manual RST Ctrl	Off, RESET	
Sets the reset switch			
f	Pan	L100...L1, C, R1...R100	
	Sets the stereo image of the effect		
	(Source)	Off...Tempo	
Selects the modulation source of stereo image of the effect			
(Amount)	-100...+100		
Sets the modulation amount of stereo image of the effect			
g	W/D (Wet/Dly)	Dry, 1:99...99:1, Wet	
	Sets the balance between the effect and dry sounds		
	(Source)	Off...Tempo	
Selects the modulation source of the effect balance			
(Amount)	-100...+100		
Sets the modulation amount of the effect balance			

a: Loop Time

With **Auto**, the loop time is automatically set. Otherwise, you can specify the loop time.

When **Auto** is selected, the Loop Time is automatically set to the time it takes for a performance recorded while the Modulation Source or "Manual REC Ctrl" is on. However, if the time length exceeds 2,700msec, the loop time will be automatically set to 2,700msec.

b: REC Control Src, d: Manual REC Ctrl

"REC Control Src" selects the modulation source that controls recording.

If this modulation is on, or if "Manual REC Ctrl" is set to **REC On**, you can record the input signal. If a recording has already been carried out, additional signals will be overdubbed.

MIDI The effect is off when a value for the modulation source specified for the "REC Control Src" parameter is 63 or smaller, and the effect is on when the value is 64 or higher.

c: RST Control Src, e: Manual RST Ctrl

The "RST Control Src" parameter specifies the modulation source that controls the reset operation.

When you set this modulation source to On, or "Manual RST Ctrl" to **RESET**, you can erase what you recorded. If the Loop Time parameter has been set to **Auto**, the loop time is also reset.

MIDI The effect is off when a value for the modulation source specified for the "RST Control Src" parameter is 63 or smaller, and the effect is on when the value is 64 or higher.

"Hold" procedure (when Loop Time = Auto)



Select the following options for each parameter:

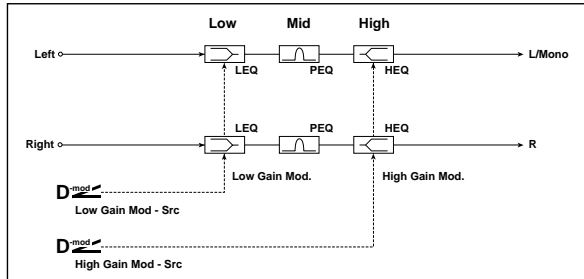
- "Loop Time [msec]"=**Auto**
 "REC Control Src"=**JS +Y#1**
 "RST Control Src"=**JS -Y#2**
 "Manual REC Ctrl"=**REC Off**
 "Manual RST Ctrl"=**RESET**
 It should be noted that all recordings will be deleted while Reset is On.
- "Manual RST Ctrl"=**Off**
 Reset is cancelled and the unit enters Rec ready mode.
- Push the joystick in the +Y direction (forward) and play a phrase you wish to hold. When you pull the joystick to its original position, the recording will be finished and the phrase you just played will be held.
 Loop Time is automatically set only for the first recording after resetting. If the time length exceeds 2,700msec, Loop Time will be automatically set to 2,700msec. (If you have set "Loop Time" to **1-2,700msec**, the specified loop time will be used regardless of the time taken from pushing the joystick forward until it is pulled back. However, the recording method remains the same. The phrase being played while the joystick is pushed forward will be held.)
- If you made a mistake during recording, pull the joystick in the -Y direction (back) to reset. In this way, the recording will be erased. Repeat step ③ again.
- The recorded phrase will be repeated again and again. You can use this to create an accompaniment.
- By pushing the joystick in the +Y direction (forward), you can also overdub performances over the phrase that is being held.



Master EQ

Master EQ

Use 7.3–4: Master EQ in Program, Combination, Sequencer, and Song Play modes.

-  You cannot use the Master EQ in Sampling mode.
-  You cannot use the Master EQ for the Insert Effects or Master Effects.



a	Low Cutoff Sets the cutoff frequency of Low EQ (shelving type)	20...1.00KHz
	Gain Sets the gain of Low EQ	-18.0...+18.0 (0.5step)dB 
b	Mid Cutoff Sets the cutoff frequency of Mid EQ (peaking type)	300...10.00KHz
	Q Sets the band width of Mid EQ. With a higher value, the band become narrower.	0.5...10.0 (0.1step)
	Gain Sets the gain of Mid EQ	-18.0...+18.0 (0.5step)dB
c	High Cutoff Sets the cutoff frequency of High EQ (shelving type)	500...20.00KHz
	Gain Sets the gain of High EQ	-18.0...+18.0 (0.5step)dB 
d	Low Gain Mod-Src Selects the modulation source for Low Gain	Off...Tempo
e	High Gain Mod-Src Selects the modulation source for High Gain	Off...Tempo

a: Gain, b: Gain, c: Gain

These parameters are linked with the “Master EQ Gain [dB]” (7.3–1c) parameter of the Master FX.

d: Low Gain Mod-Src

For example, when this parameter is set to **Kb1#17**, you can control the EQ gain in the range from -18dB to +18dB during performance using the [REALTIME CONTROLS] knob. At this time, set Knob 1-B to **Knob Mod1 (CC#17)** for “Knob B-Assign” (Program, Combination, Sequencer, Song Play 2.2–1a). The 12 o’clock position of the knob corresponds to the “Low Gain” value here.

e: High Gain Mod-Src

For example, when this parameter is set to **Kb2#19**, you can control the EQ gain in the range from -18dB to +18dB during performance using the [REALTIME CONTROLS] knob. At this time, set Knob 2-B to **Knob Mod2 (CC#19)** for “Knob B-Assign” (Program, Combination, Sequencer, Song Play 2.2–1a). The 12 o’clock position of the knob corresponds to the High Gain value here.

8. Appendices

Alternate Modulation Source (AMS)

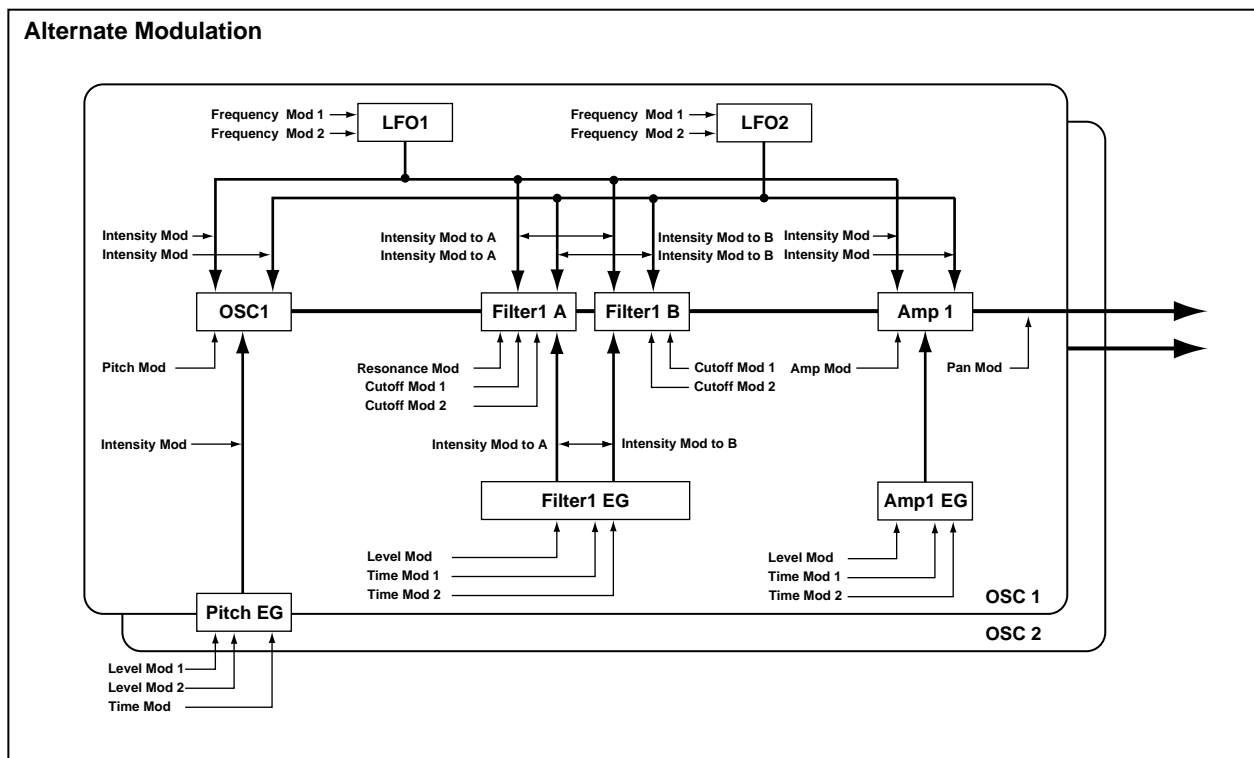
About Alternate Modulation

Alternate Modulation can be specified for the following 29 types, in total, 55 alternate modulation destinations shown in the diagram below. (Pitch EG is common to OSC 1 and 2.) AMS (Alternate Modulation Source) can be selected independently for each of these to apply modulation.

About Alternate Modulation Sources

There are 42 Alternate Modulation sources (AMS) that can control Alternate Modulation destinations. If you select two or more Alternate Modulation destinations for control by the same AMS, a single source will apply modulation to each of the specified destinations.

Frequently used assignments such as using the joystick (X) to control pitch are provided as special parameters, so it is not necessary to use Alternate Modulation to accomplish this.



Different types of Alternate Modulation are used to control the bank F programs (which can be used when the separately sold EXB-MOSS option is installed). (See EXB-MOSS owner's manual & p.269 "EXB-MOSS option")

AMS (Alternate Modulation Source) List

Off	do not use Alternate Modulation
(PEG) Pitch EG	pitch EG
(FEG) Filter EG	filter EG within the same oscillator
(AEG) Amp EG	amp EG within the same oscillator
(LFO) LFO1	LFO1 within the same oscillator
(LFO) LFO2	LFO2 within the same oscillator
(KT) Flt KT +/- (Filter Keyboard Track +/-)	filter keyboard tracking within the same oscillator (p.223)
(KT) Flt KT +/- (Filter Keyboard Track +/-)	filter keyboard tracking within the same oscillator (p.223)
(KT) Flt KT 0/+ (Filter Keyboard Track 0/+)	filter keyboard tracking within the same oscillator (p.223)
(KT) Flt KT +/0 (Filter Keyboard Track +/0)	filter keyboard tracking within the same oscillator (p.223)
(KT) Amp KT +/- (Amp Keyboard Track +/-)	amp keyboard tracking within the same oscillator (p.223)
(KT) Amp KT +/- (Amp Keyboard Track +/-)	amp keyboard tracking within the same oscillator (p.223)
(KT) Amp KT 0/+ (Amp Keyboard Track 0/+)	amp keyboard tracking within the same oscillator (p.223)
(KT) Amp KT +/0 (Amp Keyboard Track +/0)	amp keyboard tracking within the same oscillator (p.223)
(KT) Note No. (Note Number)	note number
(EXT) Velocity	velocity
(EXT) Poly After (Poly After Touch)	polyphonic after touch (transmitted from this instrument only as sequence data)
(EXT) AfterT (After Touch)	after touch (channel after touch)
(EXT) JS X (Joy Stick X)	joystick X (horizontal) axis
(EXT) JS+Y #01 (Joy Stick +Y: CC#01)	joystick +Y (vertical upward) direction (CC#01)
(EXT) JS-Y #02 (Joy Stick -Y: CC#02)	joystick -Y (vertical downward) direction (CC#02)
(EXT) JS+Y&AT/2 (Joy Stick +Y & After Touch/2)	joystick +Y (vertical upward) direction and after touch (p.223)
(EXT) JS-Y&AT/2 (Joy Stick -Y & After Touch/2)	joystick -Y (vertical downward) direction and after touch (p.223)
(EXT) Pedal #04 (Foot Pedal: CC#04)	assignable foot pedal (CC#04) (p.223)
(EXT) Ribbon #16 (Ribbon: CC#16)	MIDI CC#16: controller (ribbon controller)
(EXT) Slider #18 (Value Slider: CC#18)	value slider (CC#18) (p.223)
(EXT) KnobM1#17 (Knob Mod1: CC#17)	realtime control knob 1 in B mode (knob modulation 1 CC#17) (p.223)
(EXT) KnobM2#19 (Knob Mod2: CC#19)	realtime control knob 2 in B mode (knob modulation 2 CC#19) (p.223)
(EXT) KnobM3#20 (Knob Mod3: CC#20)	realtime control knob 3 in B mode (knob modulation 3 CC#20) (p.223)
(EXT) KnobM4#21 (Knob Mod4: CC#21)	realtime control knob 4 in B mode (knob modulation 4 CC#21) (p.223)
(EXT) KnobM1 [+] (Knob Mod1: CC#17 [+])	realtime control knob 1 in B mode [+] (p.223)
(EXT) KnobM2 [+] (Knob Mod2: CC#19 [+])	realtime control knob 2 in B mode [+] (p.223)
(EXT) KnobM3 [+] (Knob Mod3: CC#20 [+])	realtime control knob 3 in B mode [+] (p.223)
(EXT) KnobM4 [+] (Knob Mod4: CC#21 [+])	realtime control knob 4 in B mode [+] (p.223)
(EXT) Damper#64 (Damper: CC#64)	damper pedal (CC#64)
(EXT) Prta.SW#65 (Portamento Switch: CC#65)	portamento switch (CC#65)
(EXT) Soste.#66 (Sostenuto: CC#66)	sostenuto pedal (CC#66)
(EXT) Soft #67 (Soft Pedal: CC#67)	soft pedal (CC#67)
(EXT) SW 1 #80 (SW1 Mod.: CC#80)	Assignable switch 1 (SW1 modulation CC#80) (p.223)
(EXT) SW 2 #81 (SW2 Mod.: CC#81)	Assignable switch 2 (SW2 modulation CC#81) (p.223)
(EXT) FootSW#82 (Foot Switch: CC#82)	assignable foot switch (CC#82) (p.223)
(EXT) MIDI CC#83	MIDI control change (CC#83)
(EXT) Tempo	tempo (tempo data from internal clock or external MIDI clock)

In the above table, the parentheses () indicate the type of source that can be used for each AMS. For example, the “AMS (Pitch AMS)” value for OSC1 Pitch (PROG 3.1–1a) can be [Off, (FEG, AEG, EXT)] (p.11). This means that you can select Off, and (FEG), (AEG), or (EXT) sources.

CC#: This is the control change number.

Flt KT +/- (Filter Keyboard Track +/-)

Flt KT +/- (Filter Keyboard Track +/-)

Flt KT 0/+ (Filter Keyboard Track 0/+)

Flt KT +/-0 (Filter Keyboard Track +/-0)

Amp KT +/- (Amp Keyboard Track +/-)

Amp KT +/- (Amp Keyboard Track +/-)

Amp KT 0/+ (Amp Keyboard Track 0/+)

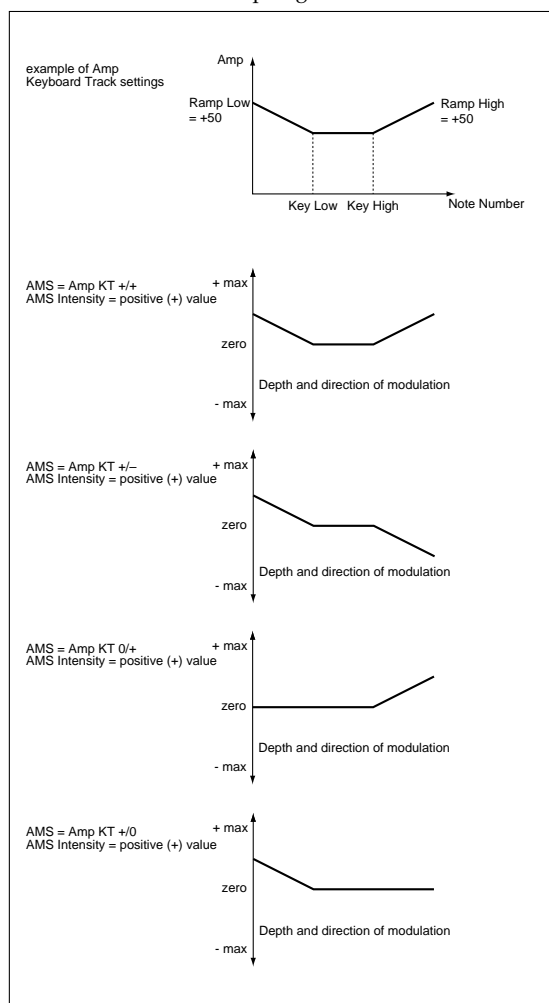
Amp KT +/-0 (Amp Keyboard Track +/-0)

+/-: The direction of the effect will be determined by the sign (positive or negative) of the "Ramp Low" or "Ramp High" setting.

+/-: The direction of the effect will be determined by the sign of the "Ramp Low" setting, and by the opposite sign of the "Ramp High" setting (-50 for a setting of +50, and +50 for a setting of -50).

0/+: "Ramp Low" will have no AMS effect. The sign of the "Ramp High" setting will determine the direction of its effect.

+0/0: The sign of the "Ramp Low" setting will determine the direction of its effect. "Ramp High" will have no AMS effect.



JS+Y&AT/2 (Joy Stick +Y & After Touch/2)

The effect will be controlled by the joystick +Y (vertically upward) and by after touch. In this case, the effect of after touch will be only half of the specified intensity.

JS-Y&AT/2 (Joy Stick-Y & After Touch/2)

The effect will be controlled by the joystick -Y (vertically downward) and by after touch. In this case, the effect of after touch will be only half of the specified intensity.

Pedal #04 (Foot Pedal: CC#04)

If you wish to use the assignable foot pedal as an AMS, set "Foot Pedal Assign" (GLOBAL 6.1-1a) to **Foot Pedal (CC#04)** (p.233 "Foot Pedal Assign").

A foot controller etc. connected to the ASSIGNABLE PEDAL jack will control the effect.

Slider #18 (Value Slider: CC#18)

When the "Program Select" or "Comb Select" edit cell is selected in Program mode or Combination mode, the [VALUE] slider will function as a controller corresponding to CC#18.

KnobM1#17 (Knob Mod1: CC#17)

KnobM2#19 (Knob Mod2: CC#19)

KnobM3#20 (Knob Mod3: CC#20)

KnobM4#21 (Knob Mod4: CC#21)

If you wish to use a REALTIME CONTROLS knob [1]-[4] as an AMS, make settings in Program, Combination, Song, or Song Play modes to set the Ctrl's tab parameter "Knobs B Assign" to the following settings respectively: "Knob1-B" to **Knob Mod.1 (CC#17)**, "Knob2-B" to **Knob Mod.2 (CC#19)**, "Knob3-B" to **Knob Mod.3 (CC#20)**, or "Knob4-B" to **Knob Mod.4 (CC#21)** (p.231 "Knob 1..4 B Assign").

When you set REALTIME CONTROLS to B mode and operate knobs [1]-[4], the specified modulation will apply.

If AMS intensity is set to a **positive (+)** value, moving the knob to the 12 o'clock position will produce an AMS effect of 0. Rotating the knob toward the right will produce a positive change in the effect, and rotating it toward the left will produce a negative change. (With **negative (-)** settings, the opposite effect will result.)

KnobM1 [+] (Knob Mod1: CC#17 [+])

KnobM2 [+] (Knob Mod2: CC#19 [+])

KnobM3 [+] (Knob Mod3: CC#20 [+])

KnobM4 [+] (Knob Mod4: CC#21 [+])

These differ from **KnobM1#17-KnobM4#21** in the knob position and direction of the effect. If AMS intensity is set to a **positive (+)** value, rotating the knob to the far left will produce an AMS effect of 0. Rotating the knob toward the right will apply an effect only in the positive direction. (With **negative (-)** settings, the opposite effect will result.)

SW 1 #80 (SW1 Mod.: CC#80)

SW 2 #81 (SW2 Mod.: CC#81)

If you wish to use the [SW1] or [SW2] key as an AMS, make settings in Program, Combination, Song, or Song Play modes to set the Ctrl's page parameter "SW1/2 Assign" to the following values respectively: "SW1" to **SW1 Mod.(CC#80)**, or "SW2" to **SW2 Mod.(CC#81)** (p.230 "SW1/2 Assign").

These are controlled by the [SW1] or [SW2] keys.

Foot SW #82 (Foot Switch: CC#82)

If you wish to use an assignable foot switch as an AMS, set "Foot SW Assign" (GLOBAL 6.1-1a) to **Foot SW (CC#82)** (p.232 "Foot Switch Assign").

The effect will be controlled when you operate a foot switch etc. connected to the ASSIGNABLE SWITCH jack.

Alternate Modulation settings

When you operate an AMS (Alternate Modulation Source), the modulation destination will be affected as shown in the table below.

By using alternate modulation, you can create complex systems of modulation in which EG, LFO, keyboard tracks, and controllers work together.

- You can apply complex change to an LFO or EG, for example by using the pitch/filter/amp EG to control the frequency or intensity of an LFO that modulates the pitch/filter/amp, or by using LFO2 to control the frequency of LFO1.
- The tone, EG, and LFO etc. can be controlled not only by velocity or joystick, but also from a switch, knob, or pedal etc.
- Panning can be controlled in realtime from a controller, EG, or LFO etc.
- The filter EG can also be used to control pitch or volume at the same time as it controls the filter.
- Controllers etc. can be used to control EG levels or times. This lets you shape the EG in realtime.
- Filter/amp keyboard tracking or note number can be used to control the EG or LFO according to the keyboard pitch that is played.
- Pitch, tone, EG or LFO can be controlled by the tempo of the KARMA function or sequencer.

Notes for the table

- *1 If **Note No.** is selected as an “AMS,” the base value will be **C4**.
- *2 EXT(+): Velocity, Poly After, AfterT, JS+Y #01, JS-Y #02, JS+Y&AT/2, JS-Y&AT/2, Pedal #04, Slider #18, KnobM1[+], KnobM2[+], KnobM3[+], KnobM4[+], Damper #64, Porta.SW #65, Soste. #66, Soft #67, SW 1 #80, SW 2 #81, MIDI CC#83
- *3 EXT(+): KnobM1 #17, KnobM2 #19, KnobM3 #20, KnobM4 #21
- *4 If **Tempo** is selected as an AMS, the base value will be $\downarrow=120$. For example if the AMS for “Pitch” is set to **Tempo**, and “AMS Intensity” is set to **12.00**, doubling the tempo value ($\downarrow=120 \rightarrow 240$) will raise the pitch one octave, and halving the tempo ($\downarrow=120 \rightarrow 60$) will lower the pitch one octave.
- *5 A dedicated parameter is also provided.
- *6 This will be added to the “Filter Frequency” value. As the “Filter Frequency” value increases by **10**, the cutoff frequency will double (rise one octave).
- *7 This will be added to the “Pan” setting.
- *8 It is possible to control LFO “Frequency” by using **Tempo** and “AMS Intensity.” However if you use the “Sync. (MIDI/Tempo Sync.)” function (PROG 5.3-1c), the LFO frequency can be synchronized to the tempo and note value.

The effect of alternate modulation on various parameters, and example applications

Pitch (PROG 3.1-1a)

Pitch can be controlled by the filter/amp EG, controllers, or tempo etc.

- If you select **Filter EG** or **Amp EG** as the “AMS (Pitch AMS)” and set “Intensity (AMS Intensity)” to **+12.00**, the pitch will change up to ± 1 octave in synchronization with the EG.
- If you select **Tempo** as the “AMS (Pitch AMS)” and set “Intensity (AMS Intensity)” to **+12.00**, doubling the tempo (based on $\downarrow=120$) will raise the pitch one octave, and halving the tempo will lower the pitch one octave.

Pitch EG Intensity (PROG 3.1-1b)

Pitch EG intensity can be controlled by keyboard tracking, controllers, or tempo.

- If you select **JS+Y#01** as the “AMS (Pitch EG AMS)” and set “Intensity (AMS Intensity)” to **+12.00**, moving the joystick on the connected MIDI instrument, such as this instrument, in the +Y direction will gradually increase the effect of the Pitch EG to a maximum of ± 1 octave. If “Intensity (AMS Intensity)” has a **negative value**, the effect of the Pitch EG will be inverted.

Pitch LFO1/2 Intensity (PROG 3.1-2a, 3.1-4)

Pitch modulation intensity of the LFO1/2 can be controlled by an EG, keyboard tracking, controllers, or tempo etc.

- If you select **EG** as the “AMS (LFO1/2 AMS),” the pitch change width of LFO modulation etc. can be controlled in synchronization with the level changes of the EG. With **positive (+)** settings of “Intensity (AMS Intensity),” the vibrato effect will gradually deepen as the EG level rises, or gradually lessen as the EG level decreases. With **negative (-)** settings of “Intensity (AMS Intensity),” the LFO phase will be inverted.
- If you select a controller such as **SW1** or **2** as the “AMS (LFO 1/2 AMS),” you can press the “SW1” or “SW2” button when desired to turn on the vibrato effect.

Filter (Cutoff) Frequency (PROG 4.1-3a, 4.1-3b)

The cutoff frequency of filter A/B can be controlled by the pitch/amp EG, controllers, or tempo. Set “AMS 1/2 (Filter A/B AMS1/2)” and “AMS 1/2 Intensity” for Filter A or B.

- If you select **JS X** or **Ribbon#16** as the “AMS1 (Filter A AMS1)” and set “Intensity (A AMS1 Intensity)” to a **positive (+)** value, moving the joystick or ribbon controller on the connected MIDI instrument, such as the TRITON, toward the right will raise the cutoff frequency, and moving it toward the left will lower the cutoff frequency. **Negative (-)** settings will have the opposite effect.

Parameter	AMS → AMS Value → AMS Intensity	PEG/FEG -99...0...+99	AEG 0...+99
Pitch	(+12.00)	-1...0...+1[Octave]	0...+1[Octave]
Pitch EG Int.	(+12.00)	-	-
Pitch LFO1/2 Int.	(+12.00)	-1...0...+1[Octave]	0...+1[Octave]
Filter Frequency *6	(+99)	-99...0...+99	0...+99
Resonance	(+99)	-99...0...+99	0...+99
Filter EG Int.	(+99)	-	-
Filter LFO1/2 Int.	(+99)	-99...0...+99	0...+99
Amp	(+99)	value x(0...1...8)	-
Amp LFO1/2 Int.	(+99)	-99...0...+99	0...+99
Pan *7	(+50)	-63...0...+63	0...+63
EG Level	(+66)	-	-
EG Time	(+49)	-	-
LFO Frequency	(+99)	value x(1/64...1...64)	value x(1...64)

- If you select the same controller as an AMS and set separate intensities for Filter A (Low Pass Filter) “Intensity (A AMS1/2 Intensity)” and Filter B (High Pass Filter) “Intensity (B AMS1/2 Intensity),” you can operate a single controller to simultaneously control the cutoff frequencies of both filters.

Resonance (PROG 4.1–1b)

This can be used when the “Type (Filter1/2 Type)” is **Low Pass Resonance**. The resonance level can be controlled by EG, LFO, keyboard tracking, controllers or tempo etc.

- If you select **Filter KT** or **Amp KT** as the “Reso.AMS (Resonance AMS),” you can use the filter or amp keyboard tracking settings to control the resonance level. For example if the amp keyboard tracking parameters “Low (KBDTrk Ramp Low)” and “High (KBDTrk Ramp High)” are set to **positive (+)** values, **Amp KT +/-** is selected as the “Reso.AMS (Resonance AMS),” and “Intensity (AMS Intensity)” it set to a **positive (+)** value, playing toward either end of the keyboard will cause amp keyboard tracking to increase the volume, and “Reso.AMS (Resonance AMS)” to raise the resonance level.
- You can select a controller as the “Reso.AMS (Resonance AMS),” and apply resonance when desired by operating the controller.
- You can select LFO1 or 2 as the “Reso.AMS (Resonance AMS),” and use the LFO to modulate the resonance level.

Filter EG Intensity (PROG 4.1–2b)

Filter EG intensity can be controlled by a controller or tempo etc. You can use “Int. to A (AMS Int. to A)” and “Int. to B (AMS Int. to B)” to independently specify the intensity for Filter A and B.

- If you select **JS–Y#02** as the “AMS (Filter EG AMS)” and set “Int. to A/B (AMS Int. to A/B)” to a **positive (+)** value, moving the joystick on the connected MIDI instrument, such as this instrument, in the –Y direction will gradually increase the effect of the Filter EG. If you set “Int. to A/B (AMS Int. to A/B)” to a **negative (–)** value, the effect of the Filter EG will be inverted.
- If you select **Ribbon#16** as the “AMS (Filter EG AMS)” and set “Int. to A/B (AMS Int. to A/B)” to a **positive (+)** value, operating the ribbon controller on the connected MIDI instrument, such as the TRITON, toward the right will gradually increase the effect of the Filter EG. Operating the ribbon controller on the connected MIDI instrument, such as this instrument, toward the left will gradually increase the effect of the Filter EG with an inverted phase.

Filter LFO 1/2 Intensity (PROG 4.1–4a)

The LFO 1/2 filter modulation intensity can be controlled by EG, keyboard tracking, controller, or tempo. You can use “Int. to A (LFO1/2 AMS Int. to A)” and “Int. to B (LFO1/2 AMS Int. to B)” to independently specify the intensity for Filter A and B.

- If you select **EG** as the “AMS (LFO1/2 AMS),” the auto-wah effect produced by LFO modulation will be controlled by the changes in EG level. If you set “Int. to A (LFO1/2 AMS Int. to A)” / “Int. to B (LFO1/2 AMS Int. to B)” to a **positive (+)** value, the wah effect will deepen as the EG level rises, and will lessen as the EG level falls. With **negative (–)** values of “Int. to A (LFO1/2 AMS Int. to A)” / “Int. to B (LFO1/2 AMS Int. to B),” the phase of the LFO will be inverted.
- If you use a controller such as **SW1** or **2** as the “AMS (LFO1/2 AMS),” you can apply the auto-wah effect when desired by pressing the [SW1] or [SW2] key.

Amp (PROG 5.1–2b)

The volume can be controlled by the pitch/filter EG, controllers, or tempo etc.

- If an EG or controller that changes with a **positive (+)** value (**Amp EG, EXT(+), EXT(SW)**) is selected as the “AMS (Amp AMS),” setting the “Int (AMS Intensity)” to **+99** will allow you to increase the volume to a maximum of eight times that of the current volume.
- If an EG, LFO, or controller that changes with a **± value (Pitch EG, Filter EG, LFO, KT, EXT(+–))** is selected as the “AMS (Amp AMS),” setting the “Int (AMS Intensity)” to **+99** will allow you to increase the volume to a maximum of eight times that of the current volume (for positive (+) changes of the AMS), or to decrease the volume to zero (for negative (–) changes of the AMS).
- In addition to the time-variant changes in volume produced by the amp EG, you can also make the volume change in synchronization with the pitch/filter EG. Select **PitchEG** or **FilterEG** as the “AMS (Amp AMS),” and adjust “Int (AMS Intensity).” If you wish to cancel the effect of the AmpEG and use the pitch/filter EG to control the volume, set all levels of the AmpEG to **+99**.

LFO1/2 –99...0...+99	KT(Fit KT, Amp KT) –99...0...+99	KT(Note No.) *1 ...36(C2)...60(C4)...84(C6) ...	JS X/Ribbon#16 –Max...0...+Max	EXT(+)*2 0...127	EXT(–)*3 –Max...0...+Max	EXT(Tempo) *4 (↓) = ...60...120...240...
dedicated parameter – –	–1...0...+1[Octave] –1...0...+1[Octave] –1...0...+1[Octave]	dedicated parameter ...–1...0...+1...[Octave] ...–1...0...+1...[Octave]	–1...0...+1[Octave] *5 –1...0...+1[Octave] –1...0...+1[Octave]	0...+1[Octave] 0...+1[Octave] 0...+1[Octave]	–1...0...+1[Octave] –1...0...+1[Octave] –1...0...+1[Octave]	...–1...0...+1...[Octave] ...–1...0...+1...[Octave] ...–1...0...+1...[Octave]
dedicated parameter –99x2...0...+99x2 – –	– –99...0...+99 – –99...0...+99	– ...–99...0...+99... – ...–99...0...+99...	–99...0...+99 –99...0...+99 –99...0...+99 –99...0...+99	0...+99 0...+99 0...+99 0...+99	–99...0...+99 –99...0...+99 –99...0...+99 –99...0...+99	...–99...0...+99... ...–99...0...+99... ...–99...0...+99... ...–99...0...+99...
dedicated parameter – –127...0...+127	– –99...0...+99 –63...0...+63	– ...–99...0...+99... ...–63...0...+63...	value x(0...1...8) –99...0...+99 –63...0...+63	value x(1...8) 0...+99 0...+63	value x(0...1...8) –99...0...+99 –63...0...+63	value x(0...1...8...) ...–99...0...+99... ...–63...0...+63...
– – value x(1/128...1...128)	–99...0...+99 value x(1/64...1...64) value x(1/64...1...64)	–99...0...+99 value x(...1/64...1...64...) value x(...1/64...1...64...)	–99...0...+99 value x(1/64...1...64) value x(1/64...1...64)	0...+99 value x(1...64) value x(1...64)	–99...0...+99 value x(1/64...1...64) value x(1/64...1...64)	–99...0...+99 value x(...1/64...1...64...) value x(...1/64...1...64...)*8

Amp LFO 1/2 Intensity (PROG 5.1–2b, 5.2)

The amp modulation intensity of LFO 1/2 can be controlled by EG, keyboard tracking, controllers, or tempo etc.

- If you select EG as the “AMS (LFO1/2 AMS),” the depth of the tremolo effect produced by LFO modulation will change in synchronization with the changes in EG level. If you set “Int. (AMS Intensity)” to a **positive (+)** value, the tremolo effect will deepen as the EG level rises, and lessen as the EG level falls. If “Int. (AMS Intensity)” is set to a **negative (-)** value, the phase of the LFO will be inverted.
- If select a controller such as SW1 or 2 as the “AMS (LFO1/2 AMS),” you can apply the tremolo effect by pressing the [SW1] or [SW2] key when desired.

Pan (PROG 5.1–1b)

The oscillator pan can be controlled by EG, LFO, keyboard tracking, controllers, or tempo etc.

- If you select **Note No.** as the “AMS (Pan AMS)” and set “Intensity” to **+50**, panning will be controlled by the keyboard position on the connected MIDI instrument, such as this instrument: center at the C4 note, far right at C6 or above, and far left at C2 or below.
- If EG is selected as the “AMS (Pan AMS),” the oscillator pan will be controlled in synchronization with the changes in EG level. If “Intensity” is set to a **positive (+)** value, the pan will move toward the right as the EG level increases, and toward the left as the EG level decreases. If “Intensity” is set to a **negative (-)** value, the opposite effect will occur.

- EG Level – Pitch EG (PROG 3.1–5b)**
- Filter EG (PROG 4.1–5b)**
- Amp EG (PROG 5.1–3b)**

EG levels can be controlled by keyboard tracking, controllers, or tempo etc.

Set the “I (AMS Intensity)” value, and select **+/-/0** for each EG segment (“S” start, “A” attack, “B” break) to specify the direction of the effect (if any) on that segment.

+: AMS will function according to the Intensity setting.

-: The sign of the Intensity setting will be inverted.

0: AMS will have no effect.

If “I (AMS Intensity)” is set to **+66**, the various EG levels can be controlled over a maximum range of **±99**.

- Set “AMS” to **Velocity** for Amp EG Level Modulation, “I (AMS Intensity)” to **+66**, “S” to **0**, “A” to **+**, and “B” to **-**. Set all Amp EG levels to **+00**. As you play with increasing velocity, the EG levels will change more greatly. At the maximum velocity, the Start Level will stay at **+00**, but the Attack Level will change to **+99** and the Break Level will change to **-99**.

- EG Time – Pitch EG (PROG 3.1–5c)**
- Filter EG (PROG 4.1–5c)**
- Amp EG (PROG 5.1–3c)**

EG times can be controlled by keyboard tracking, controllers, or tempo etc. Set the “I (AMS Intensity)” value, and select **+/-/0** for each EG segment (“A” attack, “D” decay, “S” slope, “R” release) to specify the direction of the effect (if any) on that segment.

+: AMS will function according to the Intensity setting.

-: The sign of the Intensity setting will be inverted.

0: AMS will have no effect.

Each EG time is determined by the Alternate Modulation value at the moment that the corresponding EG point is reached. For example, the Alternate Modulation value at the moment that the Attack Level is reached will determine the Decay Time.

If “I (AMS Intensity)” is set to a value of **8, 17, 25, 33, 41, or 49**, the corresponding time can be multiplied by a maximum of **2, 4, 8, 16, 32, or 64** times (or divided by **1/2, 1/4, 1/8, 1/16, 1/32, 1/64**).

- Select **JS+Y#01** for “AMS,” and set “I (AMS Intensity)” to **+8**, “A” to **+**, “D” to **-**, and “S” and “R” to **0**. When you move the joystick in the **+Y** direction, the Attack Time will be lengthened by a maximum of **2** times. The Decay Time will be shortened by a maximum of **1/2**. The Slope and Release times will not change.

LFO Frequency (PROG 5.3–1b)

The frequency of LFO 1 or 2 can be controlled by EG, keyboard tracking, controllers, or tempo etc., You can even use the LFO2 frequency to modulate the LFO1 frequency.

If “Int (AMS 1/2 Intensity)” is set to a value of **16, 33, 49, 66, 82, or 99**, the corresponding frequency can be multiplied by a maximum of **2, 4, 8, 16, 32, or 64** times (or divided by **1/2, 1/4, 1/8, 1/16, 1/32, 1/64**).

- Select **JS+Y#01** for “AMS1/2 (Freq. AMS1/2),” and set “Int (AMS1/2 Intensity)” to **+16**. When you move the joystick on the connected MIDI instrument, such as this instrument, in the **+Y** direction, the LFO frequency will be increased by a maximum of **2** times. If you set “Int (AMS1/2 Intensity)” to **-16** and move the joystick in the **+Y** direction, the LFO frequency will be decreased by up to **1/2**.

Dynamic Modulation Source (Dmod)

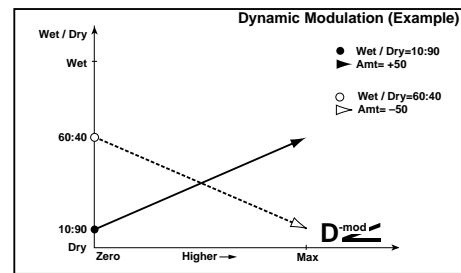
You can control certain effect parameters using the joystick, REAL TIME CONTROLS knobs, etc. “on the fly.” Controlling effects in this way is referred to as **Dynamic Modulation**. For example, you can use After Touch to speed up the LFO of the chorus and flanger, or you can use the joystick to activate the wah effect. In this way, you will be able to take full advantage of the effects as part of the expressive potential of your instrument.

Most of the parameters for dynamic modulation consist of parameter values for “(Source)” and “(Amount).” The “(Source)” field selects the modulation source, and “(Amount)” sets the amount of dynamic modulation effect. When the modulation source is set to the maximum value, the actual degree of the effect will be the parameter value plus the “(Amount)” value.

Example: “W/D (Wet/Dry)” 10:90, “(Source)” AfterT, “(Amount)” +50

In this case, the effect balance is 10:90. As you apply After Touch, the percentage of the effect sound will increase.

When After Touch is at its maximum, the effect balance will be 60:40.



! The dynamic modulation effect will not be affected if you modify the “(Amount)” value while dynamic modulation is being applied. The change will become effective when you operate the dynamic modulation source again.

Refer to the corresponding effect section for an explanation of other dynamic modulation parameters.

In the table of parameters for each effect, dynamic modulation parameters are marked by a **D^{mod}** symbol at the right of the parameter.

Dynamic Modulation Source List

Source name	Explanation
Off	dynamic modulation is not used
Gate1	note on/off (p.228)
G1+Dmp (Gate1+Damper)	note on + damper on/off (p.228)
Gate2	note on/off (retrigger) (p.228)
G2+Dmp (Gate2+Damper)	note on + damper on/off (retrigger) (p.228)
Note No. (Note Number)	note number
Vel (Velocity)	Velocity
AfterT (After Touch)	after touch (Channel After Touch)
JS X (Joy Stick X)	joystick X (horizontal) direction
JS+Y#1 (Joy Stick +Y: CC#01)	joystick +Y (away) direction (CC#01)
JS-Y#2 (Joy Stick -Y: CC#02)	joystick -Y (toward yourself) direction (CC#02)
Pd#4 (Foot Pedal: CC#04)	assignable foot pedal (CC#04) (p.228)
FX1#12 (FX Control1: CC#12)	MIDI effect control 1(CC#12)
FX2#13 (FX Control2: CC#13)	MIDI effect control 2(CC#13)
Rbn#16 (Ribbon: CC#16)	MIDI CC#16: controller (ribbon controller*)
Sld#18 (Value Slider: CC#18)	value slider (CC#18)
Kb1#17 (Knob Mod1: CC#17)	realtime control knob 1 in B mode (knob modulation 1 CC#17) (p.228)
Kb2#19 (Knob Mod2: CC#19)	realtime control knob 2 in B mode (knob modulation 2 CC#19) (p.228)
Kb3#20 (Knob Mod3: CC#20)	realtime control knob 3 in B mode (knob modulation 3 CC#20) (p.228)
Kb4#21 (Knob Mod4: CC#21)	realtime control knob 4 in B mode (knob modulation 4 CC#21) (p.228)
Kb1[+] (Knob Mod1: CC#17 [+])	realtime control knob 1 in B mode [+]
Kb2[+] (Knob Mod2: CC#19 [+])	realtime control knob 2 in B mode [+]
Kb3[+] (Knob Mod3: CC#20 [+])	realtime control knob 3 in B mode [+]
Kb4[+] (Knob Mod4: CC#21 [+])	realtime control knob 4 in B mode [+]
Dmp#64 (Damper: CC#64)	damper pedal (CC#64)
Prt#65 (Portamento Switch: CC#65)	portamento switch (CC#65)
Sos#66 (Sosutenuto: CC#66)	sostenuto pedal (CC#66)
SW1#80 (SW1 Mod.: CC#80)	assignable panel switch 1 (SW1 modulation CC#80) (p.228)
SW2#81 (SW2 Mod.: CC#81)	assignable panel switch 2 (SW2 modulation CC#81) (p.228)
FSW#82 (Foot Switch: CC#82)	assignable foot switch (CC#82)
CC#83	MIDI Control Change (CC#83)
Tempo	tempo (internal clock or external MIDI clock tempo data) (p.228)

CC#: This is the control change number.

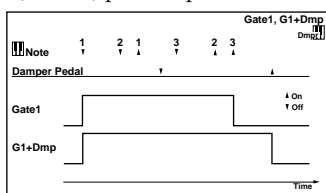
*: This indicates a controller or a function assigned to a controller on the TRITON/TRITONpro/TRITONproX. The controller and the type of MIDI messages it transmits will depend on the type of connected MIDI instrument.

MIDI In Program mode, dynamic modulation of the insertion effects and master effects is controlled via the global MIDI Channel.

In Combination, Sequencer and Song Play modes, dynamic modulation for the insertion effects and master effects is controlled on the MIDI channel independently specified by the “Control Channel” for IFX1–5, MFX1, and MFX2.

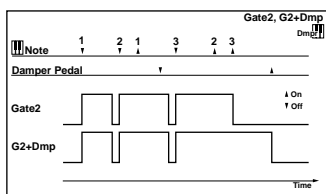
Gate1, G1+Dmp (Gate1+Damper)

The effect is at maximum during note-on, and will stop when all keys are released. With **G1+Dmp**, the effect will remain at maximum even after the keys are released, as long as the damper (sustain) pedal is pressed.



Gate2, G2+Dmp (Gate2+Damper)

This is essentially the same as for Gate 1 or G1+Dmp. However when **Gate 2** or **G2+Dmp** are used as a dynamic modulation source for the EG of 022: St.Env.Flanger etc. or the AUTOFADE of 027: St.Vibrato, a trigger will occur at each note-on. (In the case of Gate 1 and G1+Dmp, the trigger occurs only for the first note-on.)



Pdl#4 (Foot Pedal: CC#04)

If you wish to use the assignable foot pedal as a dynamic modulation source, set “Foot Pedal Assign” (GLOBAL 6.1–1a) to **Foot Pedal (CC#04)**. (p.233 “Foot Pedal Assign”) A foot controller etc. connected to the ASSIGNABLE PEDAL jack can be used to control an effect.

Sld#18 (Value Slider: CC#18)

When the 1.1:Play “Program Select” or “Combi Select” edit cell is selected in Program mode or Combination mode, the [VALUE] slider will function as a controller corresponding to CC#18.

Kb1#17 (Knob Mod1: CC#17)

Kb2#19 (Knob Mod2: CC#19)

Kb3#20 (Knob Mod3: CC#20)

Kb4#21 (Knob Mod4: CC#21)

If you wish to use a REALTIME CONTROLS knob [1]–[4] as a dynamic modulation source, make settings in Program, Combination, Song, or Song Play modes to set the 2.2: Ed–Ctrl/Controller page parameter “Knob B Assign” to the following settings respectively: “Knob1–B” to **Knob Mod.1 (CC#17)**, “Knob2–B” to **Knob Mod.2 (CC#19)**, “Knob3–B” to **Knob Mod.3 (CC#20)**, or “Knob4–B” to **Knob Mod.4 (CC#21)**. (p.231 “Knob 1..4 B Assign”)

When you set REALTIME CONTROLS to B mode and operate knobs [1]–[4], the effect will be controlled.

Moving the knob to the 12 o’clock position will produce an effect of 0 as the dynamic modulation source. If “(Amount)” is a **positive (+)** value, rotating the knob toward the right will produce a positive change in the effect, and rotating it toward the left will produce a negative change. (With **negative (–)** values, the opposite effect will result.)

Kb1[+] (Knob Mod1: CC#17 [+])

Kb2[+] (Knob Mod2: CC#19 [+])

Kb3[+] (Knob Mod3: CC#20 [+])

Kb4[+] (Knob Mod4: CC#21 [+])

These differ from Kb1#17 (Knob Mod1: CC#17)–Kb4#21 (Knob Mod4: CC#21) in the knob position and direction of the effect. If “(Amount)” is set to a **positive (+)** value, rotating the knob to the far right will produce an effect of 0 as the dynamic modulation source. Rotating the knob toward the right will apply an effect only in the positive direction. (With **negative (–)** settings, the opposite effect will result.)

SW1#80 (SW1 Mod.: CC#80)

SW2#81 (SW2 Mod.: CC#81)

If you wish to use the [SW1] or [SW2] key as a dynamic modulation source, make settings in Program, Song, or Song Play modes to set the Controller tab parameter “SW Assign” to the following values respectively: “SW1” to **SW1 Mod. (CC#80)**, or “SW2” to **SW2 Mod. (CC#81)** (p.230 “SW1/2 Assign”).

The effect will be controlled when you operate the [SW1] or [SW2] key.

FSW#82 (Foot Switch: CC#82)

If you wish to use an assignable foot switch as a dynamic modulation source, set “Foot SW Assign” (GLOBAL 6.1–1a) to **Foot SW (CC#82)** (p.232 “Foot Switch Assign”).


The effect will be controlled when you operate a foot switch etc. connected to the ASSIGNABLE SWITCH jack.

Tempo

Modulation sources other than **Tempo** are internally processed as a value of 0–127 (–128 – +127). In contrast, **Tempo** uses the tempo data (BPM value) of the internal clock or the external MIDI clock. This means that when “♪” is 127 (BPM), it will have the same result as the maximum value (+127) of other modulation sources.


About the BPM/MIDI SYNC function

BPM/MIDI SYNC can be used for most effects that have an LFO, such as **009: St.Wah/AutoW(Stereo Wah/Auto Wah)**, and for some delay-type effects such as **049: LCR BPM Delay**. You can apply modulation that is synchronized to the tempo, or specify the delay time in terms of a note value so that the effect will synchronize to the tempo of the KARMA function, or external sequencer during a live performance even if you change the tempo.

Parameters that allow BPM/MIDI SYNC to be used are marked by a  symbol at their right in the list of parameters for each effect.

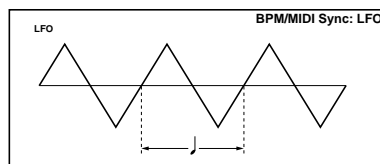
Example 1. LFO

“BPM/MIDI Sync”  On

“Base (Base Note)” 


“Times” **1**

In this case, each cycle of the LFO will be as long as one quarter note.




If you set “BPM” to **MIDI**, the LFO will synchronize to the tempo of the KARMA function or sequencer (or to the external MIDI clock). If “BPM” is in the range of **40–240**, the specified value will be used.

Example 2. Delay Time

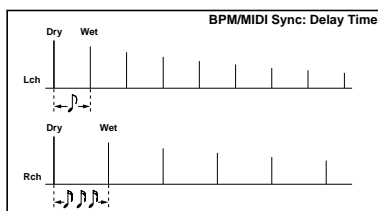
“L Bs (Base Note)” 

“Times” **1**

“R Bs (Base Note)” 

“Times” **3**

In this case, the delay time of the left channel will be the duration of an eighth note, and the delay time of the right channel will be the duration of a sixteenth note triplet.



When “BPM” is set to **MIDI**, the effect will synchronize to the tempo of the KARMA function or sequencer (or to an external MIDI clock). If “BPM” is in the range of **40–240**, the specified value will be used.

If the tempo, “Bs (Base Note),” and “Times” settings in conjunction would cause the maximum delay time to be exceeded, a warning such as “TimeOver? >OVER!” will appear in the display. Please modify your settings so that this setting does not appear. (The maximum delay time will depend on the effect type.)

SW1/2 Assign

The following functions can be assigned to the [SW1] or [SW2] keys.

- For a Program, Combination, Song, or Song Play mode make the settings in 2.2: Ed-Ctrl/Controller page “SW1/2 Assign” (2.2–1b).

SW1, SW2 Assign List

Off	no function
SW1 Mod.(CC#80) (SW1 Modulation:CC#80) SW2 Mod.(CC#81) (SW2 Modulation:CC#81)	Select this when using the switch as an Alternate Modulation or Effect Dynamic Modulation source. In this case, you must first specify the control destination. Each time the switch is turned On/Off, a CC#80 (or CC#81) message will be transmitted (Off: 0, On: 127). (p.230)
Porta.SW(CC#65) (Portamento Switch:CC#65)	When you press SW1 (or SW2) to turn it on (LED lit), portamento will be applied. Each time this is turned On/Off, CC#65 will be transmitted (Off: 0, On: 127). (p.230)
Octave Down	Each time you press SW1 (or SW2), the pitch will alternate between 1 octave lower and the original octave setting (1 octave down when the LED is lit).
Octave Up	Each time you press SW1 (or SW2), the pitch will alternate between 1 octave higher and the original octave setting (1 octave up when the LED is lit).
JS X Lock	Lock the effect of the joystick X direction. (p.230)
JS+Y Lock	Lock the effect of the joystick +Y direction. (p.230)
JS-Y Lock	Lock the effect of the joystick -Y direction. (p.230)
Ribbon Lock :N/A	— (p.230)
JS X&Rbn Lock :N/A	— (p.230)
JS+Y&Rbn Lock :N/A	— (p.230)
JS-Y&Rbn Lock :N/A	— (p.230)
AfterT Lock	Lock the effect of after touch. (p.230)

SW1 Mod.(CC#80) (SW1 Modulation:CC#80)

SW2 Mod.(CC#81) (SW2 Modulation:CC#81)

This effect differs between SW1 and SW2. SW1 is handled as CC#80, and SW2 is handled as CC#81.

Porta.SW(CC#65) (Portamento Switch:CC#65)

When “Mode (Oscillator Mode)” (PROG 2.1–1a) is **Single**, turning the switch on (LED lit) will apply portamento regardless of the “Enable (Porta. Enable)” (PROG 3.1–1c) setting, and turning the switch off (LED off) will not apply portamento.

If “Mode (Oscillator Mode)” is **Double**, and if the “Enable (Porta. Enable)” setting is the same for OSC1 and 2 (i.e., **Enable** or **Disable** for both OSC1 and 2), then portamento will be applied to OSC1 and 2 when the switch is turned on (LED lit), and portamento will not be applied to OSC1 and 2 when the switch is turned off (LED off).

If the “Enable (Porta. Enable)” setting is different for OSC1 and 2 (i.e., OSC1 is **Enable** and OSC2 is **Disable**, or OSC1 is **Disable** and OSC2 is **Enable**), then portamento will be applied to the OSC whose setting is **Enable** when the switch is turned on (LED lit), and portamento will be applied to neither OSC when the switch is turned off (LED off).

JS X Lock, JS+Y Lock, JS-Y Lock, AfterT Lock

The state of the selected controller (joystick, after touch) will alternate between Lock and Unlock (Lock when the LED is lit).

While the joystick or after touch is being operated, turning Lock on will lock (fix) the effect at the current position of that controller.

For example if you select **JS+Y Lock**, move the joystick away from yourself, and then turn Lock on, the operation produced by the joystick (+Y) will be locked (held) at that position. Even if you return the joystick to its original position, the modulation will continue to apply. At this time you can even move the joystick in the -Y direction to apply both types of modulation (joystick +Y and -Y) simultaneously.

MIDI When you Lock the joystick or after touch, MIDI transmission of the corresponding controller will be halted, but reception will still occur.

Ribbon Lock: N/A, JS X&Rbn Lock : N/A, JS+Y&Rbn Lock: N/A, JS-Y&Rbn Lock: N/A

These values can be specified, but will have no actual effect. N/A indicates Not Available (i.e., invalid).

Data compatibility is maintained between this instrument and the TRITON/TRITONpro/TRITONproX (TRITON keyboard models). Programs created on this instrument can be used on TRITON keyboard models, and the opposite is also true.

In order to maintain compatibility, it is possible to specify these “invalid” parameters on this instrument.


Knob 1...4 B Assign

The following functions can be assigned to the REALTIME CONTROLS [1]-[4] knobs in B mode.

- For Program, Combination, Song, or Song Play mode, make these settings in 2.2: Ed-Ctrl/Controller page “Knob B Assign” (2.2–1a).

Realtime Control Knobs B Assign List

Off	No function
Knob Mod. 1 (CC#17)	General purpose controller. Alternate Modulation or Effect Dynamic Modulation can be controlled. To use this, select KnobM1#17 for “AMS,” or Kb1#17 for “Dmod Src.” Simultaneously, CC#17 will be transmitted.
Knob Mod. 2 (CC#19)	General purpose controller. Alternate Modulation or Effect Dynamic Modulation can be controlled. To use this, select KnobM2#19 for “AMS,” or Kb2#19 for “Dmod Src.” Simultaneously, CC#19 will be transmitted.
Knob Mod. 3 (CC#20)	General purpose controller. Alternate Modulation or Effect Dynamic Modulation can be controlled. To use this, select KnobM3#20 for “AMS,” or Kb3#20 for “Dmod Src.” Simultaneously, CC#20 will be transmitted.
Knob Mod. 4 (CC#21)	General purpose controller. Alternate Modulation or Effect Dynamic Modulation can be controlled. To use this, select KnobM4#21 for “AMS,” or Kb4#21 for “Dmod Src.” Simultaneously, CC#21 will be transmitted.
Master Volume	Control the volume. Simultaneously, the universal system exclusive message Master Volume [F0H, 7FH, nn, 04, 01, vv, mm, F7H] will be transmitted to adjust the volume of all tracks or timbres (while preserving the volume balance between tracks or timbres).
Porta. Time (CC#05)	Control the portamento time. Simultaneously, CC#5 will be transmitted.
Volume (CC#07)	Control the volume. Simultaneously, CC#7 will be transmitted.
IFX Pan (CC#08)	Control the panning after the insertion effect. Simultaneously, CC#8 will be transmitted.
Pan (CC#10)	Control the oscillator panning. Simultaneously, CC#10 will be transmitted.
Expression (CC#11)	Control the expression. Simultaneously, CC#11 will be transmitted.
FX Ctrl 1 (CC#12)	Control Effect Dynamic Modulation. When controlling this, set “Dmod Src” to FX1#12 . Simultaneously, CC#12 will be transmitted.
FX Ctrl 2 (CC#13)	Control Effect Dynamic Modulation. When controlling this, set “Dmod Src” to FX2#13 . Simultaneously, CC#13 will be transmitted.
Filt Cutoff (CC#74)	Control the cutoff frequency of the Filter (low pass filter). Simultaneously, CC#74 will be transmitted.
Filt Reso. (CC#71)	Control the resonance of the Filter, or the cutoff frequency of the high pass filter. If the program’s “Type (Filter/2 Type)” is Low Pass Resonance , the resonance level will be controlled. If it is Low Pass & High Pass , the cutoff frequency of the high pass filter will be controlled. Simultaneously, CC#71 will be transmitted.
Filt EG Int. (CC#79)	Control the EG intensity of the Filter. Simultaneously, CC#79 will be transmitted.
F/A Attack (CC#73)	Control the EG attack of the Filter and Amplifier. Simultaneously, CC#73 will be transmitted.
F/A Decay (CC#75)	Control the EG decay time and slope time of the Filter and Amplifier. Simultaneously, CC#75 will be transmitted.
F/A Sus. (CC#70)	Control the EG sustain level of the Filter and Amplifier. Simultaneously, CC#70 will be transmitted.
F/A Rel. (CC#72)	Control the EG release time of the Filter and Amplifier. Simultaneously, CC#72 will be transmitted.
P LFO1 Spd (CC#76)	Control the frequency of LFO1. Simultaneously, CC#76 will be transmitted.
P LFO1 Dep (CC#77)	Control the LFO1 intensity of the pitch. Simultaneously, CC#77 will be transmitted.
P LFO1 Dly (CC#78)	Control the delay of LFO1. Simultaneously, CC#78 will be transmitted.
SW 1 Mod. (CC#80)	General-purpose controller. Alternate Modulation or Effect Dynamic Modulation can be controlled. To control these, set “AMS” or “Dmod Src” to SW 1 #80 . Simultaneously, CC#80 will be transmitted.
SW 2 Mod. (CC#81)	General-purpose controller. Alternate Modulation or Effect Dynamic Modulation can be controlled. To control these, set “AMS” or “Dmod Src” to SW 2 #81 . Simultaneously, CC#81 will be transmitted.
Foot SW (CC#82)	General-purpose controller. Alternate Modulation or Effect Dynamic Modulation can be controlled. To use this, select FootSW#82 for “AMS,” or FSW#82 for “Dmod Src.” Simultaneously, CC#82 will be transmitted.
MIDI CC#83 (CC#83)	General-purpose controller. Alternate Modulation or Effect Dynamic Modulation can be controlled. To use this, select MIDI CC#83 for “AMS,” or CC#83 for “Dmod Src.” Simultaneously, CC#83 will be transmitted.
MFX Send 1 (CC#93)	Control the send level to Master Effect1. Simultaneously, CC#93 will be transmitted.
MFX Send 2 (CC#91)	Control the send level to Master Effect2. Simultaneously, CC#91 will be transmitted.
MIDI CC#00...CC#95	The specified MIDI control change (CC#) will be transmitted. If this instrument is set so as to be controlled by the control change message, the corresponding control will occur.

 The A mode functions of the REALTIME CONTROLS are fixed.

Knob1-A: LPF Cutoff (Filter LPF Cutoff: CC#74)

Control the low pass filter cutoff frequency of the filter. Simultaneously, CC#74 will be transmitted.

Knob2-A: Resonance/HPF

(Filter Resonance/HPF Cutoff: CC#71)

Control the resonance level or the cutoff frequency of the high pass filter. If the program “Filter Type” is **Low Pass Resonance**, the resonance level will be controlled. If “Filter Type” is **Low Pass & High Pass**, the cutoff frequency of the high pass filter will be controlled. Simultaneously, CC#71 will be transmitted.

Knob3-A: EG-Intensity (Filter EG Intensity: CC#79)

Control the filter EG intensity. Simultaneously, CC#79 will be transmitted.


Knob4-A: EG-Release (Filter, Amplifier EG Release: CC#72)

Control the release time of the filter and amplifier EG. Simultaneously, CC#72 will be transmitted.

Foot Switch Assign

You can assign the function of an assignable switch (separately sold Korg PS-1 option) connected to the ASSIGNABLE SWITCH jack.

- This setting is made in GLOBAL 6.1: Controller “Foot SW Assign” (6.1–1a).

 If you select a function that includes a CC#, that MIDI control change message will be transmitted each time the switch is turned on/off. (Off: 0, On: 127)

Foot Switch Assign List

Off	The connected foot switch will not function.
Foot SW (CC#82)	Alternate Modulation or Effect Dynamic Modulation can be controlled. To control these, select Foot SW:#82 for “AMS” or FSW#82 for “Dmod Src.”
Portamento SW (CC#65)	Control portamento on/off.
Sostenuto (CC#66)	Control the sostenuto effect (which holds only the keys (Note No.) that were being held at the moment that the pedal switch was turned on).
Soft (CC#67)	Turn the soft pedal effect on/off.
KARMA On/Off	Control the KARMA function on/off.
KARMA Latch On/Off	Control KARMA Latch.
Program Up	The switch can be used to select programs or combinations. When in PROG 1.1: Play, the program that follows the currently selected program will be selected. When in COMBI 1.1: Play, the combination that follows the currently selected combination will be selected. Simultaneously, a Bank Select message and Program Change message will be transmitted.
Program Down	The switch can be used to select programs or combinations. When in PROG 1.1: Play, the program that precedes the currently selected program will be selected. When in COMBI 1.1: Play, the combination that precedes the currently selected combination will be selected. Simultaneously, a Bank Select message and Program Change message will be transmitted.
Song Start/Stop	The switch can be used to start/stop the sequencer. Simultaneously, a MIDI Start or Stop message will be transmitted.
Song Punch In/Out	If “REC Setup”(SEQ 1.1–6a) is set to Manual Punch In , the switch can be used to punch-in and punch-out when recording on the sequencer.
Cue Repeat Control	This can be used if in SEQ 2.1: Cue List, the “Rep (Cue Edit-Repeat)” (2.1–1b) setting of each step has been set to FS . Turning the pedal switch on while that step is repeating will be the trigger for advancing to the next step. When the end of the song is reached, this will advance to the next step (song).

Portamento SW (CC#65)

When the “Mode (Oscillator Mode)” (PROG 2.1–1a) is **Single**, turning the switch on will apply portamento regardless of the “Enable (Porta. Enable)” (PROG 3.1–1c) setting, and turning the switch off will not apply portamento.

If “Mode (Oscillator Mode)” is **Double**, and if the “Enable (Porta. Enable)” setting is the same for OSC1 and 2 (i.e., **Enable** or **Disable** for both OSC1 and 2), then portamento will be applied to OSC1 and 2 when the switch is turned on, and portamento will not be applied to OSC1 and 2 when the switch is turned off.

If the “Enable (Porta. Enable)” setting is different for OSC1 and 2 (i.e., OSC1 is **Enable** and OSC2 is **Disable**, or OSC1 is **Disable** and OSC2 is **Enable**), then portamento will be applied to the OSC whose setting is **Enable** when the switch is turned on, and portamento will be applied to neither OSC when the switch is turned off.

Foot Pedal Assign

You can assign the function that will be controlled by an assignable pedal (separately sold Korg XVP-10 or EXP-2 option) connected to the ASSIGNABLE PEDAL jack.

- This setting is made in GLOBAL 6.1: Controller “Foot Pedal Assign” (6.1–1a).

MIDI If you select a function that includes a CC#, that MIDI control change message will be transmitted each time the pedal is operated. (min: 0, max: 127)

Foot Pedal Assign List

Off	The connected pedal will not function.
Master Volume	Control the volume. Simultaneously, the universal exclusive message Master Volume [F0H, 7FH, nn, 04, 01, vv, mm, F7H] will be transmitted to control the volume of all timbres or tracks (while preserving the volume balance between timbres or tracks).
Foot Pedal (CC#04)	Alternate Modulation or Effect Dynamic Modulation can be controlled. To control these, set “AMS” to Pedal #04 or “Dmod Src” to pdi#04 .
Portamento Time (CC#05)	Control the speed at which portamento will change the pitch.
Volume (CC#07)	Control the volume of a Program, of a timbre in a Combination, or of a track in Sequencer/Song Play modes.
Post IFX Pan (CC#08)	Control the pan after passing through the insertion effect.
Pan (CC#10)	Control the pan of a Program, of a timbre in a Combination, or of a track in Sequencer/Song Play modes.
Expression (CC#11)	Control the volume of a Program, of a timbre in a Combination, or of a track in Sequencer/Song Play modes. Expression is multiplied with the Volume value to determine the actual volume level.
FX Control 1 (CC#12)	Control Effect Dynamic Modulation. To control this, set Dmod Src to FX1#12 .
FX Control 2 (CC#13)	Control Effect Dynamic Modulation. To control this, set Dmod Src to FX2#13 .
MFX Send 1 (CC#93)	Control the send level to master effect 1 (MFX1) from a Program, a timbre in a Combination, or a track in Sequencer/Song Play modes. Simultaneously, this will also control the send level to master effect 1 (MFX1) from after the insertion effect of the matching MIDI channel.
MFX Send 2 (CC#91)	Control the send level to master effect 2 (MFX2) from a Program, a timbre in a Combination, or a track in Sequencer/Song Play modes. Simultaneously, this will also control the send level to master effect 2 (MFX2) from after the insertion effect of the matching MIDI channel.

Dynamic MIDI Sources & Destinations

Dynamic MIDI Sources

The sources (Dynamic MIDI Sources) are organized into the following groups

JS +Y #01...JS X: Controller group
Short Note...Black Note: Note group
Velocity...Vel Out Z: Velocity Group

Depending on the combination of source and destination (Dynamic MIDI Destinations), the selected destination may not function as you intend. Refer to the explanations of combining sources and destinations in each section of “Dynamic MIDI Destinations,” and make sure to select sources and destinations that are appropriate for each other.

For **JS+Y #01...JS X**, you can specify the range of control values in “Range-Btm/Top” (6.4–3a/b/c/d). Control values within this range will be the source.

Off

No source will be selected.

JS+Y #01

The +Y direction (away from yourself) of the joystick (CC#01) will be the source.

For **JS+Y #01...JS X**, you can specify the range of control values in “Range-Btm/Top” (6.4–3a/b/c/d). Control values within this range will be the source.

JS-Y #02

The -Y direction (toward yourself) of the joystick (CC#02) will be the source.

Pedal #04

The assignable foot pedal (CC#04) will be the source.

The function of the assignable pedal connected to the ASSIGNABLE PEDAL jack must be assigned as **Foot Pedal (CC#04)** for the GLOBAL 6.1: Controller Foot page “Foot Pedal Assign” parameter.

Damper #64

The damper pedal will be the source.

Prta.SW #65

The portamento switch (CC#65) will be the source.

FootSW #82

The assignable foot switch (CC#82) will be the source.

The function of the assignable foot switch connected to the ASSIGNABLE SWITCH jack must be assigned as **Foot Switch (CC#82)** for the GLOBAL 6.1: Controller Foot page “Foot SW Assign” parameter.

MIDI CC#83

MIDI control change CC#83 will be the source.

Ribbon #16

MIDI control change CC#16. The ribbon controller of a connected TRITON etc. will be the source.

K.Knob 1...8

The corresponding KARMA Realtime Controls knob [1]–[8] will be the source.

MIDI If a MIDI control change is assigned in the GLOBAL 6.1: Controller KARMA1 page, this will be controlled by reception of the assigned MIDI control change.

K.SW1/K.SW2

The KARMA Realtime Controls switch [1] or [2] will be the source.

MIDI If a MIDI control change is assigned in the GLOBAL 6.1: Controller KARMA1 page, this will be controlled by reception of the assigned MIDI control change.

KARM OnOff

The KARMA Realtime Controls [ON/OFF] key will be the source.

MIDI If a MIDI control change is assigned in the GLOBAL 6.1: Controller KARMA1 page, this will be controlled by reception of the assigned MIDI control change.

AfterT

Aftertouch (channel aftertouch) will be the source.

JS X

The X (horizontal) direction of the joystick will be the source.

For **JS X**, “Pol” (6.4–3a/bc/d) allows you to select +/- or -/+ in addition to the usual + or - operations.

When the controller is moved all the way to the left or right, the value will change as follows. The example shown below is for when **Tempo** is selected as the destination. (Original tempo is $\text{♩}=100 \text{ BPM}$, “Range-Btm/Top”: 000/127)

+ : Far left (+/-0) → far right (maximum)
100 BPM → 200 BPM
- : Far left (+/-0) → far right (maximum negative)
100 BPM → 50 BPM
+/- : Far left (maximum negative) → center (+/-0) → far right (maximum)
50 BPM → 100 BPM → 200 BPM
-/+ : Far left (maximum) → center (+/-0) → far right (maximum negative)
200 BPM → 100 BPM → 50 BPM

Short Note

Use “Range-Btm/Top” (6.4–3a/b/c/d) to specify the range of note numbers. Only notes within the specified range with a duration of less than 45 ms between note-on and note-off will be the source.

000: C-1...012: C0...024: C1...036: C2...
045: C3...060: C4...072: C5...084: C6...
096: C7...108: C8...120: C9...127: G9

Note

Use “Range-Btm/Top” (6.4–3a/b/c/d) to specify the range of note numbers. Notes within the specified range will be the source. (Short Note)

Note In Z (Note In Zone)

Notes within the key zone of the KARMA module (PROG 6.1–2a, COMBI/SEQ/S.PLAY 6.1–3a) will be the source. Use “Input” to specify the applicable KARMA module.

Note Out Z (Note Out Zone)

Notes outside the key zone of the KARMA module (PROG 6.1–2a, COMBI/SEQ/S.PLAY 6.1–3a) will be the source. Use “Input” to specify the applicable KARMA module.

White Note

Use “Range-Btm/Top” (6.4–3a/b/c/d) to specify the range of note numbers. Only the white notes (C, D, E, F, G, A, B) within the specified range will be the source.

Black Note

Use “Range-Btm/Top” (6.4–3a/b/c/d) to specify the range of note numbers. Only the black notes (C#, D#, F#, G#, A#) within the specified range will be the source.

Velocity

Velocity values will be the source. Use “Range-Btm/Top” (6.4–3a/b/c/d) to specify the velocity range.

Vel In Z (Velocity In Zone)

Velocity values of notes within the key zone of the KARMA module (PROG 6.1–2a, COMBI/SEQ/S.PLAY 6.1–3a) will be the source.

Use “Range-Btm/Top” (6.4–3a/b/c/d) to specify the velocity range. Use “Input” to specify the applicable KARMA module.

Vel Out Z (Velocity Out Zone)

Velocity values of notes outside the key zone of the KARMA module (PROG 6.1–2a, COMBI/SEQ/S.PLAY 6.1–3a) will be the source.

Use “Range-Btm/Top” (6.4–3a/b/c/d) to specify the velocity range. Use “Input” to specify the applicable KARMA module.

Dynamic MIDI Destinations

Depending on the combination of source and destination, the selected destination may not function as you intend. Refer to the explanations of combining sources and destinations in each of the following sections, and make sure to select sources and destinations that are appropriate for each other.

The [M, T, C] indication shown at the right of each destination name indicate the source operating modes (“Act-Action”) that are valid for each destination function. (ⓘp.36 PROG 6.4–3a/b/c/d: “Act” (Dyn1...4 Src Action))

Off

No function

RTParm Ctrl (RT Params Control Assign) [M, T, C]

Use this when using a source to control GE Parameter 1...16 (6.3–1/2/3/4) or RT Parm1...8 (6.4–1/2). Set the “Asgn” of GE Parameter1...16 or RT Parm1...8 to Dyn1...Dyn4. (ⓘp.33 6.3–1a: “Asgn” Dyn1, ...Dyn4)

note You should normally select a source from the JS+Y #01...JS X controller group.

! This will operate irrespective of the module. The Combination, Sequencer, and Song Play mode “A/B/C/D (Param Module A/B/C/D)” (6.4–3a/b/c/d) settings will be ignored.

Setting examples

Joystick operations in the +Y direction will control GE Parameter1. (Program mode)

“Dyn1 Source”:	JS+Y #01	(6.4–3a/b/c/d)
“Dyn1 Range-Btm/Top”:	000/127	(6.4–3a/b/c/d)
“Dyn1 Act (Src Action)”:	C	(6.4–3a/b/c/d)
“Dyn1 Destination”:	RTParm Ctrl	(6.4–3a/b/c/d)
“Dyn1 Pol (Polarity)”:	+	(6.4–3a/b/c/d)
GE Parameter1 “Asgn”:	Dyn1	(6.4–3a/b/c/d)

Tempo

[M, T, C]

Control the KARMA tempo.

note You will normally select the JS+Y #01...JS X controller group as the source.

! This will operate irrespective of the module. The Combination, Sequencer, and Song Play mode “A/B/C/D (Param Module A/B/C/D)” (6.4–3a/b/c/d) settings will be ignored.

- When “Pol” is +, you can use the controller to speed up the tempo.
When the value of the controller selected as the source is at the value specified for “Range-Btm,” the tempo will be as specified by the respective mode.
When the value of the controller selected as the source is at the value specified for “Range-Top,” the tempo will be double the tempo specified by the respective mode. (The tempo will not be faster than the maximum tempo of ♩=300 BPM.)
- When “Pol (Polarity)” is –, you can use the controller to slow down the tempo.
When the value of the controller selected as the source is at the value specified for “Range-Btm,” the tempo will be as specified by the respective mode.
When the value of the controller selected as the source is at the value specified for “Range-Top,” the tempo will be half the tempo specified by the respective mode. (The tempo will not be slower than the minimum tempo of ♩=35 BPM.)

Latch

[M, T]

Control “Note Latch” of the KARMA module. When you select **Latch** as the “Destination” and turn “A/B/C/D (Param Module A/B/C/D)” (6.4-3a/b/c/d) **On (checked)**, you will be able to use the damper pedal etc. to control note latch independently of the “Note Latch” (6.2-2a) setting of each KARMA module.

note You will normally select the **JS+Y #01...JS X** controller group as the source.

note If you turn **latch on** using this setting, the operation of Envelope 1, 2, and 3 will also be affected. Regardless of the “Env1 Latch/Env2 Latch/Env3 Latch” (6.2-2a) settings for each KARMA module, you can use a damper pedal etc. to turn **latch on** so that the currently-operating Envelope1, 2, or 3 will continue to be held even after you release the keyboard or the [CHORD TRIGGER] key.

Examples of use

Setting 1 (Program mode)

“Note Latch”:	On (normally leave this On for a program)	(6.2-2a)
“Dyn1 Source”:	Damper#64	(6.4-3a/b/c/d)
“Dyn1 Range-Btm/Top”:	000/127	(6.4-3a/b/c/d)
“Dyn1 Act (Src Action)”:	M	(6.4-3a/b/c/d)
“Dyn1 Destination”:	Latch	(6.4-3a/b/c/d)
“Dyn1 Pol (Polarity)”:	+	(6.4-3a/b/c/d)

When the KARMA Realtime Controls [LATCH] key is **on**, latch will always be **on**.

When the KARMA Realtime Controls [LATCH] key is **off**, pressing the connected damper pedal will turn **latch on**, and releasing it will turn **latch off**.

Setting 2 (Combination mode)

[A] “Note Latch”:	On	(6.2-2a)
[B] “Note Latch”:	Off	(6.2-2a)
“Dyn1 Source”:	Damper#64	(6.4-3a/b/c/d)
“Dyn1 Range-Btm/Top”:	000/127	(6.4-3a/b/c/d)
“Dyn1 Act (Src Action)”:	M	(6.4-3a/b/c/d)
“Dyn1 Destination”:	Latch	(6.4-3a/b/c/d)
“Dyn1 ModuleA”:	On (checked)	(6.4-3a/b/c/d)
“Dyn1 ModuleB”:	Off (checked)	(6.4-3a/b/c/d)
“Dyn1 Pol (Polarity)”:	+	(6.4-3a/b/c/d)

When the KARMA Realtime Controls [LATCH] key is **on**, latch will be **on** for KARMA module [A], and latch will be **off** for KARMA module [B].

When the KARMA Realtime Controls [LATCH] key is **off**, pressing the connected damper pedal will turn **latch on** for both modules [A] and [B], and releasing the pedal will turn **latch off** for both modules [A] and [B].

AutoTX SW (Auto Transpose Switch)

[M]

Controls on/off of the auto transpose function.

note You will normally select the **JS+Y #01...JS X** controller group as the source.

AutoTX Rng (Auto Transpose Range)

[C]

Controls the amount of transposition for the auto transpose function.

When “**AutoTX SW**” is **on**, playing chord data for each KARMA module within the keyboard range specified as the AutoTX Rng source will automatically transpose the current chord, rather than enter a new chord.

note Select the source from the **Short Note...Black Note** note group.

The “Pol (Polarity)” (6.4-3a/b/c/d) setting will be ignored.

If you select a source from the **JS+Y #1...JSX** controller group or the **Velocity...Vel Out Z** velocity group, it will not be possible to control the transpose amount of the auto transpose function.

Examples of use

Settings (Program mode)

“Dyn1 Source”:	K.SW1	(6.4-3a/b/c/d)
“Dyn1 Range-Btm/Top”:	000/127	(6.4-3a/b/c/d)
“Dyn1 Act (Src Action)”:	M	(6.4-3a/b/c/d)
“Dyn1 Destination”:	AutoTX SW	(6.4-3a/b/c/d)
“Dyn1 Pol (Polarity)”:	+	(6.4-3a/b/c/d)
“Dyn2 Source”:	Note	(6.4-3a/b/c/d)
“Dyn2 Range-Btm/Top”:	000/060 (000=C-1, 060=C4)	(6.4-3a/b/c/d)
“Dyn2 Act (Src Action)”:	C	(6.4-3a/b/c/d)
“Dyn2 Destination”:	AutoTX Rng	(6.4-3a/b/c/d)
“Dyn2 Pol (Polarity)”:	+	(6.4-3a/b/c/d)

- ① Turn **on** the KARMA function, and play the keyboard. Play a **Cmaj7** chord. The KARMA function will generate a phrase according to the selected GE and the settings of the KARMA module.
- ② Turn **on** KARMA Realtime Controls switch [1]. The auto transpose function will be turned **on**. The **Cmaj7** chord will be remembered.
- ③ When you play a note number in the range specified by “Range-Btm/Top” (6.4-3a/b/c/d), the **Cmaj7** chord will be transposed with that note as the root. If you play **D3**, the KARMA function will generate a phrase based on **Dmaj7**. If you play **E3**, the phrase will be based on **Emaj7**.
- ④ Turn **off** KARMA Realtime Controls switch [1]. The auto transpose function will be turned **off**, and the KARMA function will resume normal operation.

Module Stop

[M]

Controls KARMA module stop.

Operating the selected source controller when the KARMA function is operating will stop the KARMA module. (The KARMA function will remain on.) When you apply a trigger (for example by playing the keyboard), the module will resume functioning.

Mdl Pause (Module Pause)

[M, T]

Controls KARMA module pause.

Operating the selected source controller when the KARMA function is operating will pause the KARMA module.

When the KARMA module parameter “Run Check Box” (COMBI/SEQ/S.PLAY 6.1–1b) is turned **Off (unchecked)**, the KARMA module will continue operating internally without pausing. This means that when “Run Check Box” is turned **On (checked)**, the phrase or pattern will not resume from where the phrase or pattern had stopped, but rather the phrase or pattern will continue playing from the moment at which the setting was turned On. In contrast, Dynamic MIDI Mdl Pause makes the phrase or pattern resume playing from where it was stopped.

Example

Move the joystick in the +Y direction to pause and then resume the phrase produced by the currently-operating KARMA module.

Settings (Program mode)

“Dyn1 Source”	JS+Y #01	(6.4–3a/b/c/d)
“Dyn1 Range-Btm/Top”:	000/127	(6.4–3a/b/c/d)
“Dyn1 Act (Src Action)”:	M	(6.4–3a/b/c/d)
“Dyn1 Destination”:	Mdl Pause	(6.4–3a/b/c/d)
“Dyn1 Pol (Polarity)”:	+	(6.4–3a/b/c/d)

When you move the joystick all the way in the +Y direction, the phrase will pause. When you return the joystick to the center, the phrase will resume playing.

Repeat Stop (Melodic Repeat Stop)

[M]

Control “Melodic Repeat” for the notes generated by the KARMA module. This is valid only when the GE selected by the KARMA module uses the “Melodic Repeat” function.

Example

Some GEs (but not all of them) utilize “Melodic Repeat” to generate additional repeated notes from the notes that are generated. The repeated notes created by “Melodic Repeat” will normally continue playing their specified number of repeats even when you turn off the KARMA [ON/Off] key. If you want the repeated notes to stop immediately when you turn the KARMA function off, use the KARMA [ON/OFF] key to control Repeat Stop.

Settings (Program mode)

“Dyn1 Source”	KARM OnOff	(6.4–3a/b/c/d)
“Dyn1 Range-Btm/Top”:	000/127	(6.4–3a/b/c/d)
“Dyn1 Act (Src Action)”:	M	(6.4–3a/b/c/d)
“Dyn1 Destination”:	Repeat Stop	(6.4–3a/b/c/d)
“Dyn1 Pol (Polarity)”:	–	(6.4–3a/b/c/d)

Chord Scan


[C]


Control the chord analysis that controls the phrase or pattern generated by the KARMA module.

Normally, each KARMA module detects chords by notes that are input in the key zone (PROG 6.1–2, COMBI/SEQ/S.PLAY 6.1–3) specified for each module. Instead of this key zone, you can control chord detection using the note range specified by the “Range-Btm/Top” (6.4–3a/b/c/d) of the source.

Chord analysis affects the operation of the following GE parameters. (GE Guide)

- “Note Series: Chord Shift”
- “Note Series: Note Type Scalic or Note Type Scalic 2”
- “Note Series: Filter Notes”
- “Repeat: Chord Shift”
- “Drum: NTT (Note Table Transposition) On/Off”

 For KARMA modules affected by the **Chord Scan** specified here, the key zone note input specified for each module will not be used for chord detection on that module.

 Select the **Note**, **Note In Z**, or **Note Out Z** note group as the source.

The “Pol (Polarity)” (6.4–3a/b/c/d) setting will be ignored.

Chord analysis cannot be controlled if you select a source from the **JS+Y #01...JS X** controller group, a note group other than the above, or the Velocity...Vel Out Z velocity group.

Example

Select a GE of GE type **Realtime** (VNL), and use the keyboard to input the chord that will control the phrase or note being played by Melodic Repeat.

Settings (Program mode)

“Dyn1 Source”	Note Out Z	(6.4–3a/b/c/d)
“Dyn1 Act (Src Action)”:	C	(6.4–3a/b/c/d)
“Dyn1 Destination”:	Chord Scan	(6.4–3a/b/c/d)
“KeyZone Botton/Top”:	C4/G9	(6.1–2a)

Play the high range of the keyboard above **C4** (specified as the key zone) to trigger phrases and notes produced by the KARMA function. At this time, play the lower range of the keyboard to control the chord of the phrase or notes in realtime. (Playing the lower range of the keyboard will not produce sound, but will only control the chord.) This allows you to play the lower range of the keyboard to vary the chord while “Melodic Repeat” is producing an extended phrase, letting you control the development of the phrase.


Smart Scan

[C]

As with Chord Scan, this controls the chord analysis that controls the phrase or pattern generated by the KARMA module.

Normally, each KARMA module will detect chords from notes that are input in the key zone specified for each module (PROG 6.1–2a, COMBI/SEQ/S.PLAY 6.1–3a). Instead of this key zone, you can use notes in the range specified by the source “Range-Btm/Top” (6.4–3a/b/c/d) to control chord detection.

Note input by key zone or chord detection by **Chord Scan** requires **one or more notes**, while **Smart Scan** requires **three or more notes** to be input in a given area. In general when you perform using both hands, the chord will change when you play three or more notes in either hand. For example if you press **C4** for key zone note input or **Chord Scan**, the chord will be detected as **C maj**. In contrast, **Smart Scan** will not detect a chord when you press **C4**, but will (for example) detect **C Maj** when you simultaneously press **C4/E4/G4**. In addition, Smart Scan takes into consideration the keyboard location and number of notes that are played, allowing more sophisticated and intuitive control of the timing of chord detection and the bass note handling.

 Note input in the key zone specified for each module will not be used for normal chord detection on KARMA modules for which **Smart Scan** is operating. If Smart Scan and Chord Scan are specified simultaneously, the Chord Scan note range will also be handled as the Smart Scan note range.

note Select a source from the **Note**, **Note In Z**, or **Note Out Z** note group.
 The “Pol (Polarity)” (6.4–3a/b/c/d) settings will be ignored.
 Chord analysis can not be controlled if you select the source from the **JS+Y #01...JS X** controller group, a note group other than listed above, or the **Velocity...Vel Out Z** velocity group.

Example

Play a chord in either the left hand or right hand to control the phrase or pattern generated by the KARMA module. In this example, we will use the right hand to play a solo phrase, and the left hand to play a bass riff etc. in realtime without changing the chord.

Settings (Program mode)

“Dyn1 Source” **Note** (6.4–3a/b/c/d)
 “Dyn1 Range-Btm/Top”: **000/127** (6.4–3a/b/c/d)
 “Dyn1 Act (Src Action)”: **C** (6.4–3a/b/c/d)
 “Dyn1 Destination”: **Smart Scan** (6.4–3a/b/c/d)

Using your left hand, play three or more notes to control the chord. If you wish to use your right hand to play a solo part in the high keyboard range, the chord will not change as long as you keep a certain distance from the left hand and play only two notes or less.

In the same way, use your right hand to play three or more notes in the upper range of the keyboard to control the chord. You can use your left hand to play a bass line in the lower range of the keyboard without changing the chord.

Chord detection will not occur while the KARMA module is receiving damper on. When you press the damper pedal, chord detection will be locked, and notes you add while the damper is on will not change the chord.

Clock Adv. (Clock Advance) [M, T, C]

This lets you use a controller such as the joystick or note-on/off operations to trigger the clock by which the KARMA function operates, thus using **Manual Advance** to advance the phrase or pattern.

Set the “Clock Advance Mode” (6.2–2b) of the KARMA module being controlled to **Dyn**, **Auto+Dyn1**, or **Auto+Dyn2**.

note If you select the source from the **Short Note...Black Note** note group or **Velocity...Vel Out Z** velocity group, set “Act (Dyn1...4 Src Action)” (6.4–3a/b/c/d) to **C**.
 (ⓘp.36)

Examples

Setting 1 (Program mode)

Control by joystick operations.

“Dyn1 Source” **JS+Y #01** (6.4–3a/b/c/d)
 “Dyn1 Range-Btm/Top”: **000/127** (6.4–3a/b/c/d)
 “Dyn1 Act (Src Action)”: **M** (6.4–3a/b/c/d)
 “Dyn1 Destination”: **Clock Adv.** (6.4–3a/b/c/d)
 “Dyn1 Pol (Polarity)”: **+** (6.4–3a/b/c/d)
 “Mode (Clk Adv. Mode)”: **Dyn** (6.2–2b)

Setting 2 (Program mode)

Use note-on/off played in the upper range of the keyboard to advance the phrase generated by playing chords in the lower range of the keyboard (specified by the key zone).

“Dyn1 Source” **Note Out Z** (6.4–3a/b/c/d)
 “Dyn1 Act (Src Action)”: **C** (6.4–3a/b/c/d)
 “Dyn1 Destination”: **Clock Adv.** (6.4–3a/b/c/d)
 “Dyn1 Pol (Polarity)”: **+** (6.4–3a/b/c/d)
 “Mode (Clk Adv. Mode)”: **Dyn** (6.2–2b)
 “KeyZone Bottom/Top”: **C-1/B3** (6.2–2a)
 “Thru In Zone”: **Off (unchecked)** (6.2–2a)
 “Thru Out Zone”: **Off (unchecked)** (6.2–2a)

Trig Nt&Env (Trigger Notes & Envelopes) [M, T, C]
Trig Notes (Trigger Notes) [M, T, C]
Trig Env1 (Trigger Envelope 1) [M, T, C]
Trig Env2 (Trigger Envelope 2) [M, T, C]
Trig Env3 (Trigger Envelope 3) [M, T, C]

Control triggering of GE phrases and/or envelope 1/2/3 of the KARMA module. With **Trig Nt&Env**, GE phrases and envelopes 1/2/3 will all be triggered. Other settings allow these to be triggered individually.

note If you are using a GE that does not use envelopes, the envelope-related settings made here will be ignored.
 (ⓘVNL)

Direct Index [C]

Direct index is a function that uses controllers or note-off to specify the GE phrase directly.

note Normally you will select a source from the **JS+Y #01...JS X** controller group or the **Short Note...Black Note** note group.

The GE uses note data from the keyboard to internally create a “Note Series” from which phrases and patterns are generated according to a variety of internal parameter settings. You can use a controller to “sweep” the Note Series directly, or directly index any note in it with the note-on/off operation assigned here.

DI & MdlStop (Direct Index and Module Stop) [C]

Simultaneously with controlling **Direct Index** (described above), this also controls the Module Stop function. The currently-running KARMA module will stop.

note Normally you should select a source from the **JS+Y #01...JS X** controller group or the **Short Note...Black Note** note group.

Use this when you wish to stop the phrase or pattern played by the KARMA module and simultaneously switch to realtime note generation by **Direct Index**.

BufferLatch

Control latching of the note data that is input to the KARMA module (i.e., so that the note data will be held even when you take your hand away from the keyboard, and will continue playing).

note Normally you should select a source from the **JS+Y #01...JS X** controller group.

Normally, playing a single C4 note will input C4 to the KARMA module, controlling the phrase or pattern. If you release the C4 and then play a single B4 note, B4 will be input to the KARMA module. In this case if you turned **Buffer Latch on** when you played the single C4 note, the KARMA module will maintain the C4 even when you release the keyboard, so that when you play a single B4 note, the B4 will be added. C4 and B4 will be input to the KARMA module, controlling the phrase or pattern.

Example

Settings (Program mode)

"Dyn1 Source"	Damper#64	(6.4-3a/b/c/d)
"Dyn1 Range-Btm/Top":	000/127	(6.4-3a/b/c/d)
"Dyn1 Act (Src Action)":	M	(6.4-3a/b/c/d)
"Dyn1 Destination":	BufferLatch	(6.4-3a/b/c/d)
"Dyn1 Pol (Polarity)":	+	(6.4-3a/b/c/d)
Rx Filter "Damper":	Off (unchecked)	(6.1-3a)

- ① With the KARMA function **on**, play the keyboard. Hold down the damper pedal, and play C4. The chord will be detected as **Cmaj**, and a phrase based on **Cmaj** will be played.
- ② While continuing to hold down the damper pedal, play **B4**. The chord will be detected as **Cmaj7**. If you were not using **Buffer Latch**, the chord would be detected as **Bmaj**.
- ③ Notes will be added until you release the damper pedal and play the keyboard. Since Rx Filter "Damper" is turned **Off (unchecked)** in this example, the damper pedal will not produce the conventional damper effect when the KARMA function is **on**.

Use this when you want to add notes in this way to modify the phrase or pattern.

MIDI transmission when this instrument's controllers are operated

The following table shows the relation between the MIDI messages that are transmitted when this instrument's controllers are operated, and the AMS (alternate modulation source) or DMS (dynamic modulation source) that correspond to each MIDI message. # indicates a fixed function, and * indicates an assignable function.

When one of this instrument's controllers is operated, the corresponding or the assigned control change will be transmitted. Pitch Bend messages will be transmitted only when the joystick is moved in the X (horizontal) direction. The operation in each mode is described below. (Explanations are given only for control changes, but the same applies to pitch bend as well.)

Program mode

When one of this instrument's controllers is operated, a control change message will be transmitted on the global MIDI channel.

- ▶ If a REALTIME CONTROLS B mode knob [1]–[4] is set to **Master Volume**, the universal exclusive message Master Volume will be transmitted.

Combination mode

When one of this instrument's controllers is operated, a control change message will be transmitted on the global MIDI channel.

Simultaneously, the message will also be transmitted on the MIDI channel ("MIDI Channel" COMBI 3.1-1a) of any timbre whose "Status" (COMBI 3.1-1a) is **EXT** or **EX2**.

When one of this instrument's controllers is operated, its effect will apply to any timbre whose "Status" is **INT** and whose "MIDI Channel" setting is either **Gch** or the same as the global MIDI channel.

- ▶ In the case of **Master Volume**, the universal exclusive message Master Volume will be transmitted only on the global MIDI channel.
- ▶ You can make settings for MIDI Filter (COMBI 4.1-4.4) to **enable** or **disable** control changes and controllers for each timbre. When **checked**, the above operations will be enabled.

Effect dynamic modulation can be controlled when the "Control Ch (Control Channel)" (COMBI 7.2-1b, 7.3-1a, 7.3-1d) setting for IFX1-5, MFX1, 2, or MEQ is either set to **Gch** or to the same channel as the global MIDI channel. (In the case of **All Rt.**, control is possible on the MIDI channel of any routed timbre.)

KARMA modules [A][B][C][D] can be controlled when the "Input Channel" and "Output Channel" (COMBI 6.1-2a) specified for each module are **Gch** or match the global MIDI channel.

Sequencer mode

When one of this instrument's controllers is operated, its effect will apply to the track 1-16 that is selected by "Track Select" (SEQ 1.1-1c).

If the "Status" (SEQ 3.1-1a/2a) of the track selected by "Track Select" is **EXT**, **EX2**, or **BTH**, a control change message will be transmitted on the MIDI channel specified by "MIDI Channel" (SEQ 3.1-1a/2a).

If the "Status" is **INT** or **BTH**, operating one of this instrument's controllers will affect only that track. Simultaneously, the same effect will also apply to any track with the same "MIDI Channel" setting.

- ▶ In the case of **Master Volume**, the universal exclusive message Master Volume will be transmitted.
- ▶ You can make settings for MIDI Filter (SEQ 4.1-4.4) to **enable** or **disable** control changes and controllers for each track. When **checked**, the operations effective for a "Status" of **INT** or **BTH** will be enabled. Tracks whose "Status" is **EXT**, **EX2**, or **BTH** will transmit control changes regardless of this setting.

Effect dynamic modulation can be controlled when the "Control Ch (Control Channel)" (SEQ 7.2-1b, 7.3-1a, 7.3-1d) setting for IFX1-5, MFX1, 2, or MEQ matches the MIDI channel of the track selected by "Track Select." (In the case of **All Rt.**, control is possible on the MIDI channel of all routed tracks.)

If one of this instrument's controllers is operated during realtime recording, the corresponding or assigned control change will be recorded.

KARMA modules [A][B][C][D] can be controlled when the "Input Channel" and "Output Channel" (SEQ 6.1-2a) specified for each module are **Gch** or match the MIDI channel of the track selected by "Track Select."

Song Play mode

When one of this instrument's controllers is operated, the effect will apply to the track 1-16 that is selected by "Play (Track Select)" (S.PLAY 1.1-1a).

If the "Status" (S.PLAY 3.1-1a/2a) of the track selected by "Play (Track Select)" is either **EXT** or **BTH**, control change messages will be transmitted on the MIDI channel of the track (or in the case of Song Play mode, on MIDI channels 1-16 for tracks 1-16).

If the "Status" is **INT** or **BTH**, operating one of this instrument's controllers will affect that track.

- ▶ In the case of **Master Volume**, the universal exclusive message Master Volume will be transmitted.

Effect dynamic modulation can be controlled when the "Control Ch (Control Channel)" (S.PLAY 7.2-1b, 7.3-1a, 7.3-1d) setting for IFX1-5, MFX1, 2, or MEQ matches the MIDI channel of the track selected by "Play (Track Select)." (In the case of **All Rt.**, control is possible on the MIDI channel of all routed tracks.)

KARMA modules [A][B][C][D] can be controlled when the "Input Channel" and "Output Channel" (SEQ 6.1-2a) specified for each module are **Tch** or match the MIDI channel of the track selected by "Track Select."

- * **Global MIDI channel:**
GLOBAL 2.1: MIDI "MIDI Channel" (2.1-1a)

	This instrument's controller														Available for AMS	Available for DMOD	
	Joy Stick	Value Slider	Realtime Controls		SW1,2	KARMA Realtime Controls				Chord Trigger 1...4	Dampner	Assign-able Switch	Assign-able Pedal				
			A	B		ON/OFF	Knob 1...8	SCENE	LATCH					SW1, 2			
MIDI channel messages																	
CC#																	
0																	
1		# (+Y)		*		*	*	*	*	*	*	*	*	*	*	*	*
2		# (-Y)		*		*	*	*	*	*	*	*	*	*	*	*	*
3				*		*	*	*	*	*	*	*	*	*	*	*	*
4				*		*	*	*	*	*	*	*	*	*	*	*	*
5				*		*	*	*	*	*	*	*	*	*	*	*	*
6				*		*	*	*	*	*	*	*	*	*	*	*	*
7				*		*	*	*	*	*	*	*	*	*	*	*	*
8				*		*	*	*	*	*	*	*	*	*	*	*	*
9				*		*	*	*	*	*	*	*	*	*	*	*	*
10				*		*	*	*	*	*	*	*	*	*	*	*	*
11				*		*	*	*	*	*	*	*	*	*	*	*	*
12				*		*	*	*	*	*	*	*	*	*	*	*	*
13				*		*	*	*	*	*	*	*	*	*	*	*	*
14				*		*	*	*	*	*	*	*	*	*	*	*	*
15				*		*	*	*	*	*	*	*	*	*	*	*	*
16				*		*	*	*	*	*	*	*	*	*	*	*	*
17				*		*	*	*	*	*	*	*	*	*	*	*	*
18		#		*		*	*	*	*	*	*	*	*	*	*	*	*
19				*		*	*	*	*	*	*	*	*	*	*	*	*
20				*		*	*	*	*	*	*	*	*	*	*	*	*
21				*		*	*	*	*	*	*	*	*	*	*	*	*
22				*		*	*	*	*	*	*	*	*	*	*	*	*
23				*		*	*	*	*	*	*	*	*	*	*	*	*
24				*		*	*	*	*	*	*	*	*	*	*	*	*
25				*		*	*	*	*	*	*	*	*	*	*	*	*
26				*		*	*	*	*	*	*	*	*	*	*	*	*
27				*		*	*	*	*	*	*	*	*	*	*	*	*
28				*		*	*	*	*	*	*	*	*	*	*	*	*
29				*		*	*	*	*	*	*	*	*	*	*	*	*
30				*		*	*	*	*	*	*	*	*	*	*	*	*
31				*		*	*	*	*	*	*	*	*	*	*	*	*
32				*		*	*	*	*	*	*	*	*	*	*	*	*
33...37				*		*	*	*	*	*	*	*	*	*	*	*	*
38				*		*	*	*	*	*	*	*	*	*	*	*	*
39...63				*		*	*	*	*	*	*	*	*	*	*	*	*
64				*		*	*	*	*	*	*	*	*	*	*	*	*
65				*		*	*	*	*	*	*	*	*	*	*	*	*
66				*		*	*	*	*	*	*	*	*	*	*	*	*
67				*		*	*	*	*	*	*	*	*	*	*	*	*
68...69				*		*	*	*	*	*	*	*	*	*	*	*	*
70				*		*	*	*	*	*	*	*	*	*	*	*	*
71			# (Knob2)	*		*	*	*	*	*	*	*	*	*	*	*	*
72			# (Knob4)	*		*	*	*	*	*	*	*	*	*	*	*	*
73			# (Knob4)	*		*	*	*	*	*	*	*	*	*	*	*	*
74			# (Knob1)	*		*	*	*	*	*	*	*	*	*	*	*	*
75				*		*	*	*	*	*	*	*	*	*	*	*	*
76				*		*	*	*	*	*	*	*	*	*	*	*	*
77				*		*	*	*	*	*	*	*	*	*	*	*	*
78				*		*	*	*	*	*	*	*	*	*	*	*	*
79			# (Knob3)	*		*	*	*	*	*	*	*	*	*	*	*	*
80				*		*	*	*	*	*	*	*	*	*	*	*	*
81				*		*	*	*	*	*	*	*	*	*	*	*	*
82				*		*	*	*	*	*	*	*	*	*	*	*	*
83				*		*	*	*	*	*	*	*	*	*	*	*	*
84				*		*	*	*	*	*	*	*	*	*	*	*	*
85				*		*	*	*	*	*	*	*	*	*	*	*	*
86				*		*	*	*	*	*	*	*	*	*	*	*	*
87				*		*	*	*	*	*	*	*	*	*	*	*	*
88				*		*	*	*	*	*	*	*	*	*	*	*	*
89				*		*	*	*	*	*	*	*	*	*	*	*	*
90				*		*	*	*	*	*	*	*	*	*	*	*	*
91				*		*	*	*	*	*	*	*	*	*	*	*	*
92				*		*	*	*	*	*	*	*	*	*	*	*	*
93				*		*	*	*	*	*	*	*	*	*	*	*	*
94				*		*	*	*	*	*	*	*	*	*	*	*	*
95				*		*	*	*	*	*	*	*	*	*	*	*	*
96				*		*	*	*	*	*	*	*	*	*	*	*	*
97				*		*	*	*	*	*	*	*	*	*	*	*	*
98...99				*		*	*	*	*	*	*	*	*	*	*	*	*
100				*		*	*	*	*	*	*	*	*	*	*	*	*
0: Bend range				*		*	*	*	*	*	*	*	*	*	*	*	*
1: Fine tune				*		*	*	*	*	*	*	*	*	*	*	*	*
2: Coarse tune				*		*	*	*	*	*	*	*	*	*	*	*	*
101				*		*	*	*	*	*	*	*	*	*	*	*	*
102...127				*		*	*	*	*	*	*	*	*	*	*	*	*
Program change				*		*	*	*	*	*	*	*	*	*	*	*	*
Channel after touch				*		*	*	*	*	*	*	*	*	*	*	*	*
Bender change		# (X)		*		*	*	*	*	*	*	*	*	*	*	*	*
Universal exclusive																	
				*		*	*	*	*	*	*	*	*	*	*	*	*
				*		*	*	*	*	*	*	*	*	*	*	*	*
				*		*	*	*	*	*	*	*	*	*	*	*	*
				*		*	*	*	*	*	*	*	*	*	*	*	*

Setting
* Assignable

Note1 This is when the built-in controllers, the KARMA Realtime Controls ON/OFF, and LATCH are assigned to the CC#'s indicated by [].

[*] These can be assigned to CC#00-95 for KARMA Realtime Controls or Chord Triggers. The CC# indicated by [*] are automatically assigned when you execute the Global mode 6.1-2(3): KARMA 1(2) page utility menu command "Reset KARMA Ctrls Assign" with "Default Setting." These are the CC#'s that are assigned to these controllers by the "Default Setting." Normally you will assign these CC#'s for use.

This instrument operations when control changes are transmitted/received

The following table shows the operations that this instrument will perform when control change messages are received, and the relation between settings and controller movements on this instrument

CC#	Control	Value	Function	
0	Bank select (MSB)	0...127	bank select message MSB	*1
1	Modulation 1	0...127	corresponds to joystick movement in the +Y direction (away from yourself)	
2	Modulation 2	0...127	corresponds to joystick movement in the -Y direction (toward yourself)	
4	Foot controller	0...127	corresponds to when the assignable pedal function is set to Foot Pedal	
5	Portamento time	0...127	portamento time	
6	Data entry (MSB)	0...127	MSB of RPN and NRPN data	*2
7	Volume	0...127	volume	*3
8	Post insertion effect panpot	0...127	pan after the insertion effect	
10	Panpot	0...127	pan	
11	Expression	0...127	volume	*3
12	Effect control 1	0...127	for controlling Effect Dynamic Modulation (same as Dmod Src: FX1 #12)	
13	Effect control 2	0...127	for controlling Effect Dynamic Modulation (same as Dmod Src: EX2 #13)	
14	KARMA ON/OFF controls On/Off	0...63 (Off), 64...127 (On)	same as on/off when CC#14 is assigned to the KARMA [ON/OFF] key	*7
16	Controller (CC#16)	0...127	for controlling Modulation, Alternate Modulation (same as AMS: Ribbon #16), Effect Dynamic Modulation (same as Dmod Src Rbn#16)	
17	Knob modulation 1	0...127	corresponds to when Knob Mod.1 is assigned as the B mode function of a REALTIME CONTROLS knob	
18	Controller (CC#18)	0...127	for controlling Alternate Modulation (same as AMS: Ribbon #18), Effect Dynamic Modulation (same as Dmod Src: Rbn #18)	*8
19	Knob modulation 2	0...127	corresponds to when Knob Mod.2 is assigned as the B mode function of a REALTIME CONTROLS knob	
20	Knob modulation 3	0...127	corresponds to when Knob Mod.3 is assigned as the B mode function of a REALTIME CONTROLS knob	
21	Knob modulation 4	0...127	corresponds to when Knob Mod.4 is assigned as the B mode function of a REALTIME CONTROLS knob	
22	KARMA Realtime Controls Knob1	0...127	same as when CC#22 is assigned to KARMA Realtime Control knob 1	*7
23	KARMA Realtime Controls Knob2	0...127	same as when CC#23 is assigned to KARMA Realtime Control knob 2	*7
24	KARMA Realtime Controls Knob3	0...127	same as when CC#24 is assigned to KARMA Realtime Control knob 3	*7
25	KARMA Realtime Controls Knob4	0...127	same as when CC#25 is assigned to KARMA Realtime Control knob 4	*7
26	KARMA Realtime Controls Knob5	0...127	same as when CC#26 is assigned to KARMA Realtime Control knob 5	*7
27	KARMA Realtime Controls Knob6	0...127	same as when CC#27 is assigned to KARMA Realtime Control knob 6	*7
28	KARMA Realtime Controls Knob7	0...127	same as when CC#28 is assigned to KARMA Realtime Control knob 7	*7
29	KARMA Realtime Controls Knob8	0...127	same as when CC#29 is assigned to KARMA Realtime Control knob 8	*7
30	KARMA Realtime Controls SCENE On/Off	0...63 (Off), 64...127 (On)	same as on/off when CC#30 is assigned to KARMA Realtime Control [SCENE] key	*7
31	KARMA Realtime Controls LATCH On/Off	0...63 (Off), 64...127 (On)	same as on/off when CC#31 is assigned to KARMA Realtime Control [LATCH] key	*7
32	Bank select (LSB)	0...127	LSB of bank select message	*1
38	Data entry (LSB)	0...127	LSB of RPN or NRPN data	*2
64	Damper	0...127	damper effect	
65	Portamento On/Off	0...63(Off), 64...127(On)	turn the portamento effect on/off	
66	Sostenuto On/Off	0...63(Off), 64...127(On)	turn the sostenuto effect on/off	
67	Soft	0...127	soft pedal effect	
70	Sustain level	0...127	sustain levels of the filter EG and amp EG	*4
71	Filter resonance level High pass filter cutoff frequency	0...127	resonance level of the filter cutoff frequency of the high pass filter	*5 *4
72	Release time	0...127	release times of the filter EG and amp EG	*4
73	Attack time	0...127	attack times of the filter EG and amp EG	*4
74	Low pass filter cutoff frequency	0...127	cutoff frequency of the low pass filter	*4
75	Decay time	0...127	decay times/slope times of the filter EG and amp EG	*4
76	LFO1 speed	0...127	LFO1 speed	*4
77	LFO1 depth (pitch)	0...127	pitch LFO1 intensity	*4
78	LFO1 delay	0...127	LFO1 delay	*4
79	Filter EG intensity	0...127	filter EG intensity	*4
80	SW1 modulation On/Off	0...63(Off), 64...127(On)	corresponds to on/off when the SW1 function is set to SW1 Mod.	
81	SW2 modulation On/Off	0...63(Off), 64...127(On)	corresponds to on/off when the SW2 function is set to SW2 Mod.	
82	Foot switch On/Off	0...63(Off), 64...127(On)	corresponds to on/off when the function of the assignable foot switch is set to Foot SW	
83	Controller (CC#83)	0...127	for controlling Alternate Modulation (same as AMS: MIDI CC#8), Effect Dynamic Modulation (same as Dmod Src: CC#83)	
85	KARMA Realtime Controls SW1 On/Off	0...63(Off), 64...127(On)	same as on/off when CC#85 is assigned to KARMA Realtime Control switch 1	*7
86	KARMA Realtime Controls SW2 On/Off	0...63(Off), 64...127(On)	same as on/off when CC#86 is assigned to KARMA Realtime Control switch 1	*7
84	Chord Trigger 1 On/Off	0...63(Off), 64...127(On)	same as on/off when CC#87 is assigned to CHORD TRIGGER [1] key	*7
88	Chord Trigger 2 On/Off	0...63(Off), 64...127(On)	same as on/off when CC#88 is assigned to CHORD TRIGGER [2] key	*7
89	Chord Trigger 3 On/Off	0...63(Off), 64...127(On)	same as on/off when CC#89 is assigned to CHORD TRIGGER [3] key	*7
90	Chord Trigger 4 On/Off	0...63(Off), 64...127(On)	same as on/off when CC#90 is assigned to CHORD TRIGGER [4] key	*7
91	Effect depth 1 (send 2 level)	0...127	send 2 level	
92	Effect depth 2 (insertion effect 1,2,3,4,5 On/Off)	0(Off), 1...127(On)	turn insertion effect 1, 2, 3, 4, 5 on/off	*6
93	Effect depth 3 (send 1 level)	0...127	send 1 level	
94	Effect depth 4 (master effect 1 On/Off)	0(Off), 1...127(On)	master effect 1 on/off	*6
95	Effect depth 5 (master effect 2 On/Off)	0(Off), 1...127(On)	master effect 2 on/off	*6
96	Data increment	0		
97	Data decrement	0		
100	RPN(LSB)	0 1 2	select the pitch bend range select Fine Tune select Coarse Tune	*2 *2 *2
101	RPN(MSB)	0		

Any control change number (CC#00–95) can be assigned as the B mode function of a REALTIME CONTROLS knob. In this case, the transmitted values will all be 0–127.

You can assign any control change number (CC#00–95) to the KARMA Realtime Controls knobs and keys. In this case, the transmitted value will be 0–127 for knobs [1]–[8], and 0 (Off) or 127 (On) for all others.

*1 On this instrument’s sequencer, bank select messages are normally specified as a program change event (“Event Edit” SEQ 5.2–1b). However in some cases this will be insufficient when you wish to change banks on an external device. In such cases, you can use CC#00 and CC#32 to specify the banks.

For information on the relation between bank select numbers and the banks of your external device, refer to the owner’s manual for your external device.

*2 Unlike conventional control changes, pitch bend range, fine tune, and coarse tune settings are made using RPC (Registered Parameter Control) messages. In Program, Combination, Sequencer, and Song Play modes, you can use RPC messages to control the bend range and tuning for each program, combination (Combination), or track (Sequencer, Song Play). The procedure is to use an RPN (Registered Parameter Number) message to select the parameter that you wish to edit, and then use Data Entry to input a value for that parameter. To select the parameter, use CC#100 (with a value of 00–02) and CC#101 (with a value of 00). use CC#06 and CC#38 to enter the data.

The data entry values for each parameter and the corresponding settings are as follows.

RPN=0 (Pitch bend range)

CC#06	CC#38	Parameter value (Semitone steps)
00	00	0
01	00	+ 1
⋮	⋮	⋮
12	0	+12

RPN=1 (Fine tune)

CC#06	CC#38	Parameter value (1 cent steps)
32	00	-50
⋮	⋮	⋮
48	00	-25
⋮	⋮	⋮
64	00	0
⋮	⋮	⋮
96	00	+50

RPN=2 (Coarse tune)

CC#06	CC#38	Parameter value (Semitone steps)
40	00	-24
⋮	⋮	⋮
52	00	-12
⋮	⋮	⋮
64	00	0
⋮	⋮	⋮
88	00	+24

For example, if in Sequencer mode you wish to set a track that is receiving channel 1 to a transpose (coarse tuning) value of -12, you would first transmit [B0, 64, 02] (64H=CC#100) and [B0, 65, 00] (65H=CC#101) to this instrument to select the RPN coarse tune. Then you would set this to -12 by transmitting [B0, 06, 34] (06H=CC#6), 34H=52 (corresponds to -12), and [B0, 26, 00] (26H=CC#38, 00H=0).

*3 The volume of this instrument is determined by multiplying the Volume (CC#07) with the Expression (CC#11). When you select a song in Sequencer, Song Play mode, the volume will be set to the values specified for each

track, and the expression will be set to the maximum value (127).

*4 A value of 64 will correspond to the value specified by the program parameter. 0 will be the minimum, and 127 will be the maximum. Changing from 63–1 or from 65–126 will adjust the effect from the program parameter setting toward the minimum value or maximum value. The internal program parameters listed in (*4, *5) will be controlled.

*5 If the filter type of the corresponding program is **Low Pass Resonance**, the filter resonance level will be controlled. If the filter type is **Low Pass & High Pass**, the cutoff frequency of the high pass filter will be controlled.

*4, *5

CC#70–79 correspond to the following program parameters of this instrument.

In Program mode, when CC#70–79 is received on the global MIDI channel (“MIDI Channel” GLOBAL 2.1–1a), or when a REALTIME CONTROLS [1]–[4] knob is operated in A mode or in B mode when the function is assigned to CC#70–79, the corresponding program parameter will be edited temporarily. You can execute “Write Program” (PROG 1.1–1c) to save that state (except for some parameters). When you execute “Write Program,” the values of the corresponding program parameters will be rewritten.

In Combination, Sequencer, and Song Play modes, the program parameters of the program for the timbre/track of the corresponding MIDI channel will change, but this state can not be saved directly in the program.

CC#70: Sustain level

Corresponds to “Filter/Amp EG Sustain Level” (PROG 4.1/2: Ed-Filter1/2, EG page, 5.1/2: Ed-Amp1/2, EG page).

CC#71: Filter resonance level/High pass filter cutoff frequency

Corresponds to “Filter A Resonance” (PROG 4.1/2: Ed-Filter1/2, Basic page).

Corresponds to “Filter B Frequency” (PROG 4.1/2: Ed-Filter1/2, Basic page).

CC#72: Release time

Corresponds to “Filter/Amp EG Release Time” (PROG 4.1/2: Ed-Filter1/2, EG page, 5.1/2: Ed-Amp1/2, EG page).

CC#73: Attack time

Corresponds to Filter/Amp EG Attack Time” ((PROG 4.1/2: Ed-Filter1/2, EG page, 5.1/2: Ed-Amp1/2, EG page)

Corresponds to “Amp EG Start Level” (PROG 5.1/2: Ed-Amp1/2, EG page).

Corresponds to “Amp EG Attack Level” (PROG 5.1/2: Ed-Amp1/2, EG page).

Corresponds to “Amp EG Level Modulation Start” (PROG 5.1/2: Ed-Amp1/2, EG page).

Corresponds to “Amp EG Time Modulation Attack” (PROG 5.1/2: Ed-Amp1/2, EG page).

CC#74: Low pass filter cutoff frequency

Corresponds to “Filter A Frequency” (PROG 4.1/2: Ed-Filter1/2, EG page).

Corresponds to “Filter B Frequency” (PROG 4.1/2: Ed-Filter1/2, EG page).

CC#75: Decay time

Corresponds to “Filter/Amp EG Decay Time” (PROG 4.1/2: Ed-Filter1/2, EG page, 5.1/2: Ed-Amp1/2, EG page)

Corresponds to “Filter/Amp EG Slope Time” (PROG 4.1/2: Ed-Filter1/2, EG page, 5.1/2: Ed-Amp1/2, EG page)

CC#76: LFO1 speed

Corresponds to "LFO 1 Frequency" (PROG 5.3: Ed-LFOs, OSC1/2, LFO1 page).

CC#77: LFO1 depth (pitch LFO1 intensity)

Corresponds to "Pitch LFO1 Intensity" (PROG 3.1: Ed-Pitch, OSC1LFO page).

CC#78: LFO1 delay

Corresponds to "LFO1 Delay" (PROG 5.3: Ed-LFOs, OSC1/2, LFO1 page).

CC#79: Filter EG intensity

Corresponds to "Filter EG Intensity to A, B" (PROG 4.1/2: Ed-Filter1/2, Mod.1 page).

Different parameters are controlled for the bank F programs that are available when the separately sold EXB-MOSS option is installed. (☞"EXB-MOSS owner's manual" & p.269 "EXB-MOSS option")

*6 Controlled on the global MIDI channel.

*7 If you assign a CC# to a KARMA Realtime Controls knob or switch and operate it, the specified CC# will be transmitted, and at the same time the KARMA music workstation will also be controlled. When this message is received, the result will be the same as if the actual knob or switch had been operated.

Assignments of a CC# to each knob or key can be made in GLOBAL mode 6.1-2(2): KARMA 1 (2) pages. Normally you will leave this Off. Make these settings only when you need to assign MIDI control change messages; for example when you wish to record KARMA Realtime Controls knob or key operations into the internal sequencer or an external MIDI sequencer, or when you wish to control the KARMA function from an external MIDI device.

Although it is possible to set each knob and key to any MIDI control change message CC#00-95, you should normally use the utility menu command "Reset KARMA Ctrls Assign," and select "Default Setting." (☞p.146)

This table shows only the operations for the "Default Setting." The "Default Setting" is the recommended CC# for use by each of these controllers. Normally you should assign these CC#'s for use.

*8 Corresponds to the operation of the [VALUE] slider as a controller in Program or Combination 1.1: Play when "Program Select" or "Combi Select" is the edit cell.

MIDI applications

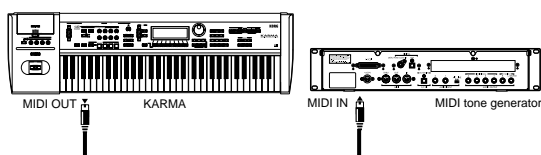
■ About MIDI

MIDI stands for Musical Instrument Digital Interface, and is a world-wide standard for exchanging various types of musical data between electronic musical instruments and computers. When MIDI cables are used to connect two or more MIDI devices, performance data can be exchanged between the devices, even if they were made by different manufacturers.

■ Connecting MIDI devices/computers (MIDI connectors)

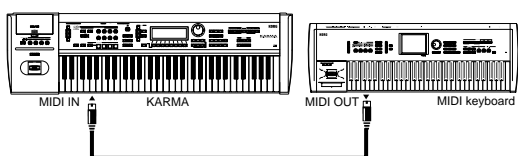
□ Controlling an external MIDI tone generator from this instrument

When you wish to use this instrument's keyboard, controllers, and sequencer etc. to play an external MIDI tone generator, use a MIDI cable to connect this instrument's MIDI OUT connector to the MIDI IN connector of the external MIDI tone generator.



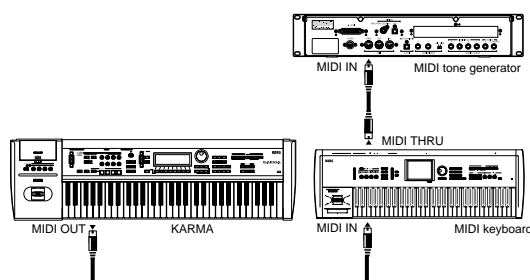
□ Controlling this instrument's tone generator from an external MIDI device

When you wish to play or control this instrument's tone generator from an external MIDI keyboard or sequencer etc., use a MIDI cable to connect the MIDI OUT connector of the external MIDI device to the MIDI IN connector of this instrument.

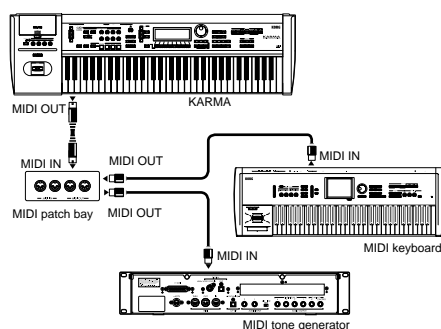


□ Controlling two or more external MIDI tone generators from this instrument

You can use the MIDI THRU jack to simultaneously control multiple MIDI devices. (This type of connection should be used to connect no more than three devices. If you wish to connect a larger number of MIDI devices, we recommend that you use a MIDI patch bay as shown in the second diagram below.)



You can also use a MIDI patch bay to control multiple MIDI devices.



The "Convert Position" setting

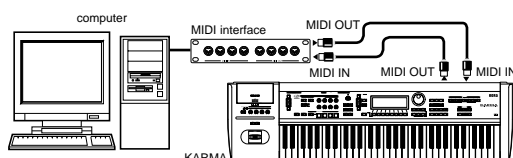
On this instrument, the parameters "Key Transpose," "Velocity Curve" and "After Touch Curve" (GLOBAL 1.1-1a) allow you to transpose the pitch, adjust the velocity sensitivity, and adjust the after touch sensitivity (p.134).

The effect that these settings will have on the internal sequencer and on the MIDI data that is transmitted and received will depend on "Convert Position" (GLOBAL 2.1-1a) setting (p.138).

- When controlling an external MIDI tone generator from this instrument, select **Pre MIDI**. The above-listed settings will affect the MIDI data that is transmitted. These settings will also affect the data that is recorded on the internal sequencer. Incoming MIDI data will be handled with settings equivalent to "Key Transpose" 0, "Velocity Curve" 4, and "After Touch Curve" 3.
- When controlling this instrument's tone generator from an external MIDI device, select **PostMIDI**. The above-listed settings will affect the MIDI data that is received. These settings will also affect the data that is played back from the internal sequencer. Outgoing MIDI data will be handled with settings equivalent to "Key Transpose" 0, "Velocity Curve" 4, and "After Touch Curve" 3.

□ Connecting an external MIDI sequencer or computer etc.

You can play this instrument's keyboard and record your performance on an external MIDI sequencer/computer (connected via a MIDI interface), and then play back the recorded performance to sound this instrument's tone generator (i.e., using this instrument as an input keyboard and MIDI tone generator). To do this, connect the MIDI OUT and MIDI IN connectors of this instrument and your external MIDI sequencer/computer to each other.



Local Control On settings

When connections are made as shown above, turn on the Echo Back function of the external MIDI sequencer or computer (so that data received at MIDI IN will be re-transmitted from MIDI OUT), and turn **off** this instrument's **Local Control** setting (so that this instrument's keyboard and tone generator will be internally disconnected). When you play the keyboard of this instrument, the musical data will be transmitted to the external MIDI sequencer or computer, and then echoed back to play this instrument's tone generator. In other words, by turning Local Control OFF, you can prevent notes from being sounded in duplicate, as would otherwise occur if a note were sounded by this instrument's own keyboard and again by the data that was echoed-back.

If the KARMA function is on, playing this instrument's keyboard will not cause the KARMA function to operate, and only the musical data produced by playing the keyboard will be transmitted. The KARMA function will operate only in response to the notes that are echoed-back and received at MIDI IN. In this way, turning off Local Control prevents the KARMA function from operating in duplicate.

Use this setting when you wish to record on the external MIDI sequencer or computer only the notes that trigger the KARMA function, and to use the echoed-back notes to operate the KARMA function while monitoring your recording or during playback.

note If you want the note data produced by the KARMA function to be recorded on the external sequencer/computer, set Local Control **on**, and turn off the Echo Back setting of the external sequencer/computer.

To turn **off** Local Control, the "Local Control On" (GLOBAL 2.1-1a) check box to **unchecked** it (☞p.137).

When using this instrument by itself, leave Local Control turned on. (If this is **off** when this instrument is used by itself, playing the keyboard will not produce sound.)

■ Messages transmitted and received by this instrument

[...] indicates hexadecimal notation

□ MIDI channels

MIDI messages can be exchanged when the transmitting and receiving devices are set to the same MIDI channel. MIDI uses sixteen channels, numbered 1-16. The way in which channels are handled will differ depending on the mode.

Program mode

- Transmission/reception is performed on the global MIDI channel*.
- * The **global MIDI channel** is the basic channel that this instrument uses for MIDI transmission/reception, and is set by "MIDI Channel" (GLOBAL 2.1-1a).

Combination mode

- The global MIDI channel is used to transmit/receive messages for selecting a combination and turning effects on/off, and to transmit/receive exclusive data.
- The MIDI channel specified for each timbre (in COMBI 3.3-1a) is used to transmit/receive MIDI data for each timbre.
- The MIDI channel specified for each of the insert effects and master effects (in MIDI channel "Control Ch (control Channel)" (COMBI 7.2-1b, 7.3-1a, 7.3-1d)) is

used to control dynamic modulation, and to control the pan and send 1/2 after the sound has passed through the insert effects.

- MIDI data for KARMA modules [A][B][C][D] is transmitted and received on the "Input Channel" and "Output Channel" (COMBI 6.1-2a) specified for each module.
- When you operate the keyboard or controllers of this instrument, messages will be transmitted on the global MIDI channel, and will also be transmitted on the MIDI channel of any timbre whose "Status" (COMBI 3.1-1a) is set to **EXT** or **EX2**.
- Channel messages will be received if they match the MIDI channel of a timbre whose "Status" is set to **INT** (☞p.49 "Status" and "MIDI Channel").

Sequencer mode, Song Play mode

- The global MIDI channel is used to transmit/receive exclusive data and for messages that switch effects on/off.
- MIDI data of each track is transmitted/received on the MIDI channel specified for each track (In Sequencer mode, this will be the settings of SEQ 3.1-1/2a. In Song Play mode, the channels are fixed.)
- The MIDI channel specified for each of the insert effects and master effects (in SEQ/S.PLAY 7.2-1b, 7.3-1a, 7.3-1c) is used to control dynamic modulation, and to control the pan and send 1/2 after the sound has passed through the insert effects.
- MIDI data for KARMA modules [A][B][C][D] is transmitted and received on the "Input Channel" and "Output Channel" (SEQ/S.PLAY 6.1-2a) specified for each module.
- When you operate the keyboard or controllers of this instrument, messages will be transmitted on the MIDI channel selected by "Track Select" (SEQ/S.PLAY 6.1-2a). However, messages will be transmitted only if the track selected by "Track Select" has a "Status" of **BTH**, **EXT**, or **EX2**. (☞p.74 "Track Select"-"MIDI")
- When Sequencer is played back, musical data of tracks whose "Status" is **BTH**, **EXT**, or **EX2** will be transmitted on the specified MIDI channels.
- Tracks whose "Status" (MULTI 3.1-1a/2a) is **INT** or **BTH** will receive channel messages of the matching MIDI channel (☞p.82, p.120 "Status" and "MIDI Channel").

□ Note on/off

Note-on [9n, kk, vv]

Note-off [8n, kk, vv]

(n: channel, kk: note number, vv: velocity)

This instrument can receive note-on/off messages to sound its tone generator. When you press a [CHORD TRIGGER] key, note-on/off data for the specified chord will be transmitted. (☞BG p.26 "Performing with the KARMA function")

When the KARMA function is running, the KARMA function will transmit note-on/off messages. When Local Control is Off, note-on/off data from the KARMA function will not be transmitted. (☞p.137)

Most devices do not transmit or receive note-off velocity, and this instrument does not transmit or receive this data either.

□ Program Change/Bank Select

Changing the program/bank

Program change [Cn, pp]

(n: channel, pp: program number that allows 128 sounds to be selected)

- Programs 000–127 in banks A, B, C, D, E, and F correspond to program changes [Cn, 00]–[Cn, 7F].
- Programs 001–128 in banks G, g(1)–g(9), g(d), and g(d) correspond to program changes [Cn, 00]–[Cn, 7F].

Bank select MSB (CC#0) [Bn, 00, mm],

Bank select LSB (CC#32) [Bn, 20, bb]

(n: channel, mm: bank number upper byte, bb: bank number lower byte)

- The internal banks that correspond to each bank select number will depend on the “Bank Map” setting (GLOBAL 1.1–2a). With the factory settings, this will be GM(2). (☞p.136 “Bank Map”)

Simply receiving a Bank Select message will not cause the program or bank to change. The program or bank will actually change when a Program Change message is received.

Program mode

- In PROG 1.1: Play, program change and bank select messages are transmitted and received on the global MIDI channel. These messages are not received in PROG 2.1: Ed–Basic – PROG 7.3: Ed–MasterFX.

Combination, Sequencer and Song Play modes

- Program change and bank select messages can be received on the MIDI channel specified for each timbre/track to select programs on that timbre/track.
- When you select a combination, program change and bank select messages will be transmitted by timbres whose “Status” is EXT or EX2.
In Sequencer and Song Play modes, program change or bank select messages will be transmitted by tracks whose “Status” is BTH, EXT, or EX2 when you select the “Program Select” (SEQ/S.PLAY 1.1–2a/3a), when you select a song, or when you return to the beginning of a measure. (☞p.74, 117 “Program Select”–“MIDI”)
- In Combination and Sequencer modes, transmission/reception can be switched on/off for each timbre/track. (☞p.54, 87 “Program Change”).

Selecting combinations

You can use program change and bank select messages to select combinations in the same way that you select programs.

- Combinations 000–127 in banks A, B, C, D, E, and F correspond to program changes [Cn, 00]–[Cn, 7F].
- Similarly as for program banks, the internal banks that correspond to each bank select number will depend on the “Bank Map” setting (GLOBAL 1.1–2a). (☞p.136 “Bank Map”)
- In COMBI 1.1: Play, program change and bank select messages are transmitted/received on the global MIDI channel. They are not received in COMBI 2.1: Ed–Prog/Mixer – COMBI 7.3: Ed–MasterFX.

note All program changes can be turned off in “MIDI Filter” (GLOBAL 2.1–1b).

As needed, you can independently turn all program changes on/off, specify whether or not incoming messages will be able to change combinations, and turn reception/transmission of bank select messages on/off.

- If “Combi (Combi Change)” (GLOBAL 2.1–1b) is unchecked, the combination will not change even if a program change on the global MIDI channel is received in COMBI 1.1: Play. In this case, the program of the timbre that matches the MIDI channel of the received message will change.
- If “Bank (Bank Change)” (GLOBAL 2.1–1b) is unchecked, bank select messages will not be transmitted or received (☞p.138 “MIDI Filter”).

□ After touch

Channel after touch [Dn, vv]

(n: channel, vv: value)

When you apply pressure to the keyboard after playing a note, an after touch effect will be applied, and Channel After Touch messages will be transmitted. When these messages are received, an after touch effect will be applied.

- After touch for the entire instrument can be turned off in “AfterT (After Touch)” (GLOBAL 2.1–1b).
- In Combination and Sequencer modes, after touch can be switched on/off independently for each timbre/track (☞“After Touch” COMBI/SEQ 4.1–1/2a).

Polyphonic key pressure [An, kk, vv]

(n: channel, kk: note number, vv: value)

There is another type of after touch called Polyphonic Key Pressure, which allows after touch to be applied independently for individual keys. This message can be used as an alternate modulation source, but cannot be transmitted by this instrument’s keyboard. In order to use this message, it will have to be received from an external device, or recorded on your sequencer.

The after touch mentioned in this manual refers to Channel After Touch.

□ Pitch bender

Pitch bend change [En, bb, mm]

(n: channel, bb: lower byte of the value, mm: upper byte of the value, together expressing a value of 16,384 steps where 8,192 [bb, mm = 00H, 40H] is the center value)

When this instrument’s joystick is moved in the X axis (left/right), a pitch bend effect will be applied, and pitch bender messages will also be transmitted. When these messages are received, a pitch bend effect will be applied.

note The range of pitch change that is produced by pitch bend messages can also be adjusted via MIDI. (☞BG p.25 “Changing the pitch bend range”)

□ Control change

[Bn, cc, vv]

Transmitted and received as (n: channel, cc: control change no., vv: value)

Refer to “MIDI transmission when this instrument’s controllers are operated” (p.240) and “This instrument operations when control changes are transmitted/received” (p.242).

- Control changes can be turned on/off as a whole in “Ctrl Change (Control Change)” (GLOBAL 2.1–1b).
- In Combination and Sequencer modes, the COMBI/SEQ 4.1–4.4: Ed-MIDI Filter 1–4 settings allow transmission/reception of control changes to be individually turned on/off for each timbre/track. For the assignable controllers ([SW1], [SW2], REALTIME CONTROLS [1]–[4] knobs, Foot Pedal/Switch), MIDI filter settings will apply to the control change number to which each controller is assigned. “Other Control Change” applies to control changes that are not covered by the items of the other check boxes (p.56, 89).

note MIDI CC#00–CC#95 can be selected for the B mode of REALTIME CONTROLS [1]–[4] knobs and KARMA REALTIME CONTROLS.

Selecting program/combination banks

Bank select (CC#00, CC#32)

p.247 “Program Change/Bank Select”

Using the joystick to apply modulation

Modulation 1 depth (CC#01) [Bn, 01, vv]

When you move this instrument’s joystick in the +Y direction (away from yourself), Modulation 1 Depth messages will be transmitted. When these messages are received, the same effect will be applied as when this instrument’s joystick is operated. Normally this will apply a vibrato effect (pitch LFO).

- In Combination and Sequencer modes, transmission/reception can be switched on/off for each timbre/track (p. “JS+Y CC#01” COMBI/SEQ 4.2–1/2a).

Modulation 2 depth (CC#02) [Bn, 02, vv]

When you move this instrument’s joystick in the –Y direction (toward yourself), Modulation 2 Depth messages will be transmitted. When these messages are received, the same effect will be applied as when this instrument’s joystick is operated. Normally this will apply a wah effect (filter LFO).

- In Combination and Sequencer modes, transmission/reception can be switched on/off for each timbre/track. (p. “JS–Y CC#02” COMBI/SEQ 4.2–1/2a)

note Other manufacturers use this message for other purposes (e.g., breath controller, etc.)

Controlling the portamento effect

Portamento time (CC#05) [Bn, 05, vv]

When the above CC# is assigned as a B mode function for one of the REALTIME CONTROLS [1]–[4] knobs, rotating that knob will transmit Portamento Time messages, and will modify the speed at which the portamento pitch changes. When this message is received, the result will be the same as when the controller is operated.

Portamento switch (CC#65) [Bn, 41, vv]

When the above CC# is assigned to “SW1,” “SW2” or ASSIGNABLE SWITCH, operating that switch will transmit vv=127 [7F] for ON or vv=0 [00] for OFF, and the portamento effect will be switched on/off. When this mes-

sage is received, the result will be the same as when the controller is operated. (vv of 63 [3F] or less will be OFF, and 64 [40] or greater will be ON.) (p.230 “SW1, SW2 Assign List”)

- In Combination and Sequencer modes, transmission/reception of this message can be turned on/off independently for each timbre/track. (p.55, 88 “Portamento SW CC#65” COMBI 4.1–2a, SEQ 4.1–3/4a)
- In Sequencer mode, portamento time/switch messages will be transmitted by each track whose “Status” is BTH, EXT, or EX2 when you set “Portamento” (SEQ 4.1–3/4a), re-select a song or SMF, or return to the beginning of a measure. (p.83)

Controlling the volume

Volume (CC#07) [Bn, 07, vv]

When the above CC# is assigned to the ASSIGNABLE PEDAL or as the B-mode function of a REALTIME CONTROL knob [1]–[4], operating that controller will transmit Volume messages, and the volume will change. When this message is received, the result will be the same as when the controller is operated.

Expression (CC#11) [Bn, 0B, vv]

When the above CC# is assigned to the ASSIGNABLE PEDAL or as the B-mode function of a REALTIME CONTROL knob [1]–[4], operating that controller will transmit Expression messages, and the volume will change. When this message is received, the result will be the same as when the controller is operated.

The volume of this instrument is determined by multiplying the value of the **Volume message** with the value of the **Expression message**.

If adjusting the Volume message does not increase the volume as you expect, or if there is no sound, transmit MIDI messages from an external device to reset the value of the Expression message (set vv to 127). In Sequencer mode, this will be reset when the “Location” of the song is moved to 001:01.000.

- In Combination mode, Volume messages will be transmitted by each timbre whose “Status” is EXT or EX2 when you re-select the combination.
- When you change the “Volume” setting (SEQ/S.PLAY 1.1–4/5) in Sequencer mode or Song Play mode, or when you re-select the song or return to the beginning of the song in Sequencer mode, volume messages will be transmitted by each track whose “Status” is BTH, EXT, or EX2.

Regardless of the “Status” settings, re-selecting a song, or returning to the beginning will reset the internal Volume value to the value specified by each track (the starting settings), and will reset the Expression value to the maximum.

note You can control the volume independently for each track. You will normally use Volume messages to set the initial volume level for each track (the starting settings), and use Expression messages to create changes in dynamics within the musical data of the song.

By using the universal exclusive Master Volume message, you can adjust the overall volume without changing the volume balance between timbres or tracks. (p.252 “About system exclusive messages”)

Controlling panpot (stereo position)

Panpot (CC#10) [Bn, 0A, vv]

(vv: value, where 00 is far left, 64 is center, and 127 is far right)

When the above CC# is assigned to the ASSIGNABLE PEDAL or as the B mode function of a REALTIME CONTROLS knob [1]–[4], operating that controller will transmit Panpot messages, and the panning will change. When this message is received, the result will be the same as when the controller is operated.

- When you set the “Pan” (SEQ/S.PLAY 1.1–4/5) in Sequencer mode or Song Play mode, or when you re-select the song or return to the beginning of the measure in Sequencer mode, Panpot messages (except for RND) will be transmitted by each track whose “Status” is **BTH**, **EXT**, or **EX2** (☞p.75, p.117).

Post insert effect panpot (CC#08) [Bn, 08, vv]

(vv: value, where 00 is far left, 64 is center, and 127 is far right)

When the above CC# is assigned to the ASSIGNABLE PEDAL or as the B mode function of a REALTIME CONTROLS knob [1]–[4], operating that controller will transmit Post Insert Effect Panpot messages, and the panning of the sound following the insert effect will change. When this message is received, the result will be the same as when the controller is operated.

- In Program mode, this message is transmitted/received on the global MIDI channel. In Combination, Sequencer, and Song Play modes, this message is transmitted/received on the MIDI channel specified for each insert effect.
- When you set “Pan (CC#8)” (SEQ/S.PLAY 7.2–1a) in Sequencer mode or Song Play mode, or when you re-select the song or return to the beginning of the measure in Sequencer mode, Post Insert Effect Panpot messages will be transmitted by each track whose “Status” is **BTH**, **EXT**, or **EX2** (☞p.112, p.130).

Effect control

Effect control 1 (CC#12) [Bn, 0C, vv]

Effect control 2 (CC#13) [Bn, 0D, vv]

When the above CC# is assigned to the ASSIGNABLE PEDAL or as the B mode function of a REALTIME CONTROLS knob [1]–[4], operating that controller will transmit Effect Control 1/2 messages, and the specified dynamic modulation will be controlled. When this message is received, the result will be the same as when the controller is operated.

Although various types of control change can be selected as dynamic modulation sources, Effect Control 1 (CC#12) and 2 (CC#13) are dedicated for dynamic modulation.

Effect 1 depth (Send 2) (CC#91) [Bn, 5B, vv]

Effect 3 depth (Send 1) (CC#93) [Bn, 5D, vv]

When the above CC# is assigned to the ASSIGNABLE PEDAL or as the B-mode function of a REALTIME CONTROL knob [1]–[4], operating that controller will transmit Effect 1 Depth (Send 2) or Effect 3 Depth (Send 1) messages, and the send level 1 or 2 to the master effects MFX1 or MFX2 will be controlled respectively. When this message is received, the result will be the same as when the controller is operated.

On the corresponding MIDI channels, this will simultaneously control the timbre/track setting as well as the setting following the insertion effect.

- In Combination, Sequencer, and Song Play modes, the actual send level of the timbre/track is determined by multiplying this value with the send 1/2 settings for each oscillator (PROG 7.1–1a). (☞p.37, p.66, p.112, p.130 “OSC Send 1/2,” “S1 (Send1(MFX1)),” “S2 (Send2(MFX2))”)
- When you adjust “S1 (Send1(MFX1))” or “S2 (Send2(MFX2))” (SEQ 7.1–1a/2a, 7.2–1a) in Sequencer or Song Play mode, or when you re-select a song or return to the beginning of the measure in Sequencer mode, Send 1/2 will be transmitted by each track whose “Status” is **BTH**, **EXT**, or **EX2**. (☞p.66, p.120).

Effect 2 depth (IFX1–5 on/off) (CC#92) [Bn, 5C, vv]

Effect 4 depth (MFX1 on/off) (CC#94) [Bn, 5E, vv]

Effect 5 depth (MFX2 on/off) (CC#95) [Bn, 5F, vv]

Separately from the effect on/off settings in each mode, “FX SW” (GLOBAL 1.1–1b) allows you to turn off insert effects IFX1–5 and master effects MFX1 and MFX2. If you check “IFX1–5 Off,” “MFX1 Off” or “MFX2 Off,” the corresponding message will be transmitted with vv=0 [00]. If you **uncheck** these settings, the corresponding message will be transmitted with vv=127 [7F]. If you check these settings, the corresponding effect(s) will be turned off as a group. If you uncheck these settings, the on/off settings of each mode will be used. The same applies to reception. (vv of 00 is off, and 01 or greater is the original setting.) These messages are transmitted/received on the global MIDI channel. (☞p.39, p.40 “IFX 1–5 On/Off”)

note These messages are defined simply for use in adjusting the effect levels, and may not have the same function on another instrument connected to this instrument.

Using various controllers for control

Foot controller (CC#04) [Bn, 04, vv]

If the above CC# is assigned as the ASSIGNABLE PEDAL function, this message will be transmitted when the controller is operated.

- In Combination and Sequencer modes, transmission/reception of this message can be turned on/off independently for each timbre/track.
☞“Foot Pedal/Switch” (COMBI 4.4–2a, SEQ 4.4–3/4a)

Controller (CC#18) [Bn, 12, vv]

This message will be transmitted when this instrument’s [VALUE] slider is operated.

This is valid in PROG 1.1: Play and COMBI 1.1: Play when the program or combination “Program Select” is selected (highlighted).

Knob modulation 1, 2, 3, 4 (CC#17, 19, 20, 21)

[Bn, 11, vv], [Bn, 13, vv], [Bn, 14, vv], [Bn, 15, vv]

If the above CC# are assigned to the B mode of REALTIME CONTROLS [1]–[4] knobs, these messages will be transmitted when the knobs are operated.

- In Combination and Sequencer modes, transmission/reception of this message can be turned on/off independently for each timbre/track (☞p.55, 89 “Realtime Control Knob1, 2, 3, 4” COMBI/SEQ 4.3).

Controller (CC#83) [Bn, 53, vv]

If the above CC# is assigned to the B mode of REALTIME CONTROLS [1]–[4] knobs, this message will be transmitted when the knob is operated.

SW1 modulation (CC#80) [Bn, 50, vv]

SW2 modulation (CC#81) [Bn, 51, vv]

If the above CC# are assigned as the function of [SW1] or [SW2], operating the switch will transmit this message with vv=127 [7F] for ON, and vv=00 [00] for OFF. (These can also be set as the B mode functions of the REALTIME CONTROL knobs [1]–[4].)

- In Combination and Sequencer modes, transmission/reception of these messages can be turned on/off independently for each timbre/track (“SW1/2” COMBI 4.4–1a, SEQ 4.4–1/2a)

Foot switch (CC#82) [Bn, 52, vv]

If the above CC# is assigned as the function of the ASSIGNABLE SWITCH, operating the switch will transmit this message with vv=127 [7F] for ON, and vv=00 [00] for OFF. (This can also be set as a B mode function of the REALTIME CONTROL knobs [1]–[4].)

- In Combination and Sequencer modes, transmission/reception of this message can be turned on/off independently for each timbre/track (“Foot Pedal/Switch” COMBI 4.4–2a, SEQ 4.4–3/4a).

When “Foot controller (CC#04)”–“Foot switch (CC#82)” are operated on this instrument, the specified alternate modulation or dynamic modulation etc. will be controlled. When these messages are received, the result will be the same as if the controller had been operated. For “SW1 modulation (CC#80)”–“Foot switch (CC#82),” vv of 63 [3F] or less will be OFF, and 64 [3F] or greater will be ON.

Damper pedal (CC#64) [Bn, 40, vv]

This message is transmitted when you operate a damper pedal (separately sold Korg DS-1H etc.) connected to the DAMPER jack, and the damper effect will be turned on/off. If the DS-1H is used, a half-damper effect can be applied.

- In Combination and Sequencer modes, transmission/reception of this message can be turned on/off independently for each timbre/track (“Damper CC#64” COMBI 4.1–2a, SEQ 4.1–3/4a).

Sostenuto (CC#66) [Bn, 42, vv]

If the above CC# is assigned as the function of the ASSIGNABLE SWITCH, operating the switch will transmit this message with vv=127 [7F] for ON, and vv=00 [00] for OFF, and the sostenuto effect will be turned on/off. When this message is received, the result will be the same as when the controller is operated (OFF for vv=63 [3F] or below, and ON for vv=64 [40] or above).

Soft pedal (CC#67) [Bn, 43, vv]

If the above CC# is assigned as the function of the ASSIGNABLE SWITCH, the soft pedal effect will be turned on/off. When this message is received, the result will be the same as when the controller is operated.

Controlling via the controllers of a connected MIDI instrument such as the TRITON

Ribbon Controller (CC#16) [Bn, 10, vv]

When a control change is received from the ribbon controller or other assigned controller of a MIDI instrument (such as the TRITON), the specified effect (e.g., alternate modulation or dynamic modulation) will be applied.

- In Combination or Sequencer modes, transmission and reception can be turned on/off for each timbre/track. (“Ribbon CC#16” COMBI 4.2–2a, SEQ 4.2–3/4a)

Controlling the tone/envelope of a program

CC#70–78 control specific parameters of a program. For details on the program parameters that correspond to each control change, and how this instrument will respond in each mode when these are received, refer to “This instrument operations when control changes are transmitted/received” (p.242).

Low pass filter cutoff (CC#74) [Bn, 4A, vv]

Resonance level/High pass filter cutoff (CC#71) [Bn, 47, vv]

Filter EG intensity (CC#79) [Bn, 4F, vv]

Release time (CC#72) [Bn, 48, vv]

These messages are transmitted when you operate this instrument’s REALTIME CONTROLS [1]–[4] knobs in A mode. (They can also be set as B mode functions.)

Sustain level (CC#70) [Bn, 46, vv]

Attack time (CC#73) [Bn, 49, vv]

Decay time (CC#75) [Bn, 4B, vv]

LFO 1 speed (CC#76) [Bn, 4C, vv]

LFO 1 depth (pitch) (CC#77) [Bn, 4D, vv]

LFO 1 delay (CC#78) [Bn, 4E, vv]

These messages are transmitted when assign the above CC# to the REALTIME CONTROLS [1]–[4] knobs in B mode and operate them.

When you operate these, the corresponding program parameters will be controlled, and the sound and envelope will change. When these messages are received, the result will be the same as when the controller is operated. (When the message has a value vv=64 [40], the setting will have the value that was set by the program parameter.)

- In Combination and Sequencer modes, transmission/reception can be turned on/off independently for each timbre/track (“Realtime Control Knob1, 2, 3, 4” COMBI 4.3–1a, SEQ 4.3).

note In Program mode, the corresponding program parameters will be temporarily edited by these messages. You can Write the program to save the modified state (except for certain parameters). The Write operation can also be performed by a MIDI exclusive Program Write Request message, in addition to the usual method of using this instrument’s switches. When you write the data, the values of the corresponding program parameters will be rewritten.

note The results of receiving these messages will depend on the instrument. The operation may be different when a device other than this instrument is connected.

Controlling the KARMA function

When you operate the KARMA REALTIME CONTROLS knobs or switches of this instrument with the following CC#’s assigned, the assigned CC# will be transmitted, and at the same time this instrument itself will also be controlled. When these messages are received, the result will be the same as if the built-in controller had been operated.

Assignments of a CC# to each knob or key can be made in GLOBAL mode 6.1–2(2): KARMA 1 (2) pages. Normally you will leave this Off. Make these settings only when you need to assign MIDI control change messages; for example when you wish to record KARMA REALTIME CONTROLS knob or key operations into the internal sequencer or an external MIDI sequencer, or when you wish to control the KARMA function from an external MIDI device.

Although it is possible to set each knob and key to any MIDI control change message CC#00–95, you should normally use the utility menu command “Reset KARMA Ctrl Assign,” and select “Default Setting.” (p.146)

The operations shown below are for the “Default Setting.” These will be transmitted when you operate the corresponding controller of the KARMA workstation. When these are received, the result will be the same as if the built-in controller had been operated.

KARMA ON/OFF (CC#14) [Bn, 0E, vv]

This corresponds to the KARMA Realtime Controls [ON/OFF] key. Transmit vv=127 [7F] when on, and vv=127 [7F] when off.

KARMA Knob1 (CC#22) [Bn, 16, vv]
KARMA Knob2 (CC#23) [Bn, 17, vv]
KARMA Knob3 (CC#24) [Bn, 18, vv]
KARMA Knob4 (CC#25) [Bn, 19, vv]
KARMA Knob5 (CC#26) [Bn, 1A, vv]
KARMA Knob6 (CC#27) [Bn, 1B, vv]
KARMA Knob7 (CC#28) [Bn, 1C, vv]
KARMA Knob8 (CC#29) [Bn, 1D, vv]

These correspond to KARMA Realtime Controls knobs [1]–[8].

KARMA SCENE (CC#30) [Bn, 1E, vv]

This corresponds to the KARMA Realtime Controls [SCENE] key.

Transmit vv=127 [7F] when on, and vv=127 [7F] when off.

KARMA LATCH (CC#31) [Bn, 1F, vv]

This corresponds to the KARMA Realtime Controls [LATCH] key.

Transmit vv=127 [7F] when on, and vv=127 [7F] when off.

KARMA SW1 (CC#85) [Bn, 55, vv]

KARMA SW2 (CC#86) [Bn, 56, vv]

These correspond to the KARMA Realtime Controls switches [1] and [2].

Transmit vv=127 [7F] when on, and vv=127 [7F] when off.

Chord1 (CC#87) [Bn, 57, vv]

Chord2 (CC#88) [Bn, 58, vv]

Chord3 (CC#89) [Bn, 59, vv]

Chord4 (CC#90) [Bn, 5A, vv]

These correspond to CHORD TRIGGER [1]–[4].

Transmit vv=127 [7F] when on, and vv=127 [7F] when off.

Silencing all notes on a specific channel

All note off (CC#123) [Bn, 7B, 00] (value 00)

When this is received, all currently-sounding notes on that channel will be turned off (as though the keys had been released). However, the release portion of the notes will remain.

All sound off (CC#120) [Bn, 78, 00] (value 00)

When this is received, all currently-sounding notes on that channel will be silenced. While the All Note Off message allows the release portion of the notes to remain, the All Sound Off message will silence the notes immediately.

However, these messages are provided for emergency use, and are not something that you will use while performing.

Resetting all controllers on a specific channel

Reset all controllers (CC#121) [Bn, 79, 00] (value 00)

When this is received, the value of all controllers on that channel will be reset.

Using RPN to edit

RPN (Registered Parameter Number) is a type of message that allows settings to be made in a way that is common between instrument manufacturers. (NRPN (Non-registered Parameter Numbers) and exclusive messages can be freely used in non-compatible ways by different manufacturers and models of instrument.)

RPN messages can be used for editing with the following procedure.

- ① Use RPN MSB (CC#101) [Bn, 65, mm] and RPN LSB (CC#100) [Bn, 64, rr] (n: channel, mm, rr: upper and lower bytes of the parameter number) messages to select the parameter.

- ② Use data entry MSB (CC#6) [Bn, 06, mm] and data entry LSB (CC#38) [Bn, 26, vv] (n: channel, mm, vv: upper and lower bytes of the value, together expressing 16,384 levels) to specify the value.
- ③ You can use data increment (CC#96) [Bn, 60,00] or data decrement (CC#97) [Bn, 61, 00] (n: channel, value is fixed at 00) to change the value in steps of one.

This instrument can receive the following three RPN messages (tuning, transpose, and pitch bend range).

Tuning

RPN fine tune [Bn, 65, 00, 64, 01]

This RPN message can be used to adjust the detuning for a program or timbre (in Combination mode), or for a track (in Sequencer and Song Play modes).

The procedure is as follows.

- ① [Bn, 65, 00, 64, 01]: Select RPN parameter 01.
- ② [Bn, 06, mm, 26, vv]: Use data entry to set the value. A value of 8192 [mm, vv=40, 00] is center, 0 [mm, vv=00, 00] is -100 cents, and 16383 [mm, vv=7F, 7F] is +99 cents.

note You can use the universal exclusive Fine Tune message to adjust the overall tuning that corresponds to the “Master Tune” (GLOBAL 1.1–1a) parameter. (Ⓝp.252 “About system exclusive messages”)

Transposing

RPN coarse tune [Bn, 65, 00, 64, 02]

This RPN message can be used to adjust the transposition for a program or timbre (in Combination mode), or for a track (in Sequencer and Song Play mode).

The procedure is as follows.

- ① [Bn, 65, 00, 64, 02]: Select RPN parameter 02.
- ② [Bn, 06, mm, 26, vv]: Use data entry to set the value. Normally only the upper byte is used.

A value of 8192 [mm, vv=40, 00] is center, 6656 [mm, vv=34, 00] is -12 semitones, and 9728 [mm, vv=4C, 00] is +12 semitones.

note You can use the universal exclusive Coarse Tune message to adjust the overall tuning that corresponds to the “Key Transpose” (GLOBAL 1.1–1a) parameter. (Ⓝp.252 “About system exclusive messages”)

Changing the pitch bend range

RPN pitch bend range [Bn, 64, 00, 65, 00]

This RPN message can be used to adjust the pitch bend range for a program or timbre (in Combination mode) or for a track (in Sequencer and Song Play modes).

The procedure is as follows.

- ① [Bn, 65, 00, 64, 00]: Select RPN parameter 00.
- ② [Bn, 06, mm, 26, vv]: Use data entry to set the value. Normally only the upper byte is used.

A value of 0 [mm, vv=00, 00] is +00, and a value of 1536 [mm, vv=0C, 00] is +12 (one octave). Although it is possible to set a negative value for a timbre/track, only positive values can be set using RPN messages.

□ About system exclusive messages

Since the way in which these messages are used is left up to each manufacturer, they are mainly used to transmit and receive sound data and editing data for parameters that are unique to a particular instrument. This instrument's system exclusive message format is [F0, 42, 3n, 5D, ff, F7]

F0: exclusive status

42: Korg ID

3d: [n=0–F] global MIDI channel 1–16

5D: Future model ID

ff: function ID (type of message)

– ...

F7: end of exclusive

note To obtain a copy of the “MIDI Implementation” which includes MIDI exclusive format information, please contact your Korg distributor.

Universal system exclusive

Certain of the system exclusive messages are publicly defined for a specific use, and these are called universal system exclusive messages.

This instrument uses the following six universal system exclusive messages.

Inquiry message request [F0, 7E, nn, 06, 01, F7]

Inquiry message [F0, 7E, nn, 06, 02, (nine bytes), F7]

When an inquiry message request is received, this instrument will respond by transmitting an inquiry message that means “I am a Korg Future instrument, with system version ...”

GM system on [F0, 7E, nn, 09, 01, F7]

When this message is received in Song Play mode, this instrument will be initialized for GM playback.

Master volume [F0, 7F, nn, 04, 01, vv, mm, F7]

(vv: lower byte of the value, mm: upper byte of the value, together indicating 16384 steps)

This message is transmitted if you assign **Master Volume** as the function of the ASSIGNABLE PEDAL or as a B mode function of a REALTIME CONTROLS [1]–[4] knob and operate the controller. This will adjust the overall volume balance without changing the relative volume balance between timbres/tracks. When this message is received, the result will be the same as when the controller is operated.

Master balance [F0, 7F, nn, 04, 02, vv, mm, F7]

(vv: lower byte of the value, mm: upper byte of the value, together indicating 16384 steps, where 8192 is the default position, and lower values will move the sound toward the left)

When this is received, the overall panning will be adjusted without changing the relative panning between timbres/tracks.

Master fine tuning [F0, 7F, nn, 04, 03, vv, mm, F7]

(A value of 8192 [mm, vv=40, 00] is center, 4096 [mm, vv=20, 00] is -50 cents, and 12288 [mm, vv=60, 00] is +50 cents.)

When this is received, “Master Tune” (GLOBAL 1.1–1a) parameter will be set.

Master coarse tuning [F0, 7F, nn, 04, 04, vv, mm, F7]

(Normally only the upper byte mm is used. A value of 8192 [mm, vv=40, 00] is center, 6656 [mm, vv=34, 00] is -12 semitones, and 9728 [mm, vv=4C, 00] is +12 semitones.)

When this is received, “Key Transpose” (GLOBAL 1.1–1a) parameter will be set.

Transmitting sound settings data (Data Dump)

Data for programs, combinations, drum kits, global settings, and sequencer data can be transmitted as MIDI exclusive messages. The operation of sending this system exclusive data to an external device is called a “data dump.”

By performing a data dump, you can store this instrument's sounds and settings on an external device, or rewrite the sounds and settings of another Future instrument.

There are the following three types of data dump.

- When you use the utility manu command “Dump” (GLOBAL 2.1–1c) to dump data, various types of internal memory data will be transmitted. If this data is received by this instrument, the data will be written directly into internal memory, and it will not be necessary to perform the Write operation. (☞p.139, 140 “Transmission,” “Reception”)
- If “Exclusive” (GLOBAL 2.1–1b) setting is checked, selecting a combination in COMBI 1.1: Play will transmit data for one combination. Selecting a program in PROG 1.1: Play will transmit data for one program.
This data is the edit buffer data for the currently selected combination or program. If this data is received by this instrument, the data will be written into the edit buffer, so if you wish to save it to internal memory, you will need to perform the Write operation. The Write operation can also be performed by a MIDI exclusive Program Write Request or Combination Write Request message, in addition to the usual method of using this instrument's switches. (☞BG p.37 “Saving data”)
- If “Exclusive” (GLOBAL 2.1–1b) setting is checked, data will also be dumped in response to a Dump Request message. This data is transmitted and received on the global MIDI channel.

Editing sounds etc.

By using various MIDI exclusive data dumps, you can rewrite all programs or an individual program. By using parameter change messages, you can edit individual parameters as follows.

Parameter changes

- In Program mode, all parameters other than the program name can be edited. Performance editor parameters are included.
- In Combination mode, parameters other than the combination name can be edited.

Drum kit parameter change

- In Global mode, you can edit drum kits.

Since the other global parameters or Sequencer mode data cannot be edited, you will use data dumps to transfer this data.

The global MIDI channel is used to transmit and receive this data.

First check “Exclusive” (GLOBAL 2.1–1b), so that exclusive data can be transmitted and received. When you change modes on this instrument, a mode change message will be transmitted. When you change programs or combinations, the parameters for one program or one combination will be transmitted together with the program change. When you edit individual parameters, parameter change, or drum kit parameter change messages will be transmitted.

When these messages are received, the same editing operation will be performed as on the transmitted device.

After MIDI exclusive data has been received and processed, a Data Load Completed message will be transmitted. The control master device must not transmit the next message until this message is received (or until a sufficient interval of time has elapsed).

When you change programs or combinations, or use parameter changes to edit, the changes will affect the data in the edit buffer and will not be stored in internal memory unless you Write, so that the changes will be lost if you re-select the program or combination. The Write operation can be performed by a MIDI exclusive Program Write Request or Combination Write Request message, in addition to the usual method of using this instrument's switches. (☞BG p.37 "Saving data")

It is not necessary to write a song, but it will not be backed up when the power is turned off. If you wish to keep the data, save it on external media before turning the power. (☞BG p.40 "Saving on floppy disk")

If notes are "stuck"

If for some reason, notes become "stuck" and will not stop sounding, you can usually stop the sound by changing the mode. If notes played via MIDI are stuck, you can disconnect the MIDI cable.

MIDI transmits a message called Active Sensing [FE] at regular intervals. A device that receives this message will be aware that an external MIDI device is transmitting to it. Subsequently, if no MIDI messages are received for a certain interval of time, the receiving device will decide that the connection has been broken, and will turn off any notes that had been sounded via MIDI and reset its controller values.

Playing this instrument multi-timbrally from an external device

This instrument can be connected to an external device and played multi-timbrally in the following ways.

- MIDI messages from the external device can play a combination (8-part multi-timbral performance). You can change the overall settings (programs, levels, and effects) by using program change messages to switch combinations.
- MIDI messages from the external device can be used to play a song (16-part multi-timbral performance). Overall settings (programs, levels, effects etc.) can be changed by using a Song Select message to switch songs. (Song Select messages can be received if "MIDI Clock": GLOBAL 2.1-1a is set to **External**.)
- MIDI Clock messages from the external device can be used to make this instrument playback a song (set "MIDI Clock" to **External**, and run this instrument's sequencer). (☞"Synchronizing the playback of the KARMA function or sequencer") You can change the overall settings (programs, levels, effects) by using song select messages to switch songs.

Synchronizing the playback of the KARMA function or sequencer

The choice of whether this instrument will be the master (the controlling device) or the slave (the controlled device) is made by "MIDI Clock" (GLOBAL 2.1-1a).

Using this instrument as master and the external MIDI device as slave

Connect the MIDI OUT connector of this instrument to the MIDI IN connector of the external MIDI device. (☞p.245)

- When you set "MIDI Clock" to **Internal**, this instrument will be the master device, and will transmit MIDI timing clock messages.

KARMA function: The tempo can be controlled from this instrument. Simultaneously, the performance of the KARMA function will be transmitted via MIDI. (In Combination, Sequencer, and Song Play modes, data will be transmitted by timbres/tracks whose "Status" is **BTH**, **EXT**, or **EX2**.) An external tone generator connected to MIDI OUT will sound, and the tempo of an external sequencer can be controlled.

Sequencer: The musical data can be played back and controlled on this instrument. Simultaneously, the sequencer playback will be transmitted via MIDI from tracks whose "Status" is **BTH**, **EXT**, or **EX2**. An external tone generator connected to MIDI OUT will sound, and the tempo of an external sequencer can be controlled.

However, since exclusive data cannot be recorded on this instrument's sequencer, you can use the "Dump Sequencer" (GLOBAL 2.1-1c) utility menu command if the slave device is this instrument. If the slave device is another model, you can use this instrument's Disk mode data filer function ("Receive and Save MIDI Exclusive," "Load and Transmit MIDI Exclusive Data").

Using the external MIDI device as master and this instrument as slave

Connect this instrument's MIDI IN connector to the MIDI OUT connector of the external MIDI device. (☞p.245).

- When you set "MIDI Clock" (GLOBAL 2.1-1a) to **External**, this instrument will be the **slave** device.

KARMA function: The tempo will follow the MIDI timing clock. If you playback the external sequencer, this instrument's KARMA function will synchronize to the external timing clock. (☞BG p.88)

Even if "MIDI Clock" is **External** and this instrument is being controlled from the external device, the performance of the KARMA function will still be transmitted via MIDI. (In Combination and Sequencer modes, the KARMA function will be transmitted from timbres/tracks whose "Status" is **BTH**, **EXT**, or **EX2**.)

Sequencer: The tempo will follow the MIDI timing clock. You can playback an external sequencer, and synchronize the sequencer to the MIDI timing clock that it transmits. Even if "MIDI Clock" is set to **External** and this instrument is being controlled from an external device, musical data will be transmitted by tracks whose "Status" is **BTH**, **EXT**, or **EX2**.

Even if "MIDI Clock" is set to **External** and this instrument is being controlled from an external device, musical data will be transmitted by tracks whose "Status" is **BTH**, **EXT**, or **EX2**.

□ Recording musical data from an external device

There are two ways in which you can play back an external sequencer and record its playback on this instrument.

- Set “MIDI Clock” (GLOBAL 2.1–1a) to **Internal**, begin recording, and then start the external sequencer. With this method, the MIDI messages will be recorded without the two devices being synchronized. Since the incoming musical data will simply be recorded, this method allows the performance to be reproduced faithfully, but since measure divisions etc. will not be kept track of, this method is not suitable if you intend to edit the data later.
- If you set “MIDI Clock” (GLOBAL 2.1–1a) to **External**, the start of recording and the tempo etc. will all be under the control of the external sequencer. Since the two devices will be synchronized during the recording process, measure divisions etc. will be accurately preserved. (You will need to set the time signature before recording.) However, tempo changes during the performance will not be recorded, so you will have to insert any tempo changes later. For normal multi-track recording, you will use this method. (✎BGp.64 “Multi (multitrack recording)”)

□ Recording the MIDI output of this instrument’s controllers, KARMA function, and internal sequencer on an external sequencer/computer

If you wish to record the MIDI output of this instrument’s controllers, KARMA function, and internal sequencer on an external sequencer or computer and use this instrument as the monitoring and playback tone generator while you record, you must turn off this instrument’s Local Control setting (“Local Control On” GLOBAL 2.1–1a), and set your external sequencer/computer for echo-back (a function by which the data received at MIDI IN is retransmitted without change from MIDI OUT) so that the data from this instrument’s controllers, KARMA function and internal sequencer will not be applied in duplicate to the tone generator.

Using the REALTIME CONTROLS [1]–[4] knobs to record MIDI control changes on an external MIDI sequencer/computer

Set this instrument to **Local Control Off**. Set the external MIDI sequencer/computer to **Echo Back On**. With these settings, recording and playback will occur correctly, and the control changes will not be applied to the tone generator in duplicate.

Recording the KARMA function or RPPR function on an external MIDI sequencer/computer

When the KARMA function is **on**, playing the keyboard or operating the controllers of this instrument will operate and control the KARMA modules. The KARMA modules will operate and be controlled in the same way in response to MIDI messages received at MIDI IN. The MIDI messages generated from the KARMA modules will be transmitted from MIDI OUT according to the Local Control setting (“Local Control On” GLOBAL 2.1–1a) as described below.

In Sequencer mode, when the RPPR function is **on**, playing the keyboard will cause RPPR to operate. Similarly, the RPPR function will also operate in response to notes received on the MIDI channel of the track selected by “Track Select” (SEQ 1.1–1c). Notes will be transmitted by RPPR

from MIDI OUT according to the local control setting (“Local Control On”) as described below.

Local Control On: Notes from the KARMA function or RPPR will be transmitted from MIDI OUT. Normally you will use this setting.

Local Control Off: Notes from the KARMA function or RPPR will not be transmitted from MIDI OUT. The KARMA function or RPPR will only sound the notes (on this instrument).

Setting example 1

Record the note messages generated by the KARMA function or RPPR function on the external MIDI sequencer/computer

Turn on this instrument’s KARMA function or RPPR function. Set this instrument to **Local Control On**.

Turn **Local Control On** for this instrument.

Turn **Echo Back Off** on your external sequencer/computer.

By turning echo back off, you will prevent the KARMA function or RPPR function from performing duplicate processing on the monitored notes during recording.

During playback, turn off the KARMA function and RPPR functions of this instrument.

Setting example 2

Use the external MIDI sequencer/computer to record only the notes that trigger the KARMA function or RPPR function, and operate this instrument’s KARMA function or RPPR function for monitoring while recording, and during playback.

Turn on this instrument’s KARMA function or RPPR function. Set this instrument to **Local Control Off**. The note messages generated by the KARMA function or RPPR function will not be output. On your external MIDI sequencer/computer, turn **echo back on**. With these settings, the data will be recorded and played correctly, and the KARMA function or RPPR function will not be applied in duplicate.

□ About GM/GS/XG

This instrument supports the GM standard. It also supports the GM2 sound map (including bank select) with 256 programs and 9 drum programs provided in ROM banks G, g(1)–g(9), and g(d). (Banks g(1)–g(9) are GM2 variation programs, and g(d) contains drum programs.)

GM is a standard that ensures basic compatibility of sounds etc. between different GM-compatible instruments made by different manufacturers, but you need to be aware of the following.

- The GM System On message is received only in Song Play mode. (“GM Initialize” S.PLAY 1.1–1b)

Roland GS and Yamaha XG are specifications by which these respective manufacturers have extended the GM standard.


This instrument automatically converts the GS/XG sound maps to the GM2 sound map, and supports some of their messages. In Song Play mode etc., GS/XG music data can be played back from an external sequencer.

▲ Since this instrument does not support all of the GS/XG sound maps or messages, some data may not be played back correctly.

If you wish to play music data from an external GM/GS/XG compatible sequencer, or to load it into a pattern (multi), set “Bank Map” (GLOBAL 1.1–2a) to **GM(2)**.

Converting the GS/XG bank/program maps to the GM2 bank/program map

- When bank select/program change messages used by GS/XG are received, they will automatically be converted to the G, g(1)–g(9), g(d) bank/program map of this instrument.
- The same conversion is performed when a SMF is loaded into a song in Disk mode.

 For banks that are used in common by GS/XG, GS Reset/XG System ON will be received to automatically convert to the optimal bank/program map for each.

Support for GS/XG part mode exclusive messages

- In Song Play mode when GS/XG part mode exclusive messages Drum or MDrm 1–4 are received, bank g(d) (GM2 drum bank) will be selected for the specified track. Until this part mode state is defeated, bank select messages will no longer be received for the specified track.
- When an SMF is loaded into a song in Disk mode, any bank select messages in a track that is set to a part mode of Drum or MDrm 1–4 will be ignored, and will not be loaded.

Support for NRPN messages used in GS/XG music data

The following NRPN messages can be received to modify the sound.

Vibrato Rate	[Bn, 63, 01, Bn, 62, 08, Bn, 06, mm]
Vibrato Depth	[Bn, 63, 01, Bn, 62, 09, Bn, 06, mm]
Vibrato Delay	[Bn, 63, 01, Bn, 62, 0A, Bn, 06, mm]
Filter Cutoff	[Bn, 63, 01, Bn, 62, 20, Bn, 06, mm]
Resonance	[Bn, 63, 01, Bn, 62, 21, Bn, 06, mm]
EG Attack Time	[Bn, 63, 01, Bn, 62, 63, Bn, 06, mm]
EG Decay Time	[Bn, 63, 01, Bn, 62, 64, Bn, 06, mm]
EG Release Time	[Bn, 63, 01, Bn, 62, 66, Bn, 06, mm]
Drum Filter Cutoff	[Bn, 63, 14, Bn, 62, kk, Bn, 06, mm]
Drum Filter Resonance	[Bn, 63, 15, Bn, 62, kk, Bn, 06, mm]
Drum EG Attack Time	[Bn, 63, 16, Bn, 62, kk, Bn, 06, mm]
Drum EG Decay Time	[Bn, 63, 17, Bn, 62, kk, Bn, 06, mm]
Drum Coarse Tune	[Bn, 63, 18, Bn, 62, kk, Bn, 06, mm]
Drum Fine Tune	[Bn, 63, 19, Bn, 62, kk, Bn, 06, mm]
Drum Volume	[Bn, 63, 1A, Bn, 62, kk, Bn, 06, mm]
Drum Panpot	[Bn, 63, 1C, Bn, 62, kk, Bn, 06, mm]*
Drum Rev Send (Send2)	[Bn, 63, 1D, Bn, 62, kk, Bn, 06, mm]
Drum Cho Send (Send1)	[Bn, 63, 1E, Bn, 62, kk, Bn, 06, mm]

kk: Drum Inst No. ([0C...6C] corresponds to C0...C8)

* [00, 01...7f] corresponds to Random, L000...R127)

□ About standard MIDI files

Standard MIDI files (SMF) make it possible for different computer programs or musical instruments made by different manufacturers to exchange time-based MIDI data. Each standard MIDI file contains one song. This instrument supports **format 0 (type 0)** in which all of the MIDI data is combined into one track, and **format 1 (type 1)** in which the data is separated by track.

When a SMF is played back in Song Play mode or loaded into a song in Disk mode, the program bank that is selected will differ depending on “Bank Map” (GLOBAL 1.1–2a) setting. When playing/loading SMF data that conforms to the GM/GS/XG specifications, set “Bank Map” to **GM(2)**.

Song Play mode

- In Song Play mode, this instrument can playback SMF data directly from a disk. (The data will be played back as it is being read, and does not need to be loaded into memory.)
- If the SMF data contains a GM System On message, this instrument will be initialized for GM playback (p.116 “GM Initialize”).

Sequencer mode

In Disk mode when you convert a song into a Standard MIDI File and save it, you can choose either **format 0** or **format 1**.

- If this instrument’s song data that was saved as a format 1 SMF file is loaded into another device, the track configuration may be different than it was before being saved. This is because tracks that contain no musical data are omitted, and the remaining tracks are moved into the unused tracks. This will not affect the playback itself.
- If song data that was saved by another device as a format 1 SMF file is loaded into this instrument, the track configuration may be different than it was before being saved. This is because tracks that contain no musical data are omitted, and the remaining tracks are moved into the unused tracks. This will not affect the playback itself.

When exchanging sequence data between two Future instruments, we recommend that you save the sequence data in this instrument’s native format (“Save SEQ”). When sequence data is saved in this instrument’s native format, all of the settings and patterns unique to this instrument will be saved, which will ensure a higher level of reproducibility than when the data is saved as a Standard MIDI File (“Save to Std MIDI File”).

Various messages

A

Are you sure?

Meaning: This message asks you to confirm execution. To execute press the [F8] ("OK") key. To cancel, press the [F7] ("Cancel") key.

C

Can't calibrate

Meaning: Calibration could not be performed correctly.

Action: Try again.

Can't copy/swap double size effect

Meaning: When executing Copy or Swap for an insert effect, you attempted to place a double-size effect in IFX1 or 5, or in an IFX whose size is restricted by the current use of double-size effects.

Action: Make settings so that double-size effects are not placed in IFX1 or 5 when you execute. If a double-size effect is already being used, double-size effects cannot be used for the preceding or following IFX. Adjust the size structure as needed before you execute.

Can't open pattern

Continue ?

Meaning: When you finished recording or editing, it was not possible to allocate enough memory to open the pattern that was Put into the track. (When it must be opened automatically.) If you press the [F8] ("OK") key, the pattern data will be deleted, and the recorded or edited content will be saved. If you press the [F7] ("Cancel") key, the recorded or edited content will be discarded.

Completed

Meaning: Execution of the command ended normally.

D

Destination and source are identical

Meaning: When copying or bouncing, the same cue list, song, track or pattern was selected for both the source and destination.

Action: Select a different cue list, song, track, or pattern for the source and destination.

Destination from-measure within the limits of source

Meaning: When executing the Move Measure command for all tracks or within the same track, the specified destination measure is within the source range.

Action: Set a destination measure that is outside of the source range.

Destination is empty

Meaning: When editing, the track or pattern that was specified as the destination contains no musical data.

Action: Select a track or pattern that contains musical data.

Destination measure is empty

Meaning: The measure that was specified as the destination contains no data.

Action: Specify a destination measure that contains data.

Destination song is empty

Meaning: The song that was specified as the copy destination or bounce destination does not exist.

Action: Execute the Create New Song command in the dialog box that appears when a new song is selected before copying or bouncing.

Disk is not empty. Cleanup directory

Are you sure?

Meaning: You are attempting to delete a directory that still contains files or sub-directories. If you press the [F8] ("OK") key, the directory will be deleted along with all files or sub-directories that it contains. To cancel without deleting, press the [F7] ("Cancel") key.

Disk not formatted

Meaning: When you attempted to perform a high-level format (quick format) of media, the media had not been physically formatted yet.

Action: Execute the Disk mode utility menu command "Format" to physically format the media (full format).

E

Error in formatting medium

Meaning: An error occurred while performing a physical format (full format) or high-level format (quick format) of the media.

Action: Use other media.

Error in reading from medium

Meaning: An error occurred while reading data from a medium.

Action: Execute the reading operation once again. If the same error occurs, it is possible that the data on the disk has been damaged.

Error in writing to medium

Meaning: An error occurred while writing data to a medium. (Verify error)

Action: It is possible that the floppy disk has been physically damaged. Try another disk. Avoid using the floppy disk that produced the error.

F

File already exists

Meaning: When executing a Create Directory or File Rename operation, a directory or file of the same name already exists on the disk.

Meaning: When executing the Disk mode utility menu command "Copy" without using wild cards, the copy destination contained a file of the same name as the copy source.

Action: Either delete the existing directory or file, or specify a different filename.

File is read-only protected

Meaning: You attempted to write to a file or to delete a file that had a read-only attribute.

Meaning: You attempted to save a file to a floppy disk that contained a read-only file of the same name.

Action: Save the file with a different name.

File unavailable

Meaning: You attempted to load or open a file whose format was incorrect.

File/path not found

Meaning: When executing the Disk mode utility menu command "Delete," the specified file did not exist.

Meaning: When executing the Disk mode utility menu command "Copy" and you used a wild card to specify the copy file name, the specified file was not found. Alternatively, the length of the copy source path name exceeded 76 characters.

Meaning: In Disk mode when you used the [F6] ("Open") key to open a directory, the path length including the selected directory name exceeded 76 characters.

Action: Check the file or directory.

I**Illegal file description**

Meaning: The filename that you specified when saving a file or creating a directory contained invalid characters.

Action: Change the filename you are specifying. Filenames not permitted by MS-DOS cannot be used as a filename.

Illegal SMF data

Meaning: You attempted to load a file that was not a Standard MIDI File.

Illegal SMF division

Meaning: You attempted to load a Standard MIDI File that was timecode-based.

Illegal SMF format

Meaning: You attempted to load a Standard MIDI File of a format other than 0 or 1.

M**Master Track can't be recorded alone**

Meaning: When realtime-recording a single track, you attempted to begin recording with the master track as the current track.

Action: Begin recording with a track 1–16.

Measure size over limit

Meaning: When loading a Standard MIDI File, the number of events in a measure exceeded the maximum (approximately 10,000 events).

Meaning: The attempted edit operation would cause the maximum number of events in a measure (approximately 10,000) to be exceeded.

Action: Use event editing etc. to delete unwanted data.

Measure number over limit

Meaning: The attempted edit operation would cause the track length to exceed 999 measures.

Action: Delete unnecessary measures.

Medium changed

Meaning: When executing the Disk mode Utility command "Copy," the media was exchanged or ejected, and it was not possible to copy between separate media on the same drive.

Medium write protected

Meaning: The floppy disk or other media to which you attempted to save is write-protected.

Action: Turn off write protect on the floppy disk and execute the command once again.

Memory full

Meaning: In Sequencer mode when editing a song, track or pattern, the total data of all songs has used up all of the sequence data memory, and further editing is not possible.

Action: Delete other song data etc. to increase the amount of free memory.

Meaning: While realtime recording in Sequencer mode, there is no more free memory to accommodate the recorded data, so recording has been forcibly halted.

Action: Delete other song data etc. to increase the amount of free memory.

Meaning: In Disk mode when loading a Standard MIDI File, the sequence memory has filled up.

Action: Delete song data. (If necessary, save the data before deleting it.)

Memory overflow

Meaning: In Disk mode when using "Save Exclusive" to receive exclusive data, the sequence memory has filled up.

Action: If you are receiving two or more sets of exclusive data, transmit them separately to this instrument.

Memory protected

Meaning: The internal program, combination, song, or drum kit is protected.

Action: In Global mode, turn off write-protect, and execute the write or load operation once again.

N**No data**

Meaning: When loading a Standard MIDI File, the file contained no events.

No medium

Meaning: When executing a command in Disk mode, no floppy disk was inserted in the drive.

Action: Insert media such as a floppy disk.

No recording track specified

Meaning: When performing realtime multi-track recording, you attempted to begin recording with no tracks set to REC.

Action: Set the desired tracks for recording to REC.

No space available on medium

Meaning: When you attempted to save a file or create a director, the floppy disk contained no free space.

Action: Either delete an existing file, or exchange the floppy disk with one that has sufficient free space.

Not enough memory

Meaning: When starting realtime recording in Sequencer mode, the minimum amount of free memory (such as memory for the BAR events up to the recording start location) could not be allocated.

Action: Delete other song data etc. to increase the amount of free memory.

Meaning: When executing "Save Exclusive" in Disk mode, there was no remaining sequence memory. Alternatively, when executing "Load Exclusive," sufficient free sequence memory could not be allocated.

Action: Delete song data. (If necessary, save the data before deleting it.)

Not enough memory to load

Meaning: When you attempted to load a .SNG file in Disk mode, there was insufficient free memory.

Action: Delete other song data etc. to increase the amount of free memory.

Not enough memory to open pattern

Meaning: There was insufficient sequencer memory to open the pattern, so editing is not possible.

Action: Either delete unwanted data such as a song, track, or pattern, or do not open the pattern.

P

Pattern conflicts with events

Meaning: It was not possible to execute the Bounce operation because one of the tracks contained a pattern, and the same measure of the other track contained events or a pattern.

Action: Open the pattern.

Pattern exists across destination to-end-of-measure or source from-measure

Meaning: When moving a measure, the edit operation could not be executed because a pattern had been put in the destination end measure or the source start measure, and had not been opened.

Action: Open the pattern.

Pattern exists in destination or source track

Open pattern ?

Meaning: A pattern has been placed in the track that you specified as a destination or source for editing. If you wish to open the pattern and execute (the events of the pattern will be copied), press the [F8] ("OK") key. If you wish to execute without opening the pattern, press the [F7] ("Cancel") key.

Pattern used in song

Continue ?

Meaning: When editing, the specified pattern is used by RPPR. If you wish to execute, press the [F8] ("OK") key. If you decide not to execute, press the [F7] ("Cancel") key.

R

Root directory is full

Meaning: You attempted to create a file or directory in the root directory of the floppy disk, but this would exceed the maximum number of root directory entries.

Action: Either delete an existing file or directory, or exchange floppy disk.

S

Source is empty

Meaning: No data exists in the pattern that you specified as the source.

Action: Specify a pattern that contains musical data.

T

There is no readable data

Meaning: Either the file size is 0 or the file does not contain data that can be accessed by the load or open operation. Alternatively, the data is damaged etc., and cannot be loaded or accessed.

This file is already loaded

Meaning: When loading a divided .PCG file, you attempted to load a file that had already been loaded.

Action: Load the .PCG files that have not yet been loaded.

U

Unable to create directory

Meaning: You attempted to create a directory that would exceed the maximum pathname length (76 characters for the full pathname).

Unable to save file

Meaning: When executing the Disk mode utility menu command "Copy," the copy destination path length exceeded 76 characters.

Meaning: When saving a file in Disk mode, the save destination path exceeded 76 characters.

Y

You can't undo last operation

Are you sure ?

Meaning: Once you enter event editing (even if you leave event editing without actually editing an event), it will no longer be possible to execute a Compare of the previous edit. If you wish to enter event editing, press the [F8] ("OK") key. To cancel, press the [F7] ("Cancel") key.

You can't undo this operation**Are you sure ?**

Meaning: When you exit recording or event editing in Sequencer mode, the memory area for Undo (Compare function) is not allocated. If you wish to keep the data that was just recorded or edited, press the [F8] ("OK") key. If you wish to return to the previous data (i.e., to delete the data that was just recorded or edited), press the [F7] ("Cancel") key.

Meaning: When editing in Sequencer mode, memory area for Undo (Compare function) cannot be allocated. If you wish to execute the edit, press the [F8] ("OK") key. (It will not be possible to return to the state before editing.) If you decide not to execute the edit, press the [F7] ("Cancel") key.

Action: In order to allocate memory area for Undo (Compare function), delete unneeded data such as songs, tracks, or patterns. We recommend that you save data to floppy disk before you execute the edit operation.

Data compatibility

This instrument can load and convert .PCG files and .SNG files from a TRITON keyboard model or the TRITON-Rack. However, please be aware of the following limitations and notes.

Arpeggio Pattern parameters of the TRITON keyboard model and TRITON-Rack

Since this instrument does not have an arpeggiator, the arpeggiator parameters of the program, combination, or song will be ignored when you load a .PCG/.SNG file from a TRITON keyboard model or the TRITON-Rack.

Also, the parameters related to the KARMA function will be initialized when such data is loaded.

When you use Disk mode [F6] (“Open”) key to open a .PCG file from a TRITON keyboard model or the TRITON-Rack, the Arpeggio Pattern directory will not be displayed even if it exists.

Parameters that are valid on the TRITON-Rack and invalid on this instrument

1. Program mode “Audition Riff Number” and “Audition Riff Transpose” settings

This will be saved as internal data, but will be ignored.

2. Program, Combination, and Multi modes REALTIME CONTROLS [SELECT] C-mode settings

A or B modes will be used even if C-mode is selected.

3. Combination and Multi modes “Program Select” bank EXB-A–EXB-H settings

Since this instrument does not have the corresponding program banks, it will not sound or operate correctly.

4. Program mode OSC 1 Drum Kit “073 (E–D)–152 (GM)” settings

Since this instrument does not have the corresponding drum kit numbers, it will not sound or operate correctly.

A table showing the Program, Combination, and Drum Kit bank/number structure of the TRITON-Rack and of this instrument is given at the right.

TRITON-Rack data for banks/numbers that do not exist on this instrument will not operate or sound correctly on this instrument. Please be aware of this when loading files from the TRITON-Rack into this instrument.

5. Global mode parameters

- “Auto Arp. Program” is used as the “Auto KARMA Program” parameter.
- “Auto Arp. Combi” is used as the “Auto KARMA Combi” parameter.
- The Audio In parameters will not be loaded.

Program

TRITON-Rack	This instrument
INT-A	A
INT-B	B
INT-C	C
INT-D	D
INT-E	E
INT-F	F
G, g(1)...g(d)	G, g(1)...g(d)
EXT-A	–
EXT-B	–
EXT-C	–
EXT-D	–
EXT-E	–
EXT-F	–
EXT-G	–
EXT-H	–

Combination

TRITON-Rack	This instrument
INT-A	A
INT-B	B
INT-C	C
INT-D	D
INT-E	–
–	F
EXT-A	–
EXT-B	–
EXT-C	–
EXT-D	–
EXT-E	–
EXT-F	–
EXT-G	–
EXT-H	–

Drum Kit

TRITON-Rack	This instrument
000...015(I-A/B)	00...15(A/B)
016...031(E-A)	16...31(C)
032...047(E-B)	32...47(D)
048...063(E-C)	48...63(User)
064...079(E-D)	-
080...095(E-E)	-
096...111(E-F)	-
112...127(E-G)	-
128...143(E-H)	-
144...152(GM)	64...72(GM)

Parameters that are valid on TRITON keyboard models and invalid on this instrument

1. TRITON keyboard model Global mode parameters

- “PC I/F Baud Rate” and “Beep” are saved as internal data, but will be ignored.
- If “MIDI Clock” is set to **External PCI/F**, it will function as **External**.
- “Auto Arpeggiator Program” is used as the “Auto KARMA Program” parameter.
- “Auto Arpeggiator Combination” is used as the “Auto KARMA Combi” parameter.
- Auto Input parameters will not be loaded.

KARMA-MUSIC WORKSTATION MIDI IMPLEMENTATION

Oct.26,2000

Consult your local Korg dealer for more information on MIDI System Exclusive implementation.

1-1 TRANSMITTED DATA

1-1 CHANNEL MESSAGES

Status	Second	Third	[D]	Description	[H]:Hex, [D]:Decimal	ENR
Bn	8k (kk)	40	(64)	Note Off	(Key Off)	*1 A
Bn	9k (kk)	vv	(vv)	Note On (vv)=1-127	(Key On) data	*1 A
Bn	00 (00)	mm	(mm)	Bank Select (MSB)	(BANK Keys Prog/Combi change)	*2 C
Bn	01 (01)	mm	(mm)	Modulation1	Joy Stick +Y	C
Bn	02 (02)	vv	(vv)	Modulation2	Joy Stick -Y	C
Bn	04 (04)	vv	(vv)	Foot Pedal	A.Pd1 = Foot Pedal	C
Bn	05 (05)	vv	(vv)	Portamento Time	A.Pd1/Knob-B = Porta.Time (S Chg)	C
Bn	06 (06)	vv	(vv)	Volume EX Panpot	A.Pd1/Knob-B = Volume (S/C Chg)	C
Bn	0A (0A)	vv	(vv)	Panpot	A.Pd1/Knob-B = Pan (S Chg)	C
Bn	0B (0B)	vv	(vv)	Expression	A.Pd1/Knob-B = Expression	C
Bn	0C (0C)	vv	(vv)	Effect Control 1	A.Pd1/Knob-B = FX Control1	C
Bn	0E (0E)	vv	(vv)	Effect Control 2	A.Pd1/Knob-B = FX Control2	C
Bn	0E (0E)	vv	(vv)	Multi Purpose Ctrl1	(KARMA ON/OFF, A.SW=KARMA/Off) *3	C
Bn	10 (10)	vv	(vv)	Multi Purpose Ctrl2	(Knob-B = Knob Mod1)	C
Bn	11 (11)	vv	(vv)	Multi Purpose Ctrl3	(Value Slider)	C
Bn	12 (12)	vv	(vv)	Multi Purpose Ctrl4	(Knob-B = Knob Mod2)	C
Bn	13 (13)	vv	(vv)		(Knob-B = Knob Mod3)	C
Bn	15 (15)	vv	(vv)		(Knob-B = Knob Mod4)	C
Bn	16 (16)	vv	(vv)		(KARMA Knob2)	*3 C
Bn	17 (17)	vv	(vv)		(KARMA Knob3)	*3 C
Bn	18 (18)	vv	(vv)		(KARMA Knob4)	*3 C
Bn	19 (19)	vv	(vv)		(KARMA Knob5)	*3 C
Bn	1A (2A)	vv	(vv)		(KARMA Knob6)	*3 C
Bn	1B (2B)	vv	(vv)		(KARMA Knob7)	*3 C
Bn	1C (2C)	vv	(vv)		(KARMA SCENE)	*3 C
Bn	1D (2D)	vv	(vv)		(KARMA LATCH, A.SW=KARMA Latch)	*3 C
Bn	1E (2E)	vv	(vv)		(BANK Keys, Prog/Combi change)	*2 C
Bn	1F (31)	bb	(bb)	Bank Select (LSB)	(Damp)	PB
Bn	40 (64)	vv	(vv)	Hold1	(SW1/SW2/A.SW = Porta.SW, S Chg)	C
Bn	41 (65)	00/7F	(00/127)	Portamento Off/On	(A.SW = Sostenuto)	C
Bn	42 (66)	00/7F	(00/127)	Sostenuto Off/On	(A.SW = Sustain)	C
Bn	43 (67)	vv	(vv)	Sound Controller 1	(Knob-B = F/A Sustain)	C
Bn	44 (68)	vv	(vv)	Sound Controller 2	(Knob-2A/Knob-B = Resonance/HPF)	C
Bn	47 (71)	vv	(vv)	Sound Controller 3	(Knob-4A/Knob-B = F/A Release)	C
Bn	48 (72)	vv	(vv)	Sound Controller 4	(Knob-B = F/A Attack)	C
Bn	4A (74)	vv	(vv)	Sound Controller 5	(Knob-1A/Knob-B = Lpf Cutoff)	C
Bn	4B (75)	vv	(vv)	Sound Controller 6	(Knob-B = Pitch LFO1 Spd)	C
Bn	4C (76)	vv	(vv)	Sound Controller 7	(Knob-B = Pitch LFO1 Dep)	C
Bn	4D (77)	vv	(vv)	Sound Controller 8	(Knob-B = Pitch LFO1 Dly)	C
Bn	4E (78)	vv	(vv)	Sound Controller 9	(Knob-3A/Knob-B = Filter EG Int)	C
Bn	4F (79)	vv	(vv)	Sound Controller 10	(Knob-B = SW1 Mod)	C
Bn	50 (80)	00/7F	(00/127)	Multi Purpose Ctrl15	(SW1/Knob-B = SW2 Mod)	C
Bn	51 (81)	00/7F	(00/127)	Multi Purpose Ctrl16	(SW2/Knob-B = SW2 Mod)	C
Bn	52 (82)	00/7F	(00/127)	Multi Purpose Ctrl17	(Knob-B = MIDI CCH83)	C
Bn	53 (83)	00/7F	(00/127)	Multi Purpose Ctrl18	(KARMA SW1)	*3 C
Bn	55 (85)	00/7F	(00/127)		(KARMA SW2)	*3 C
Bn	56 (86)	00/7F	(00/127)		(CHORD TRIGGER1)	*3 C
Bn	57 (87)	00/7F	(00/127)		(CHORD TRIGGER2)	*3 C
Bn	58 (88)	00/7F	(00/127)		(CHORD TRIGGER3)	*3 C
Bn	59 (89)	00/7F	(00/127)		(CHORD TRIGGER4)	*3 C
Bn	5A (90)	00/7F	(00/127)		(A.Pd1/Knob-B = MFX Send2, S Chg)	C
Bn	5B (91)	vv	(vv)	Effect 1 Depth	(All Insert FX Off/On)	C
Bn	5D (93)	vv	(vv)	Effect 2 Depth	(A.Pd1/Knob-B = MFX Send1, S Chg)	C
Bn	5E (94)	vv	(vv)	Effect 3 Depth	(Master FX1 Off/On)	C
Bn	5F (95)	00/7F	(00/127)	Effect 4 Depth	(Master FX2 Off/On)	C
Bn	60 (96)	00/7F	(00/127)	Effect 5 Depth	(Master FX3 Off/On)	C
Bn	6C (cc)	vv	(vv)	Control (cc)=0-95	(KARMA RTC = MIDI CCH00-95)	*4 C
Bn	6D (cd)	vv	(vv)	Control (cc)=0-95	(KARMA TXCC = MIDI CCH00-95)	*4 C
Bn	6E (ce)	vv	(vv)	Control (cc)=0-95	(KARMA GE data)	C
Bn	6F (cf)	vv	(vv)	Control (cc)=0-101	(Sequence data)	C
Bn	CC (cc)	vv	(vv)	Program Change	(Prog/Combi change)	*2 P
Bn	PP (pp)	--	--	Channel Pressure	(Aftertouch)	Q
Bn	VB (vb)	vv	(vv)	Bank Change	(Joy Stick X)	T
Bn	bd (bd)	bb	(bb)	Bank Change	(Joy Stick X)	T

A.Pd1: Assignable Pedal
A.SW: Assignable Switch
S Chg: Transmitted when change a Song No. (Seq. mode). (Status = EXT.EX2,BTH)
C/S Chg: Transmitted when change a Combination or Song No. (Seq. mode). (Status = EXT.EX2,BTH)
n: MIDI Channel No. (0 - 15) *****Usually Global Channel.
9: Always Global Channel No. (0 - 15)

ENR = A: Always Enabled
C: Enabled when Enable Program Change in Global mode is checked
P: Enabled when Enable Program Change and Bank Change in Global mode is checked
PB: Enabled when Enable After Touch in Global mode is checked
T: Enabled when Sequencer is playing(transmit), recording (receive)
Q: Enabled when Sequencer is playing(transmit), recording (receive)

*1: Kk = 24 - 108 : Keyboard (61keys + Transpose)
= 00 - 127 : Sequencer and KARMA-Module

*2: Program Bank#00 - 127 : Bank#00 - 127 : MIDI_Out[Hex] (Bank Map is KORG) (Bank Map is GM(2))
Bank#00 - 127 : Bank#00 - 127 : mm,bb,pp = 00,00, 00 - 7F, 00 - 7F
C000 - 127 : C 000 - 127 : 00,02, 3F,02, 00 - 7F, 00 - 7F
D000 - 127 : D 000 - 127 : 00,03, 3F,03, 00 - 7F, 00 - 7F
E000 - 127 : E 000 - 127 : 00,04, 3F,04, 00 - 7F, 00 - 7F
F000 - 127 : F 000 - 127 : 00,05, 3F,05, 00 - 7F, 00 - 7F
g(11)-(9) : G001 - 128 : : 79,00, 00 - 7F, 79,00, 00 - 7F
g(d) : 001 - 128 : : 78,00, 00 - 7F, 78,00, 00 - 7F

*3: When "Default Setting" CCH is assigned to the KARMA RTC(Realtime Controls) in Global mode.
KARMA Realtime Controls "Default Setting":
ON/OFF : CCH14
Knob1 : CCH22
Knob2 : CCH23
Knob3 : CCH24
Knob4 : CCH25
Knob5 : CCH26
Knob6 : CCH27
Knob7 : CCH28
Knob8 : CCH29
SCENE : CCH30
LATCH : CCH31
SW1 : CCH85
SW2 : CCH86
CHORD TRIGGER1 : CCH87
CHORD TRIGGER2 : CCH88
CHORD TRIGGER3 : CCH89
CHORD TRIGGER4 : CCH90

n: When in Program/Combination mode, Global channel.
When in Sequencer/Song Play mode, current selected track's channel.
*4: Transmitted when turn KARMA On.
Transmitted when change a GR. (KARMA ON/OFF = On)
Transmitted when change a Program, Combination or Song No. (Seq. mode) (KARMA ON/OFF = On)

1-2 SYSTEM COMMON MESSAGES

Status	Second	[H]	[D]	Third	[D]	Description	[H]:Hex, [D]:Decimal
F2	ss (ss)	tt	(tt)			Song Position Pointer ss : Least significant [LSB] tt : Most significant [MSB]	*4
F3	ss (ss)					Song Select (Song or Cue list is selected) ss : Song (0-127)/Cue List(0-19) No.	*4

Transmits Song Position Pointer message when in Sequencer and Song Play mode (Internal Clock)
Transmits Song Select message when in Sequencer mode (Internal Clock)
*4: For example, if time signature is 4/4 or 8/8, tt.ss = 00.10 means one measure.

1-3 SYSTEM REALTIME MESSAGES

Status[Hex]	Description	(Transmitted when ...)
F8	Timing Clock	(Always in Prog/Combi/Seq/Song Play/Global mode) *
FA	Start	(START in Seq/Song Play mode) *
FB	Continue	(Continue START in Seq/Song Play mode) *
FC	Stop	(STOP in Seq/Song Play mode) *
FE	Active Sensing	(Always)

* Transmits these messages when MIDI Clock in Global mode is Internal.

1-4 SYSTEM EXCLUSIVE

1-4-1 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES (NON REALTIME)
[F0,7F,09,06,02,42,5D,00,05,00,nn,00,vv,00,F7] 3rd byte 9 : Global Channel
6th byte 42 : KORG ID
7th byte 5D : KARMA - Music Workstation ID
9th byte 05 : KARMA - Music Workstation Member
11th byte nn : System No. (01 -)
13th byte vv : System Version (01 -)

1-4-2 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES (REALTIME)
Master Volume
[F0,7F,09,04,01,vv,nn,F7]
3rd byte 9 : Global Channel
6th byte vv : Value[LSB]
7th byte mm,vv = 00,00 - 7F,7F : Min - Max

2. RECOGNIZED RECEIVE DATA
2-1 CHANNEL MESSAGES

Status	[Hex]	[H]	[D]	[I]	[J]	[K]	[L]	[M]	[N]	[O]	[P]	[Q]	[R]	[S]	[T]	[U]	[V]	[W]	[X]	[Y]	[Z]	[AA]	[AB]	[AC]	[AD]	[AE]	[AF]	[AG]	[AH]	[AI]	[AJ]	[AK]	[AL]	[AM]	[AN]	[AO]	[AP]	[AQ]	[AR]	[AS]	[AT]	[AU]	[AV]	[AW]	[AX]	[AY]	[AZ]	[BA]	[BB]	[BC]	[BD]	[BE]	[BF]	[BG]	[BH]	[BI]	[BJ]	[BK]	[BL]	[BM]	[BN]	[BO]	[BP]	[BQ]	[BR]	[BS]	[BT]	[BU]	[BV]	[BW]	[BX]	[BY]	[BZ]	[CA]	[CB]	[CC]	[CD]	[CE]	[CF]	[CG]	[CH]	[CI]	[CJ]	[CK]	[CL]	[CM]	[CN]	[CO]	[CP]	[CQ]	[CR]	[CS]	[CT]	[CU]	[CV]	[CW]	[CX]	[CY]	[CZ]	[DA]	[DB]	[DC]	[DD]	[DE]	[DF]	[DG]	[DH]	[DI]	[DJ]	[DK]	[DL]	[DM]	[DN]	[DO]	[DP]	[DQ]	[DR]	[DS]	[DT]	[DU]	[DV]	[DW]	[DX]	[DY]	[DZ]	[EA]	[EB]	[EC]	[ED]	[EE]	[EF]	[EG]	[EH]	[EI]	[EJ]	[EK]	[EL]	[EM]	[EN]	[EO]	[EP]	[EQ]	[ER]	[ES]	[ET]	[EU]	[EV]	[EW]	[EX]	[EY]	[EZ]	[FA]	[FB]	[FC]	[FD]	[FE]	[FF]	[FG]	[FH]	[FI]	[FJ]	[FK]	[FL]	[FM]	[FN]	[FO]	[FP]	[FQ]	[FR]	[FS]	[FT]	[FU]	[FV]	[FW]	[FX]	[FY]	[FZ]	[GA]	[GB]	[GC]	[GD]	[GE]	[GF]	[GG]	[GH]	[GI]	[GJ]	[GK]	[GL]	[GM]	[GN]	[GO]	[GP]	[GQ]	[GR]	[GS]	[GT]	[GU]	[GV]	[GW]	[GX]	[GY]	[GZ]	[HA]	[HB]	[HC]	[HD]	[HE]	[HF]	[HG]	[HH]	[HI]	[HJ]	[HK]	[HL]	[HM]	[HN]	[HO]	[HP]	[HQ]	[HR]	[HS]	[HT]	[HU]	[HV]	[HW]	[HX]	[HY]	[HZ]	[IA]	[IB]	[IC]	[ID]	[IE]	[IF]	[IG]	[IH]	[II]	[IJ]	[IK]	[IL]	[IM]	[IN]	[IO]	[IP]	[IQ]	[IR]	[IS]	[IT]	[IU]	[IV]	[IW]	[IX]	[IY]	[IZ]	[JA]	[JB]	[JC]	[JD]	[JE]	[JF]	[JG]	[JH]	[JI]	[JJ]	[JK]	[JL]	[JM]	[JN]	[JO]	[JP]	[JQ]	[JR]	[JS]	[JT]	[JU]	[JV]	[JW]	[JX]	[JY]	[JZ]	[KA]	[KB]	[KC]	[KD]	[KE]	[KF]	[KG]	[KH]	[KI]	[KJ]	[KK]	[KL]	[KM]	[KN]	[KO]	[KP]	[KQ]	[KR]	[KS]	[KT]	[KU]	[KV]	[KW]	[KX]	[KY]	[KZ]	[LA]	[LB]	[LC]	[LD]	[LE]	[LF]	[LG]	[LH]	[LI]	[LJ]	[LK]	[LL]	[LM]	[LN]	[LO]	[LP]	[LQ]	[LR]	[LS]	[LT]	[LU]	[LV]	[LW]	[LX]	[LY]	[LZ]	[MA]	[MB]	[MC]	[MD]	[ME]	[MF]	[MG]	[MH]	[MI]	[MJ]	[MK]	[ML]	[MN]	[MO]	[MP]	[MQ]	[MR]	[MS]	[MT]	[MU]	[MV]	[MW]	[MX]	[MY]	[MZ]	[NA]	[NB]	[NC]	[ND]	[NE]	[NF]	[NG]	[NH]	[NI]	[NJ]	[NK]	[NL]	[NM]	[NO]	[NP]	[NQ]	[NR]	[NS]	[NT]	[NU]	[NV]	[NW]	[NX]	[NY]	[NZ]	[OA]	[OB]	[OC]	[OD]	[OE]	[OF]	[OG]	[OH]	[OI]	[OJ]	[OK]	[OL]	[OM]	[ON]	[OO]	[OP]	[OQ]	[OR]	[OS]	[OT]	[OU]	[OV]	[OW]	[OX]	[OY]	[OZ]	[PA]	[PB]	[PC]	[PD]	[PE]	[PF]	[PG]	[PH]	[PI]	[PJ]	[PK]	[PL]	[PM]	[PN]	[PO]	[PP]	[PQ]	[PR]	[PS]	[PT]	[PU]	[PV]	[PW]	[PX]	[PY]	[PZ]	[QA]	[QB]	[QC]	[QD]	[QE]	[QF]	[QG]	[QH]	[QI]	[QJ]	[QK]	[QL]	[QM]	[QN]	[QO]	[QP]	[QQ]	[QR]	[QS]	[QT]	[QU]	[QV]	[QW]	[QX]	[QY]	[QZ]	[RA]	[RB]	[RC]	[RD]	[RE]	[RF]	[RG]	[RH]	[RI]	[RJ]	[RK]	[RL]	[RM]	[RN]	[RO]	[RP]	[RQ]	[RR]	[RS]	[RT]	[RU]	[RV]	[RW]	[RX]	[RY]	[RZ]	[SA]	[SB]	[SC]	[SD]	[SE]	[SF]	[SG]	[SH]	[SI]	[SJ]	[SK]	[SL]	[SM]	[SN]	[SO]	[SP]	[SQ]	[SR]	[SS]	[ST]	[SU]	[SV]	[SW]	[SX]	[SY]	[SZ]	[TA]	[TB]	[TC]	[TD]	[TE]	[TF]	[TG]	[TH]	[TI]	[TJ]	[TK]	[TL]	[TM]	[TN]	[TO]	[TP]	[TQ]	[TR]	[TS]	[TU]	[TV]	[TW]	[TX]	[TY]	[TZ]	[UA]	[UB]	[UC]	[UD]	[UE]	[UF]	[UG]	[UH]	[UI]	[UJ]	[UK]	[UL]	[UM]	[UN]	[UO]	[UP]	[UQ]	[UR]	[US]	[UT]	[UU]	[UV]	[UW]	[UX]	[UY]	[UZ]	[VA]	[VB]	[VC]	[VD]	[VE]	[VF]	[VG]	[VH]	[VI]	[VJ]	[VK]	[VL]	[VM]	[VN]	[VO]	[VP]	[VQ]	[VR]	[VS]	[VT]	[VU]	[VV]	[VW]	[VX]	[VY]	[VZ]	[WA]	[WB]	[WC]	[WD]	[WE]	[WF]	[WG]	[WH]	[WI]	[WJ]	[WK]	[WL]	[WM]	[WN]	[WO]	[WP]	[WQ]	[WR]	[WS]	[WT]	[WU]	[WV]	[WW]	[WX]	[WY]	[WZ]	[XA]	[XB]	[XC]	[XD]	[XE]	[XF]	[XG]	[XH]	[XI]	[XJ]	[XK]	[XL]	[XM]	[XN]	[XO]	[XP]	[XQ]	[XR]	[XS]	[XT]	[XU]	[XV]	[XW]	[XX]	[XY]	[XZ]	[YA]	[YB]	[YC]	[YD]	[YE]	[YF]	[YG]	[YH]	[YI]	[YJ]	[YK]	[YL]	[YM]	[YN]	[YO]	[YP]	[YQ]	[YR]	[YS]	[YT]	[YU]	[YV]	[YW]	[YX]	[YY]	[YZ]	[ZA]	[ZB]	[ZC]	[ZD]	[ZE]	[ZF]	[ZG]	[ZH]	[ZI]	[ZJ]	[ZK]	[ZL]	[ZM]	[ZN]	[ZO]	[ZP]	[ZQ]	[ZR]	[ZS]	[ZT]	[ZU]	[ZV]	[ZW]	[ZX]	[ZY]	[ZZ]
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*1: When Bank Map in Global mode is KORG;
MIDI In [Hex] Program
mm,bb,pp = 00,00,00 - 7F : Bank A
000 - 127 : Bank A 000 - 127
000 - 127 : B
000 - 127 : C
000 - 127 : D
000 - 127 : E
000 - 127 : F
000 - 127 : G
79,01-09,00 - 7F : 9(1)-9(9) 001 - 128
78,00,00 - 7F : 9(d) 001 - 128
38,00,00 - 7F : G 001 - 128
3E,00,00 - 7F : 9(d) 001 - 128

When Bank Map in Global mode is GK(2);
MIDI In [Hex] Program Combination
mm,bb,pp = 3F,00,00 - 7F : Bank A
3F,01,00 - 7F : B
3F,02,00 - 7F : C
3F,03,00 - 7F : D
3F,04,00 - 7F : E
3F,05,00 - 7F : F
79,00,00 - 7F : G
79,01-09,00 - 7F : 9(1)-9(9) 001 - 128
78,00,00 - 7F : 9(d) 001 - 128
00,00,00 - 7F : G001 - 128
3E,00,00 - 7F : G001 - 128
3F,7F,00 - 7F : Mute (KORG MUTE)
(XG) 00,01 - : Assign correspond program in G, 9(1) - 9(9)
(GS) 01,00 - : Assign correspond program in G, 9(1) - 9(9)

*2: n : When in Program mode, Global channel
When in Combination/Sequencer/Song Play mode, each IFX's channel.

*3: tt.ss = 01.08 : Vibrato Rate
tt.ss = 01.09 : Vibrato Depth
tt.ss = 01.0A : Vibrato Delay
tt.ss = 01.20 : Filter Cutoff
tt.ss = 01.21 : Filter Resonance
tt.ss = 01.63 : EG Attack Time
tt.ss = 01.64 : EG Release Time
tt.ss = 01.66 : EG Release Time
tt.ss = 14.kk : Drum Filter Cutoff*
tt.ss = 15.kk : Drum Filter Resonance*
tt.ss = 16.kk : Drum EG Attack Time*
tt.ss = 17.kk : Drum EG Decay Time*
tt.ss = 18.kk : Drum Coarse Tune*
tt.ss = 19.kk : Drum Fine Tune*
tt.ss = 1A.kk : Drum Volume*
tt.ss = 1C.kk : Drum Panpot*
tt.ss = 1D.kk : Drum Rev Send(Send2)*
tt.ss = 1E.kk : Drum Cho Send(Send1)*

* Only valid when Part Mode is Drum, Mdrml - Mdrml.
kk : Drum Inst No. (0C - 6C = C0 - C8)
Data Entry LSB value has no effect.

*4: r = 0 : Pitch Bend Sensitivity (Bend Range)
= 1 : Fine Tune(Detune)
= 2 : Coarse Tune(Transpose)
For drum program, both of Fine Tune and Coarse Tune affect to Detune.
Data Entry LSB value has no effect for Pitch Bend Sensitivity and Coarse Tune.

*5: When "Default Setting" CCH is assigned to the KARMA RTC(Realtime Controls) in Global mode .
n : When in Program/Combination mode, Global channel.
When in Sequencer/Song Play mode, current selected track's channel.

AMS : Alternate Modulation Source
FX Dmod Src : Effect Dynamic Modulation Source
n : MIDI Channel No. (0 - 15) : Usually Global Channel.
When in Combination/Sequencer/Song Play mode, each timbre s/track's channel.(Status is INT or RTH)
g : KARMA module Input in Combination/Sequencer/Song Play mode, Input Channel of each KARMA module.
x : Always Global Channel No. (0 - 15)
z : Random
ENA : Same as Transmitted data

2-2 SYSTEM COMMON MESSAGES

Status [Hex]	Second [H] [D]	Third [H] [D]	Description (Use for)
F2	ss (ss)	tt (tt)	Song Position Pointer (Location in Seg & KARMA Control) ss:Least significant [LSB] tt:Mostsignificant [MSB]
F3	ss (ss)		Song Select (Song or Cue List select) ss : Song(0-127)/Cue List(0-19) No.

Receive Song Position Pointer when in Program/Combination/Sequencer mode (External Clock)
Receive Song Select when in Sequencer mode (External Clock)

When in the Cue List page (Seq mode SE0 2.1).
Song Position Pointer and Song Select respond to Location and No. of Cue List.

2-3 SYSTEM REALTIME MESSAGES

Status[Hex]	Description (Use for.....)
F8	Timing Clock (Tempo, AMS & FX Dmod Src) *
FA	Start (Seq Start & KARMA Control) *
FB	Continue (Seq Continue start & KARMA Control) *
FC	Stop (Seq Stop & KARMA Control) *
FE	Active Sensing (MIDI Connect check)

* Receive when MIDI Clock in Global mode is External.

2-4 SYSTEM EXCLUSIVE

2-4-1 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES (NON REALTIME)

DEVICE INQUIRY (When received this message, transmits INQUIRY MESSAGE REPLY)
[F0,7E,nn,06,01,F7] 3rd bytenn : Channel = 0 - F : Global Channel
= 7F : Any Channel

GM System On (Receive when in Song Play mode)
[F0,7E,nn,09,01,F7] 3rd bytenn : Channel = 0 - F : Global Channel
= 7F : Any Channel

2-4-2 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES (REALTIME)

Master Volume
[F0,7F,09,04,01,vv,mm,F7] 3rd Byte g : Global Channel
6th Byte vv : Value(LSB)
7th Byte mm : Value(MSB)
mm,vv = 00,00 - 7F,7F : Min - Max

Master Balance
[F0,7F,09,04,02,vv,mm,F7] 3rd Byte g : Global Channel
6th Byte vv : Value(LSB)
7th Byte mm : Value(MSB)
mm,vv = 00,00:Left, 40,00:Center, 7F,7F:Right

Master Fine Tune (Control Master Tune(cent) in Global)
[F0,7F,09,04,03,vv,mm,F7] 3rd Byte g : Global Channel
6th Byte vv : Value(LSB)
7th Byte mm : Value(MSB)
mm,vv = 20,00:-50, 40,00:+00, 60,00:+50

Master Coarse Tune (Control Transpose (chromatic step) in Global)
[F0,7F,09,04,04,vv,mm,F7] 3rd Byte g : Global Channel
6th Byte vv : Value(LSB)
7th Byte mm : Value(MSB)
mm,vv = 34,00:-12, 40,00:+00, 4C,00:+12

Option boards/memory

Please read this before you begin installation

Safety precautions

Warnings

- When installing, repairing, or replacing the parts of this product, you must perform only those actions that the owner's manual directs, and no other.
- Do not apply excessive force to the electronic components or connectors of the circuit board(s), or attempt to disassemble them. This could cause electric shock, fire, or malfunction.
- Before installing this product, be sure to disconnect the power supply cable, and the connecting cables to any peripheral devices. Failure to do so could cause electrical shock or may damage this device.

Cautions

- Do not allow this product to become wet, and do not allow objects to be placed on top of it. Doing so could cause malfunction.
- Before touching this product, touch a metal component of the device into which it will be installed, to discharge any static electricity that may be present in your body. Static electricity may damage the electronic components.
- When handling this product, be careful not to touch the leads on the back side of the circuit board (the side opposite that on which the components are mounted). The sharp points may cause injury.
- When installing this product, never touch components or circuit boards that are not related to the connections you are required to make. Doing so may cause electrocution or malfunctions.
- When installing this product, be careful not to cut your hands on the sharp edges of the metal brackets etc. of this product or of the device into which it is being installed.
- When installing this product, be careful that screws or other parts do not fall into the device into which it is being installed.

Korg Inc. takes no responsibility for any malfunctions or damage that may occur from improper use or modification of this product. Nor will Korg Inc. be responsible for any damages resulting from the loss or destruction of data.

About option boards

By installing option boards or memory into this instrument, you can expand its functionality. The following four types of expansion are possible.

● EXB-MOSS (DSP synthesizer board)

This adds to this instrument a MOSS tone generator that provides thirteen oscillator algorithms, including Standard, Ring Modulation, VPM, Resonance, Organ Model, and Electric Piano Model. This lets you use the MOSS tone generator in program, combination, sequence, or song play modes. The MOSS tone generator has six-note polyphony.

● EXB-PCM series (PCM expansion boards)

Each of these boards adds 16 Mbytes of multisamples and drum samples to this instrument. (The details will differ according to the series.)

EXB-PCM01: Piano/Classic Keyboards

EXB-PCM02: Studio Essentials

EXB-PCM03: Future Loop Construction

EXB-PCM04: Dance Extreme

EXB-PCM05: Vintage Archives

* As of December 2000

Please note when installing an option board



- So that static electricity in your body does not damage the electronic components, touch the ground wire of a grounded device or an unpainted metallic component to discharge any static electricity in your body before installing an option board. Internal components of this instrument and of the option boards may be damaged by static electricity.
- Follow the installation procedure, and be sure that each part is installed correctly and in the correct orientation.
- Please use care in handling option boards. Dropping them or applying pressure to them may damage the components.
- Avoid touching exposed metal edges of the circuit board, or portions that need not be handled during installation.
- All screws (and washers) that are removed will be used, so be careful not to misplace them.
- Do not use screws other than those that are installed in the option board and this instrument. Using screws of a different shape or length may damage the unit or cause it to malfunction.
- Be sure to firmly tighten the screws used for attachment.
- Be sure that the option board is inserted correctly into the connector or slot. After installation, be sure to check that the board is installed correctly. If the board is not inserted all the way, faulty contact or power supply shorts can occur, making the unit malfunction.
- Be careful not to drop parts or the option board into the inside of the instrument.

If you are unable to retrieve a screw or part that was dropped inside the instrument, please contact your local Korg distributor.

Checking after installation

- ⚠ When this instrument is turned on, the currently installed option boards will be shown in the LCD screen. After installing an option board, be sure to turn on the power and make sure that the option board that you installed is displayed in the LCD screen. If it is not displayed, the installation may not have been performed correctly. Check once again that the board is installed correctly. If you have any questions regarding installation, please contact your local Korg distributor.

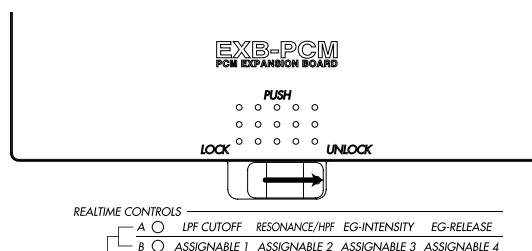


- **EXB-PCM Slot1 (EXB1):** EXB-PCM installed in slot 1
- **EXB-PCM Slot2 (EXB2):** EXB-PCM installed in slot 2
() indicates the series name
- **EXB-MOSS:** EXB-MOSS is installed

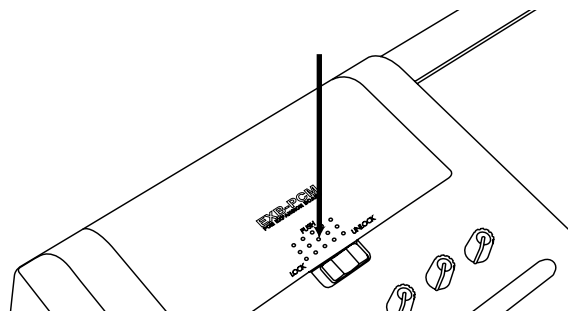
Installing an EXB-PCM

- ⚠ A maximum of two EXB-PCM boards can be installed simultaneously. If you are installing a single EXB-PCM, it will function correctly whether installed in either slot. For easiest installation, you should use the furthest slot (EXB-PCM Slot 2) first.
- ⚠ During the installation, be careful not to cut your hand on any sharp edges of this instrument or of the option board.
- ⚠ You must leave the AC/AC power supply disconnected until you finish the entire process of removing the lid, installing the option board, and reattaching the lid.

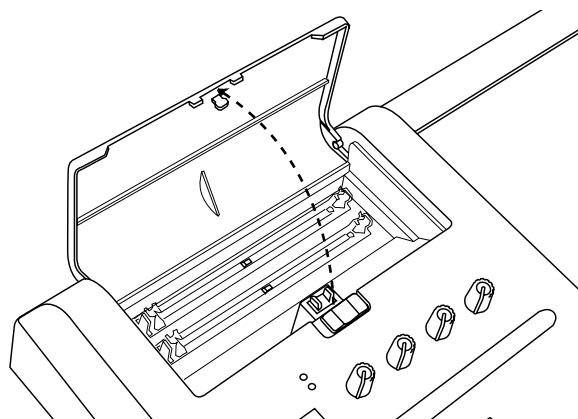
- ① Set the [LOCK/UNLOCK] switch to the **UNLOCK** position.



- ② Lightly press the area shown in the diagram to make the EXB-PCM cover lift up, and then open the EXB-PCM cover.

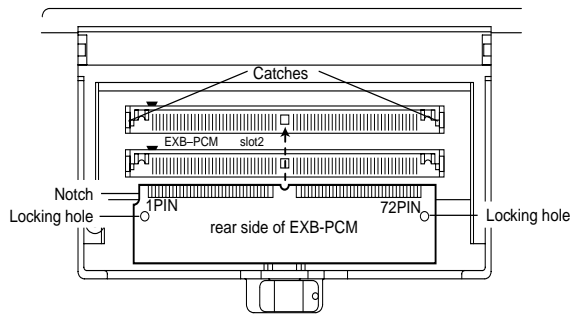


- ⚠ When opening the EXB-PCM cover, be careful not to push it too far backward. Doing so may pop the cover off, damaging it.

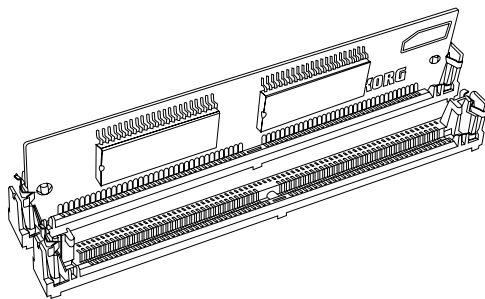
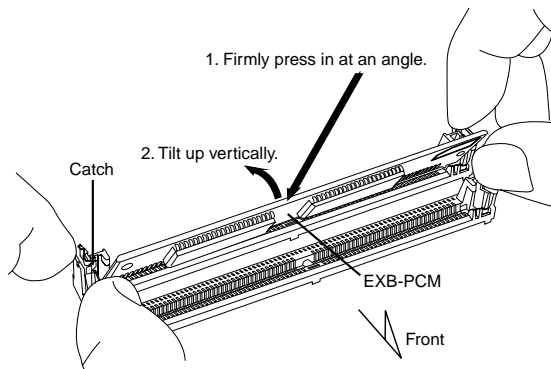


- ③ Remove the EXB-PCM from its packing pouch.

- ④ The notched side of the EXB-PCM is PIN 1. Install the EXB-PCM with its PIN 1 side aligned with the PIN 1 mark (→) of the slot.



- ⑤ At a slant, press the EXB-PCM firmly all the way into the slot, and raise it to the vertical position until the catches of the slot click into the locking holes of the EXB-PCM. When doing so, pressing the catches of the slot apart to the left and right will help the board go in smoothly.



- ⑥ Close the EXB-PCM cover, and set the [LOCK/UNLOCK] switch to the LOCK position.

⚠ The cover will not close if the [LOCK/UNLOCK] switch is in the LOCK position. Move it to the UNLOCK position and close the cover before moving it to the LOCK position.

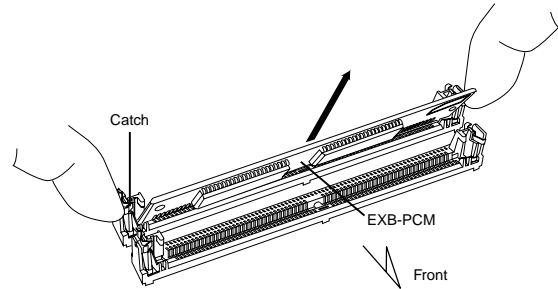
- ⑦ When all steps have been completed, turn on the power and make sure that the EXB-PCM has been installed correctly. (→p.265 "Checking after installation")

Removing an EXB-PCM

- Spread the catches of the slot apart to the left and right, and (after removing the stoppers from the catches) tilt the EXB-PCM and pull it out.

If you wish to remove the rear EXB-PCM board, you must first remove the forward EXB-PCM.

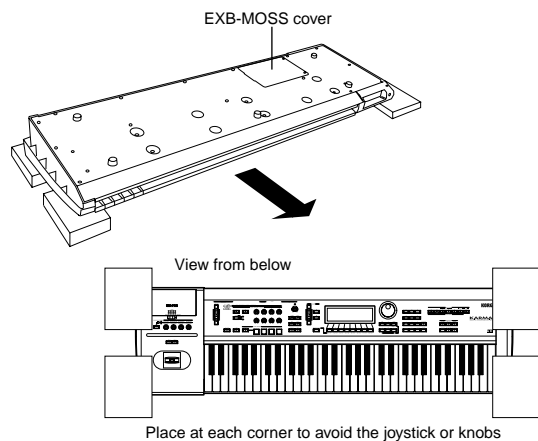
⚠ When you spread the catches of the slot apart, the EXB-PCM may pop out vigorously and fall into an opening (inside the instrument). Please be careful.



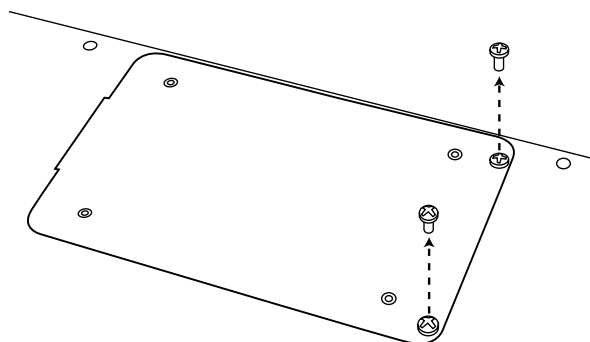
Installing the EXB-MOSS

Before you perform the installation, be sure to read the foregoing section "Please note when installing an option board."

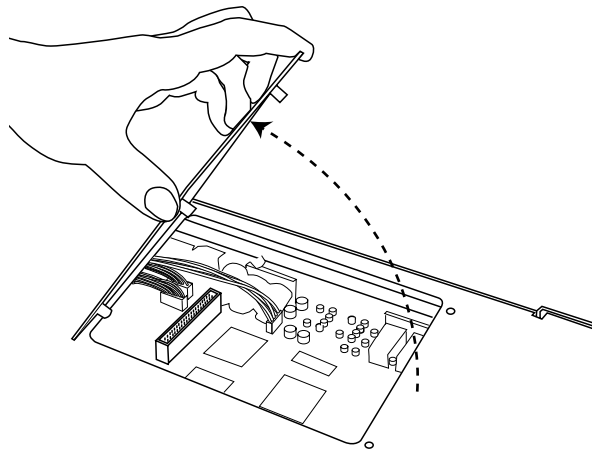
- ⚠ During the installation, be careful not to cut your hand on any sharp edges of this instrument or of the option board.
- ⚠ You must leave the AC/AC power supply disconnected until you finish the entire process of removing the lid, installing the option board, and reattaching the lid.
- ① You will need a "+" (plus) screwdriver, and some magazines or other material (to prevent damage to the joystick and knobs etc.: see diagram below).
- ② Turn off this instrument, and disconnect the AC/AC power supply cable and any other cables by which other devices are connected.
- ③ Make sure that the EXB-PCM cover is closed, and that the [LOCK/UNLOCK] switch is in the **LOCK** position.
- ④ As shown below, place four books or magazines on your work surface to prevent damage to the joystick or knobs, and place the instrument upside down on top of them.



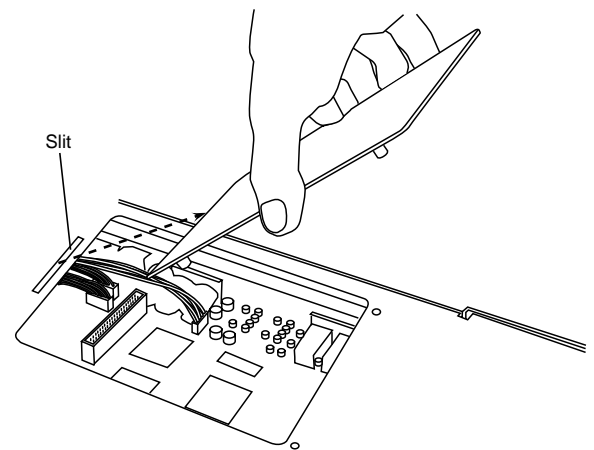
- ⚠ When you turn over the instrument, be careful not to lose your balance and drop the instrument.
- ⑤ Use a screwdriver to remove the two screws from the EXB-MOSS cover.



- ⑥ Lift the EXB-MOSS cover to the position shown in the diagram.

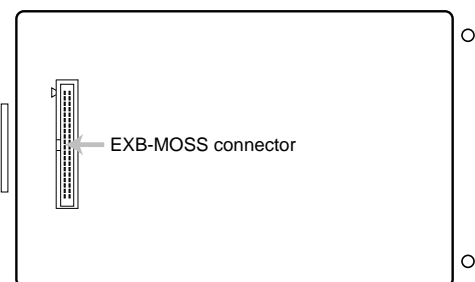


- ⑦ Pull the EXB-MOSS cover away from the slit.

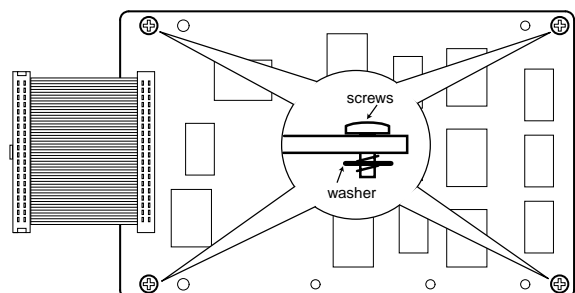


View with the cover removed

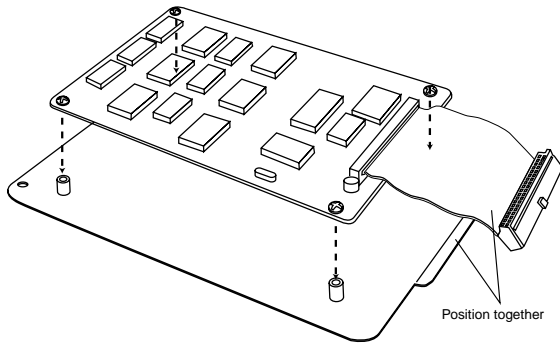
Rear side



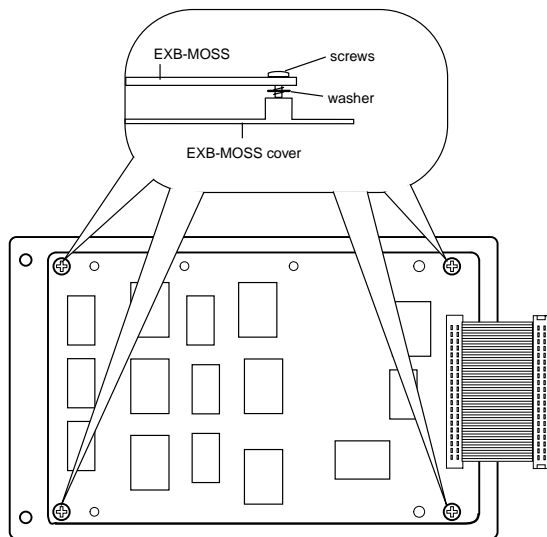
- ⑧ Remove the EXB-MOSS from its packing pouch.
- ⑨ Note that screws and washers are attached to the four corners of the board.



- ⑩ Use four screws to fasten the EXB-MOSS to the EXB-MOSS cover.
When doing so, position the EXB-MOSS on the EXB-MOSS cover as shown in the diagram.

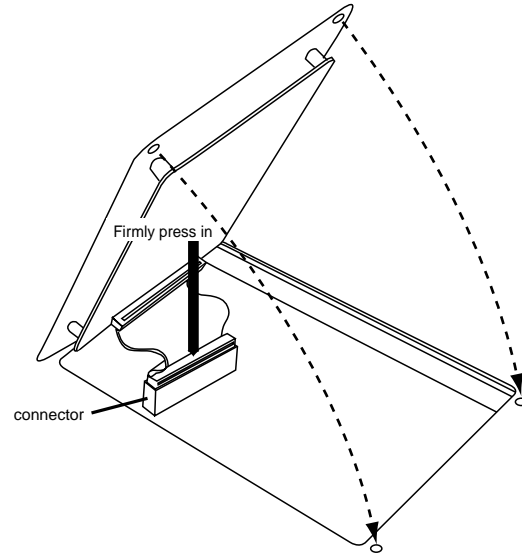


- ⚠ Before the screws are tightened, the EXB-MOSS will float slightly above the brackets. If at this time you apply excessive force to the EXB-MOSS, the screws or washers may come out.



- ⑪ Insert the protrusion of the EXB-MOSS cover into the slit, and connect the cable to the connector. With the EXB-MOSS cover held at the angle shown in the diagram, press the cable all the way into the connector.

- ⚠ Do not touch any part of the circuit board other than the connector in which the cable is being inserted.



- ⑫ Close the EXB-MOSS cover and use the two screws to fasten it.


- ⑬ When all steps have been completed, turn on the power and make sure that the EXB-MOSS has been installed correctly. (☞ "Checking after installation")

EXB-MOSS option

By installing the separately sold EXB-MOSS option, you can add a MOSS tone generator to this instrument, and add MOSS program bank F.

This section explains only the parameters of the MOSS tone generator.

For details on other parameters, refer to the Parameter Guide, Basic Guide, and GE Guide of this instrument.

 Before you use the EXB-MOSS, be sure to read the section “Safety precautions” included at the beginning of this manual.

Features of the EXB-MOSS

The EXB-MOSS is a MOSS (Multi-Oscillator Synthesis System) option board with six-voice polyphony.

The MOSS tone generator is a physical modeling tone generator that uses Sondius-XG* technology. When the EXB-MOSS is installed in this instrument, you will be able to use 128 MOSS tone generator programs in program bank F. Bank F can be used as a dedicated bank for MOSS tone generator programs, and bank F programs can be selected for timbres/tracks in Combination, Song, Song Play mode. You can also create combinations or tracks that use these programs in conjunction with the programs of banks A–E and G, g(0)–g(9), g(d).

Broadly speaking, a MOSS tone generator program consists of voice, EG, LFO, effect, and controller sections.

The voice consists of an oscillator and a filter.

- The oscillator section provides two oscillators (oscillator 1 and 2, for which you can select from thirteen different oscillator algorithms, including standard, ring modulation, VPM, resonance, organ model, and electric piano model), plus a sub-oscillator and a noise generator.
- The filter section lets you choose from five types of filter (two filter units), including a human voice that lets you simultaneously specify two center frequency points, and a dual band-pass filter that lets you simulate the body resonances of a violin or guitar.

By using five EG units and four LFO units to modulate this voice section you can apply a rich variety of pitch, tonal, and volume changes to each voice.

* Developed under license of physical modeling tone generator patents (<http://www.sondius-xg.com>) owned by Stanford University USA and Yamaha Corporation.

The structure of a MOSS tone generator program

A MOSS tone generator program is structured as follows.

OSC (oscillator)

This section produces the waveform that is the basis of the sound.

These parameters are set in PROG 2.1: Ed-Basic, PROG 2.3: Ed-OSC, and PROG 3.1: Ed-Pitch.

- **Oscillator 1/2**

The EXB-MOSS provides thirteen methods of generating sound (13 oscillator types). You can combine two of these oscillator types, and specify the basic pitch and how oscillation will occur. However for some oscillator types, only one may be used at a time.

These parameters are set in PROG 2.1: Ed-Basic, Prog Basic page and OSC Basic page, and in PROG 2.3: Ed-OSC.

- **Sub Oscillator**

You can select one of four basic waveforms.

Pitch-related settings can be made in the same way as for Oscillator 1/2.

These parameters are set in PROG 2.1: Ed-Basic, Prog Basic and OSC Basic pages.

- **Noise Generator**

This generates white noise. The noise can be sent through a multi-mode filter (low pass filter, high pass filter, band pass filter).

These parameters are set in PROG 2.1: Ed-Basic, Noise Gen. page.

Mixer

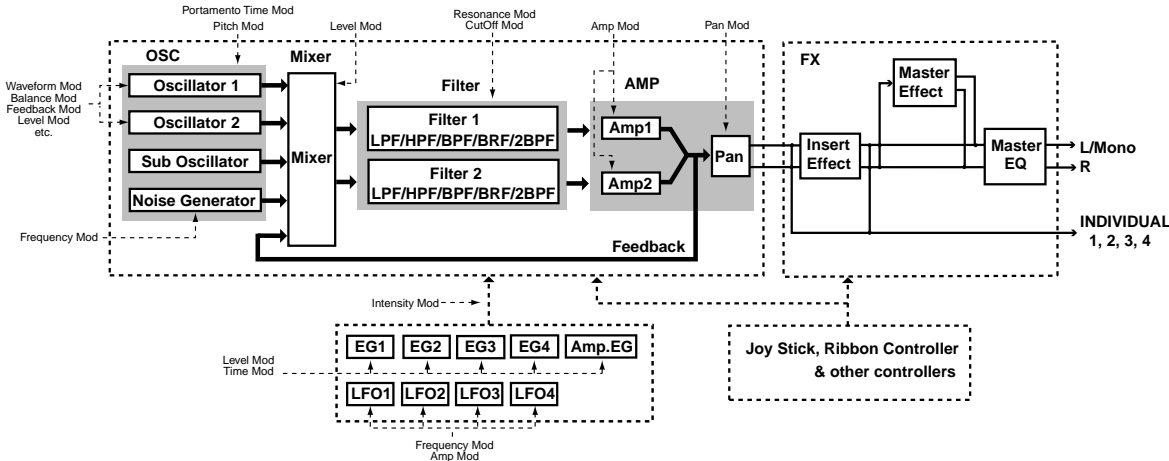
Here, the signals from Oscillator 1/2, Sub Oscillator, Noise Generator, and the feedback from the AMP are mixed, and output to multi-mode filters 1/2 (Filter 1/2).

These parameters are set in PROG 2.1: Ed-Basic, OSC Mixer1 and OSC Mixer2 pages.

Filter

This section contains two multi-mode filters. As the filter type, you can select low pass filter, high pass filter, band pass filter, band reject filter, or dual band pass filter. You can also select the routing between the two filters and the mixer and amp.

These parameters are set in PROG 4.1: Ed-Filter.



AMP

This section contains two amps. The signal that is input to each will depend on the filter routing. In addition, the amp section provides an amp envelope generator (Amp EG) that can be used to control it.

These parameters are set in PROG 5.1: Ed-Amp.

FX (effects)

This section applies effects to the signal that is output from the amp. It has the same parameter structure as for the programs of other banks.

These parameters are set in PROG 7.1: Ed-BUS, PROG 7.2: Ed-InsertFX, and PROG 7.3: Ed-MasterFX.

LFO

This section provides four LFO units. These LFOs can be used as modulation sources for various parameters, applying cyclic change to the sound.

These parameters are set in PROG 5.3: Ed-LFOs.

EG

This section provides four general-purpose envelope generator (EG) units. The four EGs can be used as modulation sources for various parameters, applying time-variant change to the sound.

These parameters are set in PROG 5.2: Ed-EGs.

KARMA

KARMA can be used in the same way as other program banks.

These parameters are set in PROG 6.1: Ed-KARMA, 6.2: Ed-KARMA Mdl, 6.3: Ed-KARMA GE, and 6.4: Ed-KARMA RT.

Program basic

Here you can make settings for scale, key assign, and controller functions (REALTIME CONTROL knobs, SW1, SW2).

These parameters are set in PROG 2.1: Ed-Basic, PROG 2.2: Ed-Ctrl.

About the oscillators

For bank F, you can select from thirteen different oscillator types for Oscillator 1, and from nine different types for Oscillator 2.

In the PROG 2.1: Ed-Basic, Prog Basic page or OSC Basic page, you can select the type for Oscillators 1 and 2, and use them together.

If you have selected a **Single Size** oscillator type (Standard–E. Piano Model) for Oscillator 1, you will also be able to select a Standard–E. Piano Model oscillator for Oscillator 2. However, Oscillator 2 cannot be used if a **Double Size** oscillator type (Brass Model–Bowed String Model) is selected for Oscillator 1.

Standard

This simulates the oscillator of an analog synthesizer. You can obtain the same effects as on an analog synthesizer, such as using PWM (pulse width modulation). (☞p.277, “EXB-MOSS owner’s manual” p.14)

Comb Filter

This oscillator produces pitched frequency components from noise or an impulse. It can be used to generate a diverse array of sounds, ranging from noisy sounds to synth bass or string-like sounds. (☞p.278, “EXB-MOSS owner’s manual” p.17)

VPM (Variable Phase Modulation)

This oscillator uses phase modulation to generate overtones. You can produce rich overtones by using phase modulation between two oscillators and a wave shaping table to process the sound. (☞p.278, “EXB-MOSS owner’s manual” p.18)

Resonance

This oscillator is an application of filter oscillation, and is especially good for mallet sounds or pads. (☞p.279, “EXB-MOSS owner’s manual” p.20)

Ring Modulation

Cross Modulation

Sync Modulation

These are special oscillators that implement the modulation between oscillators that could be created on analog synthesizers. They are suitable for producing sounds with rich overtone structures, such as bells, metallic sounds, and gongs. (☞p.279–280, “EXB-MOSS owner’s manual” p.21–23)

Organ Model

This uses one oscillator to simulate an organ with three drawbars, or two oscillators to simulate an organ with six drawbars

Since a single drawbar can generate one of four waveforms that you choose, you can obtain a wide range of tones.

(☞p.280, “EXB-MOSS owner’s manual” p.23)

E. Piano Model (electric piano model)

This is a physical model that simulates a warm vintage piano sound. (☞p.280, “EXB-MOSS owner’s manual” p.24)

Brass Model

This is a physical model that simulates a brass instrument such as a trumpet or trombone. (☞p.281, “EXB-MOSS owner’s manual” p.25)

Reed Model

This is a physical model that simulates a wind instrument such as a sax or flute. (☞p.281, “EXB-MOSS owner’s manual” p.27)

Plucked String Model

This is a physical model that simulates a plucked string instrument such as a guitar or bass guitar. (☞p.282, “EXB-MOSS owner’s manual” p.29)

Bowed String Model

This is a physical model that simulates a bowed string. (☞p.282, “EXB-MOSS owner’s manual” p.31)

Loading the preloaded data

Load the data from the “MOSS00FD” floppy disk included with the EXB-MOSS.

The floppy disk contains the following data.

MOSS.PCG

Programs	Bank A, B, C, D, F
Combinations	Bank A, B, C, D
Drum Kits	00–15 (A/B)
Global Settings	

MOSS.SNG

Cue List

Song (TRITON, TRITON Pro, TRITON ProX song file)

"Feet Hurt MOSS" by Scott Frankfurt

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note The .PCG files and .SNG files on the floppy disks included with the EXB-PCM series or EXB-MOSS are for the TRITON series. (As of December 2000) Since the KARMA workstation does not have the arpeggiator function of the TRITON series, the arpeggiator-related parameters included in the programs, combinations, and songs will be ignored when a .PCG or .SNG file is loaded, and will not function. These .PCG and .SNG files do not contain settings for the KARMA function. When these files are loaded, all parameters related to the KARMA function will be initialized.

Also, the category of the programs or combinations may be inappropriate. For other details on data compatibility with the TRITON series, refer to PG p.260.

Program bank F contains program data for the MOSS tone generator. Load this data into MOSS tone generator program bank F of this instrument.

Combination bank B (000...063) contains combinations that use the bank F programs. Load this data into any combination bank E of this instrument.

The remaining program banks A, B, C, D, combination banks A, C, D, drum kits, arpeggio patterns, global settings, and cue list is data for the TRITON.

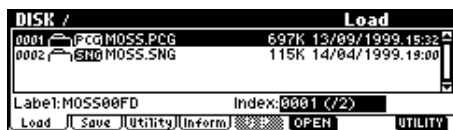
⚠ When loading the MOSS.PCG file into this instrument, you must be sure to load only the data for Program Bank F and Combination Bank B. If you load any other data, the preloaded data of this instrument will be overwritten. When you load MOSS.SNG, the Cue List will not be loaded into this instrument.

Loading from the included floppy disk

How to load the bank F programs

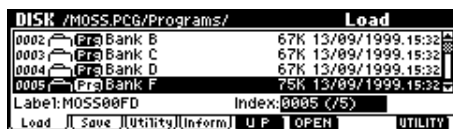
- 1 Insert the "MOSS00FD" floppy disk into the disk drive.
- 2 Press the [DISK] key to enter Disk mode.

The following display will appear in the LCD screen.

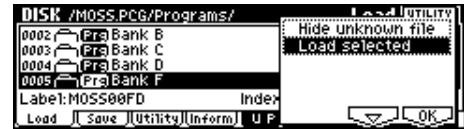


- 3 Select "Bank F" (bank F programs).

Use the cursor keys [▲], [▼] to select "MOSS.PCG," and press the [F6] ("OPEN") key to open the file. In the same way, select "Bank F" within "Programs."



- 4 Press the [F8] ("UTILITY") key to access the utility menu, press the [F7] key to choose "Load Selected," and press the [F8] ("OK") key.



The Load Program Bank F dialog box will appear.

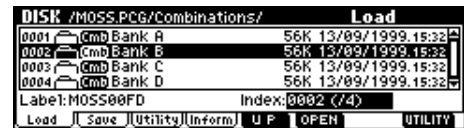
- 5 Press the [F8] ("OK") key.

Only the program data of bank F from the "MOSS00FD" floppy disk will be loaded into program bank F of this instrument.

How to load the bank B combinations

Here's how to load the data into combination bank F.

- 1 If you have modified the program settings or the order of banks A or B, load banks A and B from the disk included with this instrument. The EXB-MOSS combinations B use bank F programs as well as the preloaded program banks A and B. This means that if you load EXB-MOSS combinations B, you must also load the preloaded program banks A and B. (Refer to BG p.93 "Loading data")
- 2 Use the cursor keys [▲], [▼] to select "Combinations," and press the [F6] ("OPEN") key.
- 3 Use the cursor keys [▲], [▼] to select "Bank B."



- 4 Press the [F8] ("UTILITY") key to access the utility menu, press the [F7] key to choose "Load Selected," and press the [F8] ("OK") key.

The Load Combination Bank B dialog box will appear.

- 5 Use the VALUE [▲], [▼] keys to select Bank F for "To."



note In consideration for loading the preloaded data and EXB-PCM series data, we recommend that you load this data into bank F.

- 6 Press the [F8] ("OK") key.

Only the bank B combination data from the "MOSS00FD" disk will be loaded into bank F of this instrument.

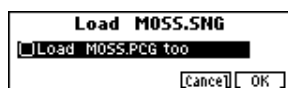
How to load MOSS.SNG into the demo song

MOSS.SNG is a song file that uses the programs of bank F, etc.

- 1 Perform steps ①–② of "How to load the bank F programs."
- 2 Use the cursor keys [▲], [▼] to select "MOSS.SNG."



- ③ Press the [F8] (“UTILITY”) key to access the utility menu, press the [F7] key to select “Load Select,” and press the [F8] (“OK”) key. The following dialog box will appear.



- ⚠ You should uncheck “Load MOSS.PCG too” when loading. If this is checked, program banks A–D will also be loaded from disk.
- ④ If you wish to load the data, press the [F8] (“OK”) key. The demo song will be loaded from the “MOSS00FD” disk into this instrument.
- ⑤ Press the [SEQ] key to enter Sequencer mode, select SEQ 1.1: Play/REC, and then press the [START/STOP] key to play the demo song.

Selecting programs/combinations

Programs/combinations can be selected in the same way as for banks A–E. (☞ BG p.20, 22)

They can also be selected using the “Select by Category” utility.

For the program list of the included floppy disk, refer to the “Voice Name List” that begins on p.50 of the “EXB-MOSS owner’s manual.”

- ⚠ Depending on the oscillator type used by the program or on the combination of effect types, a certain amount of time may be required after a program is selected until it actually changes.

Editing a program

When a bank F MOSS tone generator program is selected in PROG 1.1: Play, you can use PROG 2.1–7.3 to edit the program parameters. For details on the program parameters, refer to “Parameters” (p.275–) and “EXB-MOSS owner’s manual.”

- ⚠ The performance editor “Stretch” in the PROG 1.1: Play, Perform. Edit page cannot be used on bank F programs.

Editing a combination

In a combination, you can combine bank F programs with programs from banks A–E and G, g(0)–g(9), g(d). You can also use two or more programs from bank F.

- ⚠ Insert/master effects and routing to independent audio outputs cannot be set independently for multiple timbres.
- ⚠ If you change programs while a bank F program is sounding, the bank F program will stop sounding.
- ⚠ When playing multi-timbrally, selecting a bank F program for a timbre that is numbered earlier than another timbre currently sounding a bank F program will cause noise to be heard in the currently-sounding bank F program.

Timbre settings

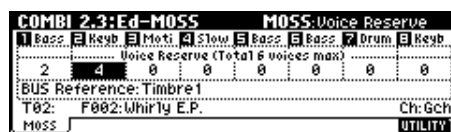
Here is the procedure for selecting a program for a timbre, and for setting the parameters that allow it to sound.

- ① Select COMBI 1.1: Play.

For details on how to enter each page, refer to BG p.14.

- ② Select the combination that you wish to edit.
- ③ Select COMBI 2.3: Ed-MOSS.

Before you select a bank F program, make settings here to specify how the MOSS tone generator will produce sound.



- ④ Use “Voice Reserve” to specify the number of voices that will sound the bank F program. The programs of bank F can be sounded by a maximum of six voices.

For example, timbre 1 could use up to two voices for a MOSS tone generator bass program, and timbre 2 could use up to four voices for a MOSS tone generator electric piano program.

- ⚠ The “Voice Reserve” setting is ignored for the programs of banks A–E and G, g(0)–g(9), g(d). If you change the program used from a bank F program to a bank A–E and G, g(0)–g(9) or g(d) program, it will sound without regard to the “Voice Reserve” setting. Conversely, when you change the program used from a bank A–E and G, g(0)–g(9) or g(d) program to a bank F program, it will sound according to the “Voice Reserve” setting.

If you select a bank F program for a timbre whose “Voice Reserve” is set to 0, the program will not sound.

- ⑤ The “BUS Reference” parameter selects the timbre whose routing setting will be used by bank F programs. If more than one timbre uses a bank F program, the insert effect, master effect, and independent audio output routing settings cannot be specified independently for these timbres. All bank F programs used will use the routing settings of the timbre selected for “BUS Reference.” The timbre you select for “BUS Reference” does not have to be using a bank F program. Timbre routing is specified in COMBI 7.1: Ed-BUS. Use the following procedure to make settings.

Example)

- ① Set “BUS Reference” to **Timbre 1**.
- ② In the COMBI 7.1: Ed-BUS, BUS page, set timbre 1 “BUS Select” to **L/R**. All timbres that use a bank F program will be sent to L/R. They will not be sent to the insert effects. If you wish to send them to an insert effect, set “BUS Select” to **IFX1–IFX5**. If you wish to output them to (INDIVIDUAL) **1–4**, select **1–4**, **1/2**, or **3/4**.
- ③ In the COMBI 7.1: Ed-BUS, BUS page, set timbre 1 “S1” to **064**, and set “S2” to **127**. All timbres that use a bank F program will be sent to the master effects at the send levels you specify here. If you send the signal to an insert effect, set “S1” and “S2” in the COMBI 7.2: Ed-InsertFX, Setup page.

note For timbres that use bank A–E, G, g(0)–g(9) or g(d) programs, the actual send level is determined by multiplying the send levels specified by the timbre and the program. For timbres that use bank F programs, the send level value will itself be the actual send level.

- ⚠ The “BUS Reference” setting has no effect on programs of banks A–E, G, g(0)–g(9), g(d).

- ④ Select the COMBI 2.1: Ed-Prog/Mix, Prog page.




- ⑤ For “Program Select,” choose a bank F program.
 ⑥ Select the COMBI 2.1: Ed-Prog/Mix, Mixer page.
 ⑦ Use “Pan” to adjust the panpot of the timbre.
 If a bank F timbre is selected for a timbre, **RND** will be ignored. If the setting is **RND**, the signal will be panned to the center as for a setting of **C064**.
 ⑧ Use “Volume” to set the volume of the timbre.
 ⑨ Set parameters in other pages.
 Set the various parameters in the same way as for timbres that do not use bank F programs.
 However, the parameters listed below will function as follows if a bank F program is used by a timbre.
- “OSC Select” will be ignored. (COMBI 3.1–2a)
 - The range of “Detune (BPM Adj)” will be ± 100 . Even if the absolute value of the setting is greater than 100, the actual detune value will be ± 100 cents. (COMBI 3.1–3a)
 - The Key Zone/Vel Zone “Top Slope” and “Bottom Slope” will be ignored. (COMBI 3.3–2a)

Sequencer, Song Play mode

You can select bank F programs when creating (only in Sequencer mode) or playing back a song, or when playing data received from an external sequencer or an external MIDI keyboard.

As for a combination, you can use separate bank F programs for multiple tracks. At this time, the bank F programs will have a total polyphony of six voices.

 As for a combination, the insert/master effect routing settings cannot be sent individually for multiple tracks.

The settings, parameter operation, and points of caution are the same as for combinations. Refer to p.272 “Editing a combination.”

Operation when transmitting/receiving control changes

In the same way as the bank A–E, G, g(0)–g(9) and g(d) programs, the sound of bank F programs can be modified by incoming MIDI control changes CC#70–79, or by operating the REALTIME CONTROL knobs in A-mode or B-mode.

([p.242](#) “This instrument operations when control changes are transmitted/received”)

In Program mode, you can write the program to save it in its modified state.

CC#70: Sustain Level

“Sustain Level” (PROG 5.1: Ed-Amp, AmpEG page, PROG 5.2: Ed-EGs, EG1–4 pages).

note This affects the EG that is selected for Filter EG (PROG 4.1: Ed-Filter 1/2 page) and Amp Level EG (PROG 5.1: Ed-Amp, Amp 1/2 page).

CC#71: Filter Resonance Level

“Resonance to A,” “Resonance to B” (PROG 4.1: Ed-Filter, Filter 1/2 page)

CC#72: Release Time

“Release Time” (PROG 5.1: Ed-Amp, AmpEG page, PROG 5.2: Ed-EGs, EG1–4 pages)

note This affects the EG that is selected for Filter EG (PROG 4.1: Ed-Filter 1/2 page) and Amp Level EG (PROG 5.1: Ed-Amp, Amp 1/2 page).

CC#73: Attack Time

“Attack Time,” “T Mod A” (PROG 5.1: Ed-Amp, AmpEG page, PROG 5.2: Ed-EGs, EG1–4 pages)

note This affects the EG that is selected for Filter EG (PROG 4.1: Ed-Filter 1/2 page) and Amp Level EG (PROG 5.1: Ed-Amp, Amp 1/2 page).

CC#74: Low Pass Filter Cutoff Frequency

“Frequency to A,” “Frequency to B” (PROG 4.1: Ed-Filter, Filter 1/2 page)

CC#75: Decay Time

“Decay Time,” “Slope Time” (PROG 5.1: Ed-Amp, AmpEG page, PROG 5.2: Ed-EGs, EG 1–4 pages)

note This affects the EG that is selected for Filter EG (PROG 4.1: Ed-Filter 1/2 page) and Amp Level EG (PROG 5.1: Ed-Amp, Amp 1/2 page).

CC#76: Pitch LFO Speed

“LFO1–4 Frequency” (PROG 5.3: Ed-LFOs, LFO1–4 pages)

note If LFO1–4 is selected for Pitch AMS1, AMS2 (PROG 3.1: Ed-Pitch, OSC1/2 pages) or Common Pitch Mod. AMS (PROG 3.1: Ed-Pitch, Common page), this will affect the selected LFO.

CC#77: Pitch LFO Intensity

“Modulation AMS1 Intensity,” “Modulation AMS2 Intensity” (PROG 3.1: Ed-Pitch, OSC 1/2 page)

“Common Pitch Mod. AMS Intensity” (PROG 3.1: Ed-Pitch, Common page)

note If LFO 1–4 is selected for these AMS, this message will affect that LFO.

CC#78: Pitch LFO Delay

“LFO1/2, 3, 4 Fade” (PROG 5.3: Ed-LFOs, LFO1–4 page)

note If LFO1–4 is selected for Pitch AMS1, AMS2 (PROG 3.1: Ed-Pitch, OSC1/2 pages) or Common Pitch Mod. AMS (PROG 3.1: Ed-Pitch, Common page), this will affect the selected LFO.

CC#79: Filter EG Intensity

“EG Intensity to A,” “EG Intensity to B” (PROG 4.1: Ed-Filter, Filter 1/2 page)

Parameters

For details on the parameters, refer to the “EXB-MOSS owner’s manual” included with the EXB-MOSS. Parameter names given in the “EXB-MOSS owner’s manual” are the names used when the EXB-MOSS is installed in the TRITON/TRITONpro/TRITONproX, and will differ from the names when it is installed in this instrument. However, the content of the explanations will remain the same.

Viewing the parameters

This manual provides the following information on the parameters.

- **KARMA Parameters (p.276–p.287)**

This shows the correspondence between this instrument parameter names and the parameter names printed in the “EXB-MOSS owner’s manual.” Use the following procedure to find the explanation for a parameter.

- 1 In the LCD screen of this instrument, find the parameter that you wish to learn about.
As an example, let’s suppose that you want to learn about the PROG 2.1: Ed-Basic, Prog Basic page “Mode” parameter.
- 2 In the index of this manual, find the mode name and page number shown in the LCD screen.
“Mode” →PROG 2.1: Ed-Basic →p. 291 of this manual

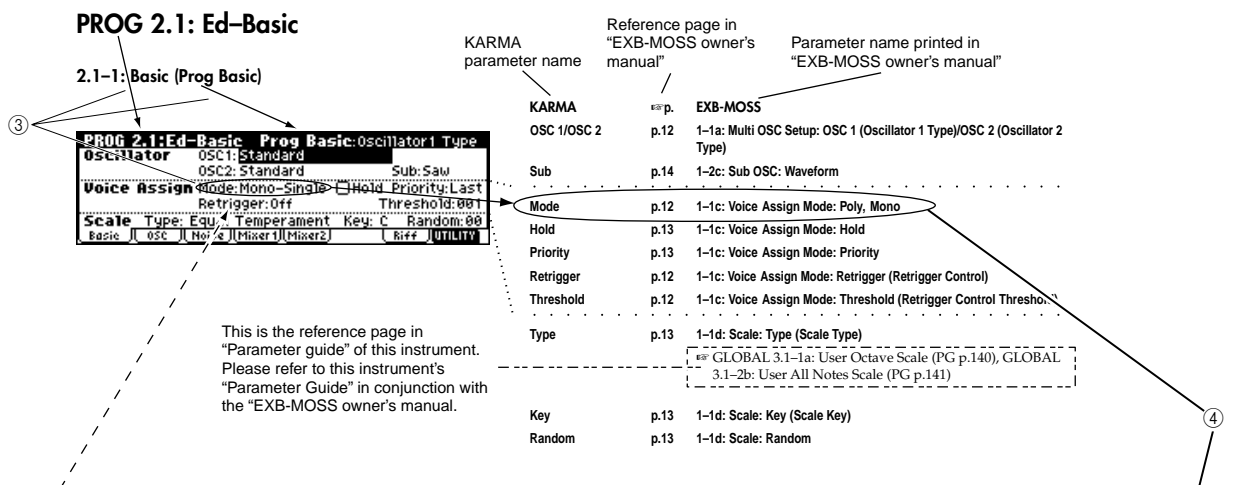
- 3 Find the desired parameter using this instrument’s LCD screen and the LCD screen, mode name, and page number listed in this manual.
(See the solid lines with arrows in the diagram below.)
- 4 Use the reference page and parameter name listed beside the desired parameter name to find the relevant location in the “EXB-MOSS owner’s manual.” (See the solid lines with arrows in the diagram below.)

- **EXB-MOSS Parameter Index (p.288–p.291)**

You can perform a reverse-lookup to see which this instrument screen contains a parameter described in the “EXB-MOSS owner’s manual.” Use the following procedure.

- 1 In the “EXB-MOSS owner’s manual,” find the parameter name that you want to look up.
- 2 Use the page number and parameter name to find the parameter name in the EXB-MOSS Parameter Index. (See the dashed lines with arrows in the diagram below.)
- 3 Use the reference page and parameter name listed beside the desired parameter name to find this instrument parameter name listed in this instrument Parameters.

p.276 of this manual, “KARMA Parameters”



④ p.288 of this manual, “EXB-MOSS Parameter Index”

Release (Release Time)	
Amp EG: Time	5.1-3: AmpEG: L esp.p.285
EG1...4: Time	5.2-1...4: EG1...4: L esp.p.285
Reso	
Reed Model: Bell Character	2.3-1: Reed: Bell esp.p.281
Reso (Resonance)	
Resonance: BPF Parameters	2.3-2: Resonance: BPF BPF: 1...4 esp.p.279
Resonance	
Filter: Filter A	4.1-1/3: Filter1/2: Reso to A/B esp.p.284
Noise Generator	2.1-3: Noise Gen. esp.p.276
Brass Model: Lip Character	2.3-1: Brass: Lip esp.p.281
Retrigger (Retrigger Control)	
Prog Basic: Voice Assign Mode	2.1-1: Prog Basic: Voice Assign esp.p.276
RT (Release Time AMS2 Intensity)	
Amp EG: Time Modulation	5.1-3: AmpEG: T Mod.: R esp.p.285
EG1...4: Time Modulation	5.2-1...4: EG1...EG4: T Mod.: R esp.p.285
Rosin	
Bowed String Model: Bow Speed	2.3-2: Bowed String: Bow: Bow Speed esp.p.283
Routing	
Filter: Routing	4.1-1/3: Filter1/2 esp.p.284

Page 12 of the “EXB-MOSS owner’s manual” included with EXB-MOSS

1-1a: Multi OSC Setup	
Here, you can make settings for the oscillator. The parameters that are set in “1-3: OSC 1” and “1-4: OSC 2” will differ depending on the oscillator type that is selected here. (Link: 1-2a, 1-2b)	
OSC 1 (Oscillator 1 Type)	
[Standard...Bowed String Model]	
Selects the oscillator type for oscillator 1. For details on the oscillator types, refer to “Features of the oscillator” on p. 4 of this manual.	
Single Size	
Standard	
Comb Filter	
VPM (Variable Phase Modulation)	
Resonance	
Ring Modulation	
Cross Modulation	
Sync Modulation	
Organ Model	
E. Piano Model	
Double Size	
Brass Model	
Detune	[...99]
Detunes the notes that are sounded simultaneously by the Unison function.	
1-1c: Voice Assign Mode	
Here, you can specify how notes will sound when keys are pressed.	
Poly, Mono (Single, Multi)	
Selects whether the sound will be played monophonically or polyphonically.	
Poly: Polyphonic playing	
Mono (Single): Single-triggered monophonic playing	
Mono (Multi): Multi-triggered monophonic playing.	
When Poly is selected, the Retrigger Control and Threshold parameters will be unavailable.	
Retrigger (Retrigger Control)	[Off...MIDI:CC#83]
“Retrigger” refers to the action of resetting the EG and the LFO will return to the beginning of the cycle of its waveform. Here you can select the controller which will specify whether or not the sound will be retriggered when a note-on occurs.	

Program Mode

PROG 1.1: Play

1.1-1: Program

This is the same parameter as for programs of banks other than F.

PG p.2 PROG 1.1-1: Program



1.1-2: P Edit (Perform. Edit)

This is the same parameter as for programs of banks other than F.

However, "Stretch" has no effect for bank F programs.

PG p.3 PROG1.1-2: Perform Edit



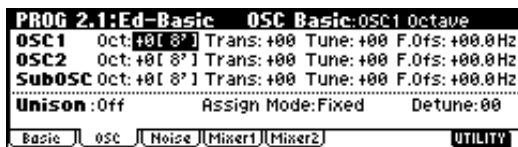
PROG 2.1: Ed-Basic

2.1-1: Basic (Prog Basic)



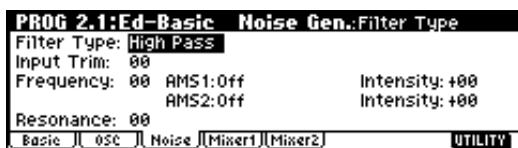
KARMA	PG p.	EXB-MOSS
OSC 1/OSC 2	p.12	1-1a: Multi OSC Setup: OSC 1 (Oscillator 1 Type)/OSC 2 (Oscillator 2 Type)
Sub	p.14	1-2c: Sub OSC: Waveform
Mode	p.12	1-1c: Voice Assign Mode: Poly, Mono
Hold	p.13	1-1c: Voice Assign Mode: Hold
Priority	p.13	1-1c: Voice Assign Mode: Priority
Retrigger	p.12	1-1c: Voice Assign Mode: Retrigger (Retrigger Control)
Threshold	p.12	1-1c: Voice Assign Mode: Threshold (Retrigger Control Threshold)
Type	p.13	1-1d: Scale: Type (Scale Type) GLOBAL 3.1-1a: User Octave Scale (PG p.140), GLOBAL 3.1-2b: User All Notes Scale (PG p.141)
Key	p.13	1-1d: Scale: Key (Scale Key)
Random	p.13	1-1d: Scale: Random

2.1-2: OSC (OSC Basic)



KARMA	PG p.	EXB-MOSS
Oct	p.14	1-2a: OSC 1 Multi OSC Setup: Octave
Trans	p.14	1-2a: OSC 1 Multi OSC Setup Transpose
Tune	p.14	1-2a: OSC 1 Multi OSC Setup: Tune
F.Ofs	p.14	1-2a: OSC 1 Multi OSC Setup: F.Offset (Frequency Offset)
Unison	p.12	1-1b: Unison: Unison
Assign Mode	p.12	1-1b: Unison: Mode
Detune	p.12	1-1b: Unison: Detune

2.1-3: Noise (Noise Gen.)



KARMA	PG p.	EXB-MOSS
Filter Type	p.33	1-5a: Noise Generator: Filter Type
Input Trim	p.33	1-5a: Noise Generator: Input Trim
Frequency	p.33	1-5a: Noise Generator: Frequency (Cutoff Frequency)
AMS1	p.34	1-5b: Frequency Modulation: AMS1 (Alternate Modulation Source 1)
Intensity	p.34	1-5b: Frequency Modulation: Intensity (Cutoff Frequency AMS1 Intensity)
AMS2	p.34	1-5b: Frequency Modulation: AMS2 (Alternate Modulation Source 2)
Intensity	p.34	1-5b: Frequency Modulation: Intensity (Cutoff Frequency AMS2 Intensity)
Resonance	p.33	1-5a: Noise Generator: Resonance

2.1-4: Mixer1/2.1-5: Mixer2

PROG 2.1:Ed-Basic OSC Mixer1:OSC1 Level			
OSC1	:00		AMS: Off Int: +00
OSC2	:00		AMS: Off Int: +00
SubOSC	:00		AMS: Off Int: +00
Noise	:00		AMS: Off Int: +00
Feedback	:00		AMS: Off Int: +00
Basic OSC Noise Mixer1 Mixer2 UTILITY			

KARMA	≡p.	EXB-MOSS
OSC1 Level	p.34	1-6a: Mixer1: OSC1 (OSC1 Output Level)
AMS	p.34	1-6a: Mixer1: AMS (Alternate Modulation Source)
Int	p.34	1-6a: Mixer1: Intensity (Level AMS Intensity)
OSC2 Level	p.34	1-6a: Mixer1: OSC2 (OSC2 Output Level)
AMS	p.34	1-6a: Mixer1: AMS (Alternate Modulation Source)
Int	p.34	1-6a: Mixer1: Intensity (Level AMS Intensity)
SubOSC Level	p.34	1-6a: Mixer1: Sub OSC
AMS	p.34	1-6a: Mixer1: AMS (Alternate Modulation Source)
Int	p.34	1-6a: Mixer1: Intensity (Level AMS Intensity)
Noise Level	p.34	1-6a: Mixer1: Noise
AMS	p.34	1-6a: Mixer1: AMS (Alternate Modulation Source)
Int	p.34	1-6a: Mixer1: Intensity (Level AMS Intensity)
Feedback Level	p.34	1-6a: Mixer1: Feedback
AMS	p.34	1-6a: Mixer1: AMS (Alternate Modulation Source)
Int	p.34	1-6a: Mixer1: Intensity (Level AMS Intensity)

PROG 2.2: Ed-Ctrl

2.2-1: Ctrl (Controls)

PROG 2.2:Ed-Ctrl		Controls:Knob1-B Assign	
Knob B Assign		SW1/2 Assign	
Knob1-B: Knob Mod.1 (CC#17)		SW1: SW1 Mod. (CC#80)	
Knob2-B: Knob Mod.2 (CC#19)		:Toggle	
Knob3-B: Knob Mod.3 (CC#20)		SW2: SW2 Mod. (CC#81)	
Knob4-B: Knob Mod.4 (CC#21)		:Toggle	
ctrls UTILITY			

KARMA	≡p.	EXB-MOSS
Knob1-B		
Knob2-B	p.35	1-7b: Realtime Control Knobs B-Assign
Knob3-B		≡PROG 2.2-1a: Knob B Assign (PG p.10)
Knob4-B		
.....		
SW1		
SW1 Mode	p.35	1-7a: Panel Switch Assign
SW2		≡PROG 2.2-1b: SW1/2 Assign (PG p.10)
SW2 Mode		

PROG 2.3: Ed-OSC

Standard

≡p.14 "EXB-MOSS owner's manual"

2.3-1: Wave

PROG 2.3:Ed-OSC Standard1:Main wave			
Wave	:Saw		
Level:	99		Wave Edge: 99
Waveform: +00		LFO: LFO 2	Intensity: +00
		AMS: Off	Intensity: +00
Triangle: 00		Sine: 00	Phase Shift: +00
Wave WShape Wave WShape UTILITY			

KARMA	≡p.	EXB-MOSS
Main Wave	p.15	1-3a: Wave: Main Wave
Level	p.15	1-3a: Wave: Level
Wave Edge	p.15	1-3a: Wave: Wave Edge
Waveform	p.15	1-3b: Waveform: Waveform
LFO	p.15	1-3b: Waveform: LFO
Intensity	p.15	1-3b: Waveform: Intensity (Waveform Modulation LFO Intensity)
AMS	p.15	1-3b: Waveform: AMS (Alternate Modulation Source)
Intensity	p.15	1-3b: Waveform: Intensity (Waveform AMS Intensity)
.....		
Triangle	p.15	1-3a: Wave: Triangle Level
Sine	p.15	1-3a: Wave: Sine Level
Phase Shift	p.15	1-3a: Wave: Phase Shift (Triangle & Sine Phase Shift)

2.3-2: WShape (Wave Shape)

PROG 2.3:Ed-OSC		Standard1:WShape Input	
Wave Shape			
Input Level: 50	AMS: Off	Intensity: +00	
Table Type: Clip		Offset: +00	
Shape: 50	AMS: Off	Intensity: +00	
Balance: 00	AMS: Off	Intensity: +00	
Wave [WShape]	Wave [WShape]		UTILITY

KARMA	≡ p.	EXB-MOSS
Input Level	p.15	1-3c: Wave Shape: Input (Input Level)
AMS	p.15	1-3c: Wave Shape: AMS (Alternate Modulation Source)
Intensity	p.16	1-3c: Wave Shape: Intensity (Input Level AMS Intensity)
Table Type	p.16	1-3c: Wave Shape: Type (Wave Shape Table Type)
Offset	p.16	1-3c: Wave Shape: Offset (Wave Shape Offset)
Shape	p.16	1-3c: Wave Shape: Shape
AMS	p.16	1-3c: Wave Shape: AMS (Alternate Modulation Source)
Intensity	p.16	1-3c: Wave Shape: Intensity (Shape AMS Intensity)
Balance	p.16	1-3c: Wave Shape: Balance
AMS	p.16	1-3c: Wave Shape: AMS (Alternate Modulation Source)
Intensity	p.16	1-3c: Wave Shape: Intensity (Balance AMS Intensity)

Comb Filter

≡ p.17 “EXB-MOSS owner’s manual”

2.3-1: Comb F

PROG 2.3:Ed-OSC		Comb F.1:Input	
Input :SUBOSC+Noise	Level:00	Noise Level:99	
	AMS: Off	Intensity: +00	
Feedback :90	AMS1:Off	Intensity: +00	
	AMS2:Off	Intensity: +00	
High Damp:50	AMS: Off	Intensity: +00	
Comb F	Comb F		UTILITY

KARMA	≡ p.	EXB-MOSS
Input	p.17	1-3a: Input: Input
Level	p.17	1-3a: Input: Level (Input Wave Level)
Noise Level	p.17	1-3a: Input: Noise Level
Pulse Width	p.17	1-3a: Input: Pulse Width
AMS	p.17	1-3a: Input: AMS (Alternate Modulation Source)
Intensity	p.17	1-3a: Input: Intensity (Input Wave Level AMS Intensity)
.....		
Feedback	p.17	1-3b: Feedback: Fbk (Feed Back)
AMS1	p.17	1-3b: Feedback: AMS1 (Alternate Modulation Source 1)
Intensity	p.17	1-3b: Feedback: Intensity (Feedback AMS1 Intensity)
AMS2	p.17	1-3b: Feedback: AMS2 (Alternate Modulation Source 2)
Intensity	p.17	1-3b: Feedback: Intensity (Feedback AMS2 Intensity)
.....		
High Damp	p.18	1-3c: High Damp: H. D (High Damp)
AMS	p.18	1-3c: High Damp: AMS (Alternate Modulation Source)
Intensity	p.18	1-3c: High Damp: Intensity (High Damp AMS Intensity)

VPM

≡ p.18 “EXB-MOSS owner’s manual”

2.3-1: Carrier

PROG 2.3:Ed-OSC		UPM1:Carrier Wave	
Carrier :Sine	AMS1:Off	Intensity: +00	
Level: 99	AMS2:Off	Intensity: +00	
Wave Shape:00	AMS1:Off	Intensity: +00	
Type: 1	AMS2:Off	Intensity: +00	
Feedback :00			
Carrier [Mod.]	Carrier [Mod.]		UTILITY

KARMA	≡ p.	EXB-MOSS
Carrier Wave	p.18	1-3a: Carrier: Wave
Level	p.18	1-3a: Carrier: Level
.....		
AMS1	p.18	1-3a: Carrier: AMS1 (Alternate Modulation Source 1)
Intensity	p.18	1-3a: Carrier: Intensity (Level AMS1 Intensity)
AMS2	p.18	1-3a: Carrier: AMS2 (Alternate Modulation Source 2)
Intensity	p.18	1-3a: Carrier: Intensity (Level AMS2 Intensity)
.....		
Wave Shape	p.18	1-3a: Carrier: Wave Shape
Type	p.19	1-3a: Carrier: Type (Wave Shape Type)
.....		
AMS1	p.19	1-3a: Carrier: AMS1 (Alternate Modulation Source 1)
Intensity	p.19	1-3a: Carrier: Intensity (Shape AMS1 Intensity)
AMS2	p.19	1-3a: Carrier: AMS2 (Alternate Modulation Source 2)
Intensity	p.19	1-3a: Carrier: Intensity (Shape AMS2 Intensity)
.....		
Feedback	p.19	1-3a: Carrier: Feedback

2.3-2: Mod. (Modulator)

PROG 2.3:Ed-OSC		UPM1:Modulator Wave	
Modulator	Sine	AMS1:Off	Intensity: +00
Level:	00	AMS2:Off	Intensity: +00
Frequency Coarse:	01	AMS1:Off	Intensity: +00
Fine:	+00	AMS2:Off	Intensity: +00
Carrier	Mod.	Carrier	Mod.
			UTILITY

KARMA	☞p.	EXB-MOSS
Modulator Wave	p.19	1-3b: Modulator: Wave
Level	p.19	1-3b: Modulator: Level
.....		
AMS1	p.19	1-3b: Modulator: AMS1 (Alternate Modulation Source 1)
Intensity	p.19	1-3b: Modulator: Intensity (Level AMS1 Intensity)
AMS2	p.19	1-3b: Modulator: AMS2 (Alternate Modulation Source 2)
Intensity	p.19	1-3b: Modulator: Intensity (Level AMS2 Intensity)
.....		
Frequency Coarse	p.19	1-3b: Modulator: Frequency Coarse
Fine	p.19	1-3b: Modulator: Fine
.....		
AMS1	p.19	1-3b: Modulator: AMS1 (Alternate Modulation Source 1)
Intensity	p.19	1-3b: Modulator: Intensity (Frequency AMS1 Intensity)
AMS2	p.19	1-3b: Modulator: AMS2 (Alternate Modulation Source 2)
Intensity	p.19	1-3b: Modulator: Intensity (Frequency AMS2 Intensity)

Resonance

☞p.20 "EXB-MOSS owner's manual"

2.3-1: Input

PROG 2.3:Ed-OSC		Resonance1:Input	
Input	Noise	AMS1:Off	Intensity: +00
Level:	99	AMS2:Off	Intensity: +00
Resonance Modulation			
		AMS: Off	Intensity: +00
Input	BPF	Input	BPF
			UTILITY

KARMA	☞p.	EXB-MOSS
Input	p.20	1-3a: Input: Input
Level	p.20	1-3a: Input: Level
AMS1	p.20	1-3a: Input: AMS1 (Alternate Modulation Source 1)
Intensity	p.20	1-3a: Input: Intensity (Level AMS1 Intensity)
AMS2	p.20	1-3a: Input: AMS2 (Alternate Modulation Source 2)
Intensity	p.20	1-3a: Input: Intensity (Level AMS2 Intensity)
.....		
AMS	p.20	1-3c: Resonance Modulation: AMS (Alternate Modulation Source)
Intensity	p.20	1-3c: Resonance Modulation: Intensity (Resonance AMS Intensity)

2.3-2: BPF

PROG 2.3:Ed-OSC		Resonance1:BPF1 Level				
Level:	F.Coarse:	AMS:	Int:	F.Fine:	Reso:	
BPF1	99	01	Off	+00	+00	90
BPF2	99	02	Off	+00	+00	90
BPF3	99	03	Off	+00	+00	90
BPF4	99	04	Off	+00	+00	90
Input	BPF	Input	BPF			
					UTILITY	

KARMA	☞p.	EXB-MOSS
Level	p.20	1-3b: BPF Parameters: Level
.....		
F.Coarse	p.20	1-3b: BPF Parameters: Coarse
AMS	p.20	1-3b: BPF Parameters: AMS (Alternate Modulation Source)
Int	p.20	1-3b: BPF Parameters: Int (BPF Frequency AMS Intensity)
.....		
F.Fine	p.20	1-3b: BPF Parameters: Fine
.....		
Reso	p.20	1-3b: BPF Parameters: Reso (Resonance)

Ring Modulation

☞p.21 "EXB-MOSS owner's manual"

2.3-1: Ring

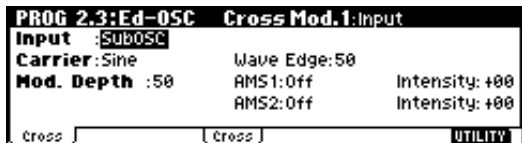
PROG 2.3:Ed-OSC		Ring Mod.1:Input	
Input	SUBOSC	Wave Edge:50	Type: 1
Carrier	Sine	AMS1:Off	Intensity: +00
Mod. Depth	:99	AMS2:Off	Intensity: +00
Ring		Ring	
			UTILITY

KARMA	☞p.	EXB-MOSS
Input	p.21	1-3a: Wave: Input
Carrier Wave	p.21	1-3a: Wave: Carrier
Wave Edge	p.21	1-3a: Wave: Wave Edge
Type	p.21	1-3a: Wave: Type
Modulation Depth	p.21	1-3b: Modulation Depth: Depth
AMS1	p.21	1-3b: Modulation Depth: AMS1 (Alternate Modulation Source 1)
Intensity	p.21	1-3b: Modulation Depth: Intensity (Modulation Depth AMS1 Intensity)
AMS2	p.21	1-3b: Modulation Depth: AMS2 (Alternate Modulation Source 2)
Intensity	p.21	1-3b: Modulation Depth: Intensity (Modulation Depth AMS2 Intensity)

Cross Modulation

☞p.22 “EXB-MOSS owner’s manual”

2.3-1: Cross

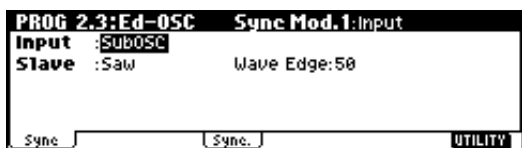


KARMA	☞p.	EXB-MOSS
Input	p.22	1-3a: Wave: Input
Carrier Wave	p.22	1-3a: Wave: Carrier
Wave Edge	p.22	1-3a: Wave: Wave Edge
Modulation Depth	p.22	1-3b: Modulation Depth: Depth
AMS1	p.22	1-3b: Modulation Depth: AMS1 (Alternate Modulation Source 1)
Intensity	p.22	1-3b: Modulation Depth: Intensity (Modulation Depth AMS1 Intensity)
AMS2	p.22	1-3b: Modulation Depth: AMS2 (Alternate Modulation Source 2)
Intensity	p.22	1-3b: Modulation Depth: Intensity (Modulation Depth AMS2 Intensity)

Sync Modulation

☞p.23 “EXB-MOSS owner’s manual”

2.3-1: Sync

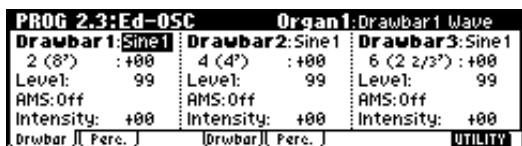


KARMA	☞p.	EXB-MOSS
Input	p.23	1-3a: Wave: Input
Slave Wave	p.23	1-3a: Wave: Slave
Wave Edge	p.23	1-3a: Wave: Wave Edge

Organ Model

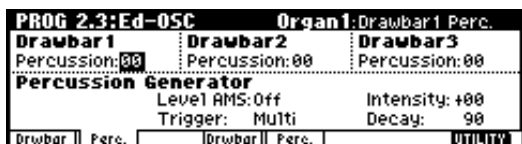
☞p.23 “EXB-MOSS owner’s manual”

2.3-1: Drawbar



KARMA	☞p.	EXB-MOSS
Drawbar1...3 Wave	p.23	1-3a: Tone Generator: Drawbar1: Wave
Drawbar1...3 Coarse	p.23	1-3a: Tone Generator: Drawbar1: Coarse (Harmonics Coarse)
Drawbar1...3 Fine	p.23	1-3a: Tone Generator: Drawbar1: Fine (Harmonics Coarse Fine)
Level	p.23	1-3a: Tone Generator: Drawbar1: Level
AMS	p.23	1-3a: Tone Generator: Drawbar1: AMS (Alternate Modulation Source)
Intensity	p.24	1-3a: Tone Generator: Drawbar1: Intensity (Level AMS Intensity)

2.3-2: Perc.

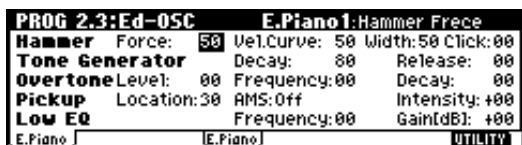


KARMA	☞p.	EXB-MOSS
Percussion	p.24	1-3a: Tone Generator: Drawbar1: Percussion
Level AMS	p.24	1-3b: Percussion Generator: Level AMS (Level Alternate Modulation Source)
Intensity	p.24	1-3b: Percussion Generator: Intensity (Level AMS Intensity)
Trigger	p.24	1-3b: Percussion Generator: Trigger
Decay	p.24	1-3b: Percussion Generator: Decay

E. Piano Model

☞p.24 “EXB-MOSS owner’s manual”

2.3-1: E.Piano



KARMA	☞p.	EXB-MOSS
Force	p.24	1-3a: Hammer: Force
Vel. Curve	p.24	1-3a: Hammer: Force Velocity Curve
Width	p.24	1-3a: Hammer: Width (Hammer Width)
Click	p.24	1-3a: Hammer: Click Noise Level
Decay	p.25	1-3b: Tone Generator: Decay
Release	p.25	1-3b: Tone Generator: Release
Level	p.25	1-3c: Overtone: Level
Frequency	p.25	1-3c: Overtone: Frequency
Decay	p.25	1-3c: Overtone: Decay
Location	p.25	1-3d: Pickup: Location
AMS	p.25	1-3d: Pickup: AMS (Alternate Modulation Source)
Intensity	p.25	1-3d: Pickup: Intensity (Pickup Location AMS Intensity)
Frequency	p.25	1-3e: Low EQ: Frequency
Gain[dB]	p.25	1-3e: Low EQ: Gain

Brass Model

☞p.25 "EXB-MOSS owner's manual"

2.3-1: Brass

PROG 2.3:Ed-OSC		Brass:Inst Type	
Inst Type: Brass 1	Jump Bend: <input checked="" type="checkbox"/> JS(+X) <input checked="" type="checkbox"/> JS(-X)	Int: +80	Strength: 00 Noise: 00
Breath Pres.EG: EG 1	Int: +00 2: 0ff	Int: +00	Int: +00
Pres.AMS 1: Off	Int: +00	Bell Tone: 50	Reso: 10
Lip: 80 AMS: Off	Frequency: 00	Q: 00	Gain[dB]: +00
Peaking EQ			
Brass			UTILITY

KARMA	☞p.	EXB-MOSS
Inst Type	p.25	1-3a: Inst Type: Inst Type
Jump.Bend JS(+X)	p.26	1-3a: Jump Bend: JX(+X) (Joystick +X)
Jump.Bend JS(-X)	p.26	1-3a: Jump Bend: JX(-X) (Joystick -X)
Pres.EG	p.26	1-3b: Breath Pressure: EG
Int	p.26	1-3b: Breath Pressure: Intensity (Pressure EG Intensity)
Strength	p.26	1-3b: Breath Pressure: Strength
Noise	p.26	1-3b: Breath Pressure: Breath Noise
Pres.AMS1	p.26	1-3b: Breath Pressure: AMS1 (Alternate Modulation Source1)
Int	p.26	1-3b: Breath Pressure: Intensity (Pressure AMS1 Intensity)
2	p.26	1-3b: Breath Pressure: AMS2 (Alternate Modulation Source2)
Int	p.26	1-3b: Breath Pressure: Intensity (Pressure AMS2 Intensity)
Lip	p.26	1-3c: Lip Character: Lip
AMS	p.26	1-3c: Lip Character: AMS (Alternate Modulation Source)
Int	p.26	1-3c: Lip Character: Intensity (Lip Character AMS Intensity)
Tone	p.26	1-3d: Bell Character: Tone
Reso	p.26	1-3d: Bell Character: Resonance
Frequency	p.26	1-3e: Peaking EQ: Frequency
Q	p.26	1-3e: Peaking EQ: Q
Gain[dB]	p.26	1-3e: Peaking EQ: Gain

Reed Model

☞p.27 "EXB-MOSS owner's manual"

2.3-1: Reed

PROG 2.3:Ed-OSC		Reed:Inst Type	
Inst Type: Hard Sax 1	Jump Bend: <input checked="" type="checkbox"/> JS(+X) <input checked="" type="checkbox"/> JS(-X)	Int: +70	Noise: 00
Breath Pres.EG: EG 1	Int: +00 2: 0ff	Int: +00	Int: +00
Pres.AMS 1: Off	Int: +70	Bell Tone: 30	Reso: 10
Reed AMS: EG 2	Frequency: 00	Q: 00	Gain[dB]: +00
Peaking EQ			
Reed WShape			UTILITY

KARMA	☞p.	EXB-MOSS
Inst Type	p.27	1-3a: Inst Type: Inst Type
Jump.Bend JS(+X)	p.27	1-3a: Jump Bend: JX(+X) (Joystick +X)
Jump.Bend JS(-X)	p.27	1-3a: Jump Bend: JX(-X) (Joystick -X)
Pres.EG	p.27	1-3b: Breath Pressure: EG
Int	p.27	1-3b: Breath Pressure: Intensity (Pressure EG Intensity)
Noise	p.27	1-3b: Breath Pressure: Breath Noise
Pres.AMS 1	p.27	1-3b: Breath Pressure: AMS1 (Alternate Modulation Source1)
Int	p.27	1-3b: Breath Pressure: Intensity (Pressure AMS1 Intensity)
2	p.27	1-3b: Breath Pressure: AMS2 (Alternate Modulation Source2)
Int	p.27	1-3b: Breath Pressure: Intensity (Pressure AMS2 Intensity)
AMS	p.28	1-3c: Reed Character: AMS (Alternate Modulation Source)
Int	p.28	1-3c: Reed Character: Intensity (Reed AMS Intensity)
Tone	p.28	1-3d: Bell Character: Tone
Reso	p.28	1-3d: Bell Character: Reso
Frequency	p.28	1-3f: Peaking EQ: Frequency
Q	p.28	1-3f: Peaking EQ: Q
Gain[dB]	p.28	1-3f: Peaking EQ: Gain

2.3-2: WShape

PROG 2.3:Ed-OSC		Reed:WShape Table	
Wave Shape			
Table Type: Clip		Offset: +00	
Shape: 00	AMS: Off	Intensity: +00	
Reed WShape			UTILITY

KARMA	☞p.	EXB-MOSS
Table Type	p.28	1-3e: Wave Shape: Type (Wave Shape Table Type)
Offset	p.28	1-3e: Wave Shape: Offset
Shape	p.28	1-3e: Wave Shape: Shape
AMS	p.28	1-3e: Wave Shape: AMS (Alternate Modulation Source)
Intensity	p.28	1-3e: Wave Shape: Intensity (Shape AMS Intensity)

Plucked String Model

©p.29 "EXB-MOSS owner's manual"

2.3-1: String

PRG 2.3:Ed-OSC		Plucked Str: Picking Point	
String	Picking Point: 80	AMS: Off	Int: +00
	Damp: 40 KTr: +40	AMS: Off	Int: +00
	Decay: 80 KTr: +00	Release: 40	
	Dispersion: 50	AMS: Off	Int: +00
String [Attack]			UTILITY

KARMA

Picking Point
AMS
Int
Damp
KTr
AMS
Int
Decay
KTr
Release
Dispersion
AMS
Int

EXB-MOSS

p.29 1-3c: String: Picking Point
p.30 1-3c: String: AMS (Alternate Modulation Source)
p.30 1-3c: String: Intensity (Picking Point AMS Intensity)
p.30 1-3c: String: Damp
p.30 1-3c: String: KTr (Damp Keyboard Track)
p.30 1-3c: String: AMS (Alternate Modulation Source)
p.30 1-3c: String: Intensity (Damp AMS Intensity)
p.30 1-3c: String: Decay
p.30 1-3c: String: KTr (Decay Keyboard Track)
p.30 1-3c: String: Release
p.30 1-3c: String: Dispersion
p.30 1-3c: String: AMS (Alternate Modulation Source)
p.30 1-3c: String: Intensity (Dispersion AMS Intensity)

2.3-2: Attack

PRG 2.3:Ed-OSC		Plucked Str: Attack Level	
Attack	Level: 99 Vel: +00	Noise: 30 Vel: +00	
Curve	Up: 30 Vel: +00	Down: 30 Vel: +00	
Harmonics	Point: 64	Ctrl: Off	Int: +00
Pickup: On	Location: 10	AMS: Off	Int: +00
Low EQ	Frequency: 00	Gain[dB]: +00	Boost: 00
String [Attack]			UTILITY

KARMA

Level
Vel.
Noise
Vel.
Up
Vel.
Down
Vel.
Point
Ctrl
Int
Pickup
Location
AMS
Int
Frequency
Gain[dB]
Boost

EXB-MOSS

p.29 1-3a: Attack: Attack Level
p.29 1-3a: Attack: Velocity (Attack Level Velocity Control)
p.29 1-3a: Attack: Noise Level
p.29 1-3a: Attack: Velocity (Noise Level Velocity Control)
p.29 1-3b: Attack Curve: Up (Curve Up)
p.29 1-3b: Attack Curve: Velocity (Curve Up Velocity Control)
p.29 1-3b: Attack Curve: Down (Curve Down)
p.29 1-3b: Attack Curve: Velocity (Curve Down Velocity Control)
p.30 1-3d: Harmonics: Point
p.31 1-3d: Harmonics: Ctrl (Control)
p.31 1-3d: Harmonics: Intensity (Harmonics Control Intensity)
p.31 1-3e: Pickup: Pickup
p.31 1-3e: Pickup: Location
p.31 1-3e: Pickup: AMS (Alternate Modulation Source)
p.31 1-3e: Pickup: Intensity (Pickup Location AMS (Alternate Intensity))
p.31 1-3f: Low EQ: Frequency
p.31 1-3f: Low EQ: Gain
p.31 1-3f: Low EQ: Low Boost

Bowed String Model

©p.31 "EXB-MOSS owner's manual"

2.3-1: String

PRG 2.3:Ed-OSC		Bowed Str: Bowing Point	
String	Bowing Point: 80	AMS: Off	Int: +00
	Damp: 50	AMS: Off	Int: +00
	KTr Key: C4	Ramp Low: +00	High: +00
	Dispersion: 50	AMS: Off	Int: +00
	Bridge Reflection: 80	AMS: Off	Int: +00
String [Bow]			UTILITY

KARMA

Bowing Point
AMS
Int
Damp
AMS
Int
KTr Key
Ramp Low
Ramp High
Dispersion
AMS
Int
Bridge Reflection
AMS
Int

EXB-MOSS

p.32 1-3c: String: Bowing Point
p.32 1-3c: String: AMS (Alternate Modulation Source)
p.32 1-3c: String: Intensity (Bowing Point AMS Intensity)
p.32 1-3c: String: Damp
p.32 1-3c: String: AMS (Alternate Modulation Source)
p.32 1-3c: String: Intensity (Damp AMS Intensity)
p.32 1-3c: String: Damp Ktr Key (Damp Keyboard Track Key)
p.32 1-3c: String: Ramp Low
p.33 1-3c: String: Ramp High
p.33 1-3c: String: Dispersion
p.33 1-3c: String: AMS (Alternate Modulation Source)
p.33 1-3c: String: Intensity (Dispersion AMS Intensity)
p.33 1-3c: String: Bridge Reflection
p.33 1-3c: String: AMS (Alternate Modulation Source)
p.33 1-3c: String: Intensity (Bridge Reflection AMS Intensity)

2.3-2: Bow

PROG 2.3:Ed-OSC		Bowed Str:Differential	
Bow Speed	<input checked="" type="checkbox"/> Differential	EG: EG 1	Int: +50
AMS1:Off	Int: +00	AMS2:Off	Int: +00
Bow Pressure	Rosin:30		
EG: EG 2	Int: +80	AMS: Off	Int: +00
Peaking EQ	Frequency:00	Q:00	Gain[dB]: +00
String] Bow			UTILITY

KARMA	≡p.	EXB-MOSS
Differential	p.32	1-3a: Bow Speed: Differential
EG	p.31	1-3a: Bow Speed: EG
Int	p.31	1-3a: Bow Speed: Int (Seed Modulation EG Intensity)
AMS1	p.31	1-3a: Bow Speed: AMS1 (Alternate Modulation Source 1)
Int	p.31	1-3a: Bow Speed: Intensity (Speed AMS1 Intensity)
AMS2	p.31	1-3a: Bow Speed: AMS2 (Alternate Modulation Source 2)
Int	p.32	1-3a: Bow Speed: Intensity (Speed AMS2 Intensity)
Rosin	p.32	1-3a: Bow Speed: Rosin
EG	p.32	1-3b: Bow Pressure: EG
Int	p.32	1-3b: Bow Pressure: Int (Pressure EG Intensity)
AMS	p.32	1-3b: Bow Pressure: AMS (Alternate Modulation Source)
Int	p.32	1-3b: Bow Pressure: Int (Pressure AMS Intensity)
Frequency	p.33	1-3d: Peaking EQ: Frequency
Q	p.33	1-3d: Peaking EQ: Q
Gain[dB]	p.33	1-3d: Peaking EQ: Gain

PROG 3.1: Ed -Pitch

≡p.36 "EXB-MOSS owner's manual"

3.1-1: Common

PROG 3.1:Ed-Pitch		Common:JS(+X) Intensity	
Pitch Bend	JS(+X):+00	Step:Continuous	
	JS(-X): +00	Step:Continuous	
Common Pitch Mod.	AMS:Off	Intensity: +00	
Portamento	<input type="checkbox"/> Enable	<input type="checkbox"/> Fingered	
	Time: 00	AMS:Off	Intensity: +00
Common] OSC1] OSC2] SubOSC			UTILITY

KARMA	≡p.	EXB-MOSS
JS(+X)	p.37	2-4a: Pitch Bend: JS(+X) (Joystick Intensity +X)
Step	p.37	2-4a: Pitch Bend: Step (Joystick Step +X)
JS(-X)	p.37	2-4a: Pitch Bend: JS(-X) (Joystick Intensity -X)
Step	p.37	2-4a: Pitch Bend: Step (Joystick Step -X)
AMS	p.37	2-4b: Common Pitch Modulation: AMS (Alternate Modulation Source)
Intensity	p.37	2-4b: Common Pitch Modulation: Intensity (Common Pitch AMS Intensity)
.....		
Enable	p.37	2-4c: Portamento: Enable
Fingered	p.37	2-4c: Portamento: Fingered
Time	p.37	2-4c: Portamento: Time
AMS	p.37	2-4c: Portamento: AMS (Alternate Modulation Source)
Intensity	p.37	2-4c: Portamento: Intensity (Portamento Time AMS Intensity)

3.1-2...4: OSC1...SubOSC

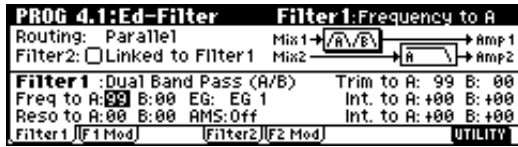
PROG 3.1:Ed-Pitch		OSC1:Slope Center Key	
Pitch Slope	Center Key: C4		
	Ramp Low: +1.00	High: +1.00	
Modulation	AMS1:Off	Intensity: +00	
	AMS2:Off	AMS:Off	Int: +00
		Intensity: +00	
Common] OSC1] OSC2] SubOSC			UTILITY

KARMA	≡p.	EXB-MOSS
Center Key	p.36	2-1a: Pitch Slope: Center Key
Ramp Low	p.36	2-1a: Pitch Slope: Ramp Low
Ramp High	p.36	2-1a: Pitch Slope: Ramp High
.....		
AMS1	p.36	2-1b: Pitch Modulation: AMS1 (Alternate Modulation Source 1)
Intensity	p.36	2-1b: Pitch Modulation: Intensity (Pitch AMS1 Intensity)
AMS	p.36	2-1b: Pitch Modulation: AMS (AMS1 Intensity Alternate Modulation Source)
Int	p.36	2-1b: Pitch Modulation: Intensity (AMS1 Int AMS Intensity)
AMS2	p.36	2-1b: Pitch Modulation: AMS2 (Alternate Modulation Source 2)
Intensity	p.36	2-1b: Pitch Modulation: Intensity (Pitch AMS2 Intensity)

PROG 4.1: Ed-Filter

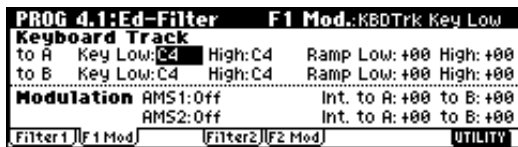
☞p.38 “EXB-MOSS owner’s manual”

4.1-1: Filter1/4.1-3: Filter2



KARMA	☞p.	EXB-MOSS
Routing	p.38	3-1a: Routing: Routing
Filter2	p.38	3-1a: Routing: Filter2
.....		
Filter1 Type	p.38	3-1b: Filter Type: Filter Type
Trim to A	p.38	3-1b: Filter Type: A Trim
Trim to B	p.38	3-1b: Filter Type: B Trim
Freq to A	p.38	3-1c: Filter A: Frequency (Cutoff Frequency)
Freq to B	p.38	3-1c: Filter A: Frequency (Cutoff Frequency)
EG	p.38	3-1c: Filter A: EG (Cutoff Frequency Modulation EG)
Int. to A	p.39	3-1c: Filter A: Intensity (Cutoff Frequency Mod. EG Intensity)
Int. to B	p.39	3-1c: Filter A: Intensity (Cutoff Frequency Mod. EG Intensity)
Reso to A	p.39	3-1c: Filter A: Resonance
Reso to B	p.39	3-1c: Filter A: Resonance
AMS	p.39	3-1c: Filter A: AMS (Alternate Modulation Source)
Int. to A	p.39	3-1c: Filter A: Intensity (Resonance AMS Intensity)
Int. to B	p.39	3-1c: Filter A: Intensity (Resonance AMS Intensity)

4.1-2: F1 Mod/4.1-4: F2 Mod

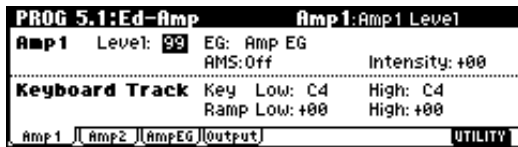


KARMA	☞p.	EXB-MOSS
to A Key Low	p.39	3-2a: FilterA/B Keyboard Track: Filter A: Key Low
to A Key High	p.39	3-2a: FilterA/B Keyboard Track: Filter A: Key High
to A Ramp Low	p.39	3-2a: FilterA/B Keyboard Track: Filter A: Ramp Low
to A Ramp High	p.39	3-2a: FilterA/B Keyboard Track: Filter A: Ramp High
to B Key Low	p.39	3-2a: FilterA/B Keyboard Track: Filter A: Key Low
to B Key High	p.39	3-2a: FilterA/B Keyboard Track: Filter A: Key High
to B Ramp Low	p.39	3-2a: FilterA/B Keyboard Track: Filter A: Ramp Low
to B Ramp High	p.39	3-2a: FilterA/B Keyboard Track: Filter A: Ramp High
.....		
AMS1	p.40	3-2b: Filter A/B Modulation: Filter A: AMS1 (Alternate Modulation Source 1)
Int. to A	p.40	3-2b: Filter A/B Modulation: Filter A: Intensity (Cutoff Frequency AMS1 Intensity)
to B	p.40	3-2b: Filter A/B Modulation: Filter A: Intensity (Cutoff Frequency AMS1 Intensity)
AMS2	p.40	3-2b: Filter A/B Modulation: Filter A: AMS2 (Alternate Modulation Source 2)
Int. to A	p.40	3-2b: Filter A/B Modulation: Filter A: Intensity
to B	p.40	3-2b: Filter A/B Modulation: Filter A: Intensity (Cutoff Frequency AMS2 Intensity)

PROG 5.1: Ed-Amp

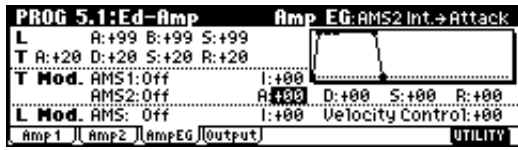
☞p.40 “EXB-MOSS owner’s manual”

5.1-1: Amp1/5.1-2: Amp2



KARMA	☞p.	EXB-MOSS
Level	p.40	4-1a: Amp Level: Amp Level
EG	p.40	4-1a: Amp Level: EG (Amplitude Modulation EG)
AMS	p.40	4-1a: Amp Level: AMS (Alternate Modulation Source)
Intensity	p.40	4-1a: Amp Level: Intensity (Amplitude AMS Intensity)
.....		
Key Low	p.40	4-1b: Keyboard Track: Key Low
Key High	p.40	4-1b: Keyboard Track: Key High
Ramp Low	p.41	4-1b: Keyboard Track: Ramp Low
Ramp High	p.41	4-1b: Keyboard Track: Ramp High

5.1-3: AmpEG



KARMA	☞p.	EXB-MOSS
A (Attack Level)	p.41	4-3a: Level: Attack (Attack Level)
B (Break Level)	p.41	4-3a: Level: Break (Break Level)
S (Sustain Level)	p.41	4-3a: Level: Sustain (Sustain Level)
A (Attack Time)	p.41	4-3b: Time: Attack (Attack Time)
D (Decay Time)	p.41	4-3b: Time: Decay (Decay Time)
S (Slope Time)	p.41	4-3b: Time: Slope (Slope Time)
R (Release Time)	p.41	4-3b: Time: Release (Release Time)
.....		
AMS1	p.42	4-3d: Time Modulation: AMS1 (Alternate Modulation Source 1)
I (Intensity)	p.42	4-3d: Time Modulation: Intensity (EG Time AMS1 Intensity)
AMS2	p.42	4-3d: Time Modulation: AMS2 (Alternate Modulation Source 2)
A	p.42	4-3d: Time Modulation: At (Attack Time AMS2 Intensity)
D	p.42	4-3d: Time Modulation: Dc (Decay Time AMS2 Intensity)
S	p.42	4-3d: Time Modulation: Si (Slope Time AMS2 Intensity)
R	p.42	4-3d: Time Modulation: Ri (Release Time AMS2 Intensity)
.....		
AMS	p.41	4-3c: Level Modulation: AMS (Alternate Modulation Source)
I (Intensity)	p.41	4-3c: Level Modulation: Intensity (EG Level AMS Intensity)
Velocity Control	p.42	4-3c: Level Modulation: Velocity Control

5.1-4: Output (Output/Pan)

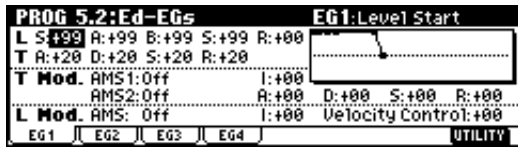


KARMA	☞p.	EXB-MOSS
Level	p.42	4-4a: Output Level: Output Level
Pan	p.42	4-4b: Pan: Pan
AMS	p.42	4-4b: Pan: AMS (Alternate Modulation Source)
Intensity	p.42	4-4b: Pan: Intensity (Panpot AMS Intensity)

PROG 5.2: Ed-EGs

☞p.45 "EXB-MOSS owner's manual"

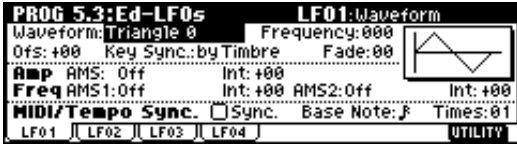
5.2-1...4: EG1...EG4



KARMA	☞p.	EXB-MOSS
S (Start Level)	p.45	6-1a: Level: Start (Start Level)
A (Attack Level)	p.45	6-1a: Level: Attack (Attack Level)
B (Break Level)	p.45	6-1a: Level: Break (Break Level)
S (Sustain Level)	p.45	6-1a: Level: Sustain (Sustain Level)
R (Release Level)	p.45	6-1a: Level: Release (Release Level)
A (Attack Time)	p.45	6-1b: Time: Attack (Attack Time)
D (Decay Time)	p.45	6-1b: Time: Decay (Decay Time)
S (Slope Time)	p.45	6-1b: Time: Slope (Slope Time)
R (Release Time)	p.45	6-1b: Time: Release (Release Time)
.....		
AMS1	p.45	6-1d: Time Modulation: AMS1 (Alternate Modulation Source 1)
I (Intensity)	p.45	6-1d: Time Modulation: Intensity (EG Time AMS1 Intensity)
AMS2	p.46	6-1d: Time Modulation: AMS2 (Alternate Modulation Source 2)
A	p.46	6-1d: Time Modulation: At (Attack Time AMS2 Intensity)
D	p.46	6-1d: Time Modulation: Dc (Decay Time AMS2 Intensity)
S	p.46	6-1d: Time Modulation: Si (Slope Time AMS2 Intensity)
R	p.46	6-1d: Time Modulation: Ri (Release Time AMS2 Intensity)
.....		
AMS	p.45	6-1c: Level Modulation: AMS (Alternate Modulation Source)
I (Intensity)	p.45	6-1c: Level Modulation: Intensity (EG Level AMS Intensity)
Velocity Control	p.45	6-1c: Level Modulation: Velocity Control

PROG 5.3: Ed-LFOs

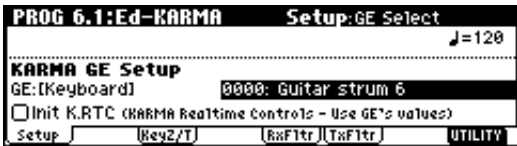
☞ p.43 “EXB-MOSS owner’s manual”
 5.3-1...4: LFO1...LFO4



KARMA	☞ p.	EXB-MOSS
Waveform	p.43	5-1a: LFO1: Waveform
Frequency	p.43	5-1a: LFO1: Frequency
Ofs	p.43	5-1a: LFO1: Offset
Key Sync	p.43	5-1a: LFO1: Key Sync
Fade	p.44	5-1a: LFO1: Fade
.....		
AMS	p.43	5-1a: LFO1: Amplitude AMS (Alternate Modulation Source 1)
Int	p.43	5-1a: LFO1: Intensity (Amplitude AMS Intensity)
AMS1	p.44	5-1b: Frequency Modulation: AMS1 (Alternate Modulation Source 1)
Int	p.44	5-1b: Frequency Modulation: Intensity (Frequency AMS1 Intensity)
AMS2	p.44	5-1b: Frequency Modulation: AMS2 (Alternate Modulation Source 2)
Int	p.44	5-b: Frequency Modulation: Intensity (Frequency AMS2 Intensity)
.....		
Sync.	p.44	5-1c: Frequency MIDI/Tempo Sync.: MIDI/Tempo Sync.
Base Note	p.44	5-1c: Frequency MIDI/Tempo Sync.: Base Note
Times	p.44	5-1c: Frequency MIDI/Tempo Sync.: Times
		☞ GLOBAL 2.1-1a: MIDI, “MIDI Clock” (PG p.137)

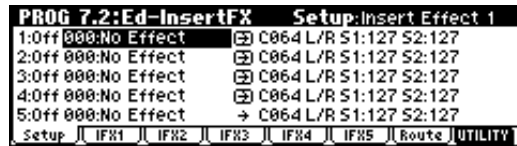
PROG 6.1: Ed-Arp.

This is the same parameter as for programs of banks other than F.
 ☞ PG p.26 PROG 6.1: Ed-KARMA.



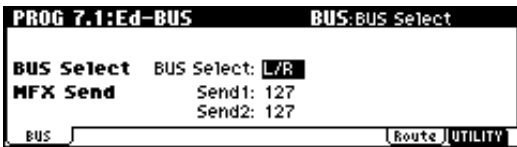
PROG 7.2: Ed-InsertFX

This is the same parameter as for programs of banks other than F.
 ☞ PG p.38 PROG 7.2: Ed-InsertFX



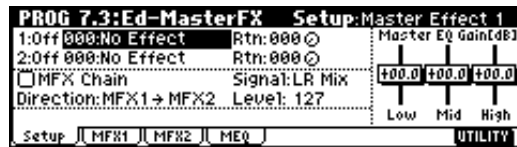
PROG 7.1: Ed-BUS

This is the same parameter as for programs of banks other than F.
 ☞ PG p.37 PROG 7.1: Ed-BUS



PROG 7.3: Ed-MasterFX

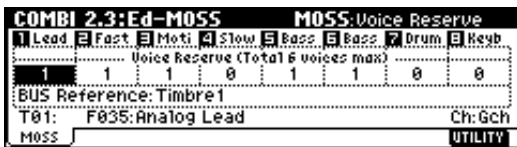
This is the same parameter as for programs of banks other than F.
 ☞ PG p.40 PROG 7.3: Ed-MasterFX



Combination Mode

COMBI 2.3: Ed-MOSS

2.3-1: MOSS
 ☞ p.272 “Editing a combination”



KARMA	☞ p.	EXB-MOSS
Voice Reserve	p.47	4-3: MOSS Setup: Voice Allocation Reserve (Total Max:6voices)
BUS Select Reference	p.47	4-3: MOSS Setup: MOSS BUS Select Reference

Sequencer Mode

SEQ 2.3: MOSS

2.3-1: MOSS

☞p.272 "Editing a combination"

☞p.273 "Sequencer, Song Play mode"

SEQ 2.3:MOSS								MOSS:Voice Reserve	
Lead	Fast	Moti	Slow	Bass	Bass	Drum	Reyb		
1	1	1	0	1	1	0	0		
Voice Reserve (Total 6 voices max)									
BUS Reference: Track01									
T01: TRACK 01		T01		F035:Analog Lead				Ch 01	
MOS.#		MOS.16						UTILITY	

Song Play Mode

S.PLAY 2.3: MOSS

2.3-1: MOSS

☞p.272 "Editing a combination"

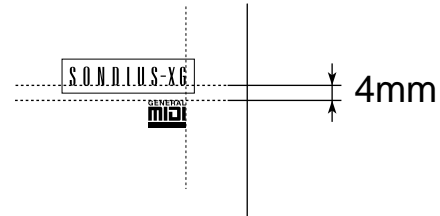
☞p.273 "Sequencer, Song Play mode"

S.PLAY 2.3:MOSS								MOSS:Voice Reserve	
Reyb	Reyb	Reyb	Reyb	Reyb	Reyb	Reyb	Reyb		
1	1	1	0	1	1	0	0		
Voice Reserve (Total 6 voices max)									
BUS Reference: Track01									
T01: Track01		T01		G001:Acoustic Piano				Ch 01	
MOS.#		MOS.16						UTILITY	

Cautions when using bank F

☞"EXB-MOSS owner's manual" p.48 "Cautions when using bank F"

Affix the Sondius-XG label



Modulation Source List

- Off
- EG 1...EG 4
- Amp EG
- LFO 1...LFO 4
- Portamento
- Note# Line
- Note# EXP.
- Note/High
- Note/Low
- Vel. Sort
- Vel. Med.
- Vel.Hard
- AfterT
- JS X
- JS+Y #01
- JS-Y #02
- JS+Y&AT/2*
- JS-Y&AT/2*
- Pedal #04
- Ribbon #16
- Rbn#16 +X
- Rbn#16 -X
- Slider #18
- KnobM1#17
- KnobM2#19
- KnobM3#20
- KnobM4#21
- KnobM1 [+]
- KnobM2 [+]
- KnobM3 [+]
- KnobM4 [+]
- Damper #64
- SW 1 #80
- SW 2 #81
- FootSW#82
- MIDI CC#83

* AT/2 is an aftertouch effect that is one half of After Touch.

EXB-MOSS Parameter Index

EXB-MOSS KARMA Parameters

A

A Trim

Filter: Filter Type 4.1-1/3: Filter1/2: Trim to A ^{ESP}p.284

Amp Level

Amp Level 5.1-1/2: Amp1/2: Level ^{ESP}p.284

Amplitude AMS (Alternate Modulation Source 1)

LFO1...4: LFO 5.3-1...4: LFO1...4: Amp ^{ESP}p.286

AMS (Alternate Modulation Source)

Amp EG: Level Modulation 5.1-3: Amp EG: L Mod. ^{ESP}p.285
Amp Level 5.1-1/2: Amp1/2: Amp1/2 ^{ESP}p.284
Common P.Mod: Common Pitch Modulation 3.1-1: Common: Common Pitch Mod. ^{ESP}p.283
Common P.Mod: Portamento 3.1-1: Common: Portamento ^{ESP}p.283
EG: Level Modulation 5.2-1...4: EG1...4: L Mod. ^{ESP}p.285
Filter: Filter A 4.1-1/3: Filter1/2 ^{ESP}p.284
OSC Mixer: Mixer1/2 2.1-4/5: Mixer1/2 ^{ESP}p.277
Bowed String Model: Bow Pressure 2.3-2: Bowed Str: Bow: Bow Pressure ^{ESP}p.283
Bowed String Model: String 2.3-1: Bowed Str: String ^{ESP}p.282
Brass Model: Lip Character 2.3-1: Brass: Lip ^{ESP}p.281
Comb Filter: High Damp 2.3-1: Comb F: High Damp ^{ESP}p.278
Comb Filter: Input 2.3-1: Comb F: Input ^{ESP}p.278
E.Piano Model: Pickup 2.3-1: E. Piano: Pickup ^{ESP}p.280
Organ Model: Tone Generator 2.3-1: Organ: Drwbar: Drawbar1...3 ^{ESP}p.280
Plucked String Model: Pickup 2.3-2: Plucked Str: Attack: Pickup ^{ESP}p.282
Plucked String Model: String 2.3-1: Plucked Str: String ^{ESP}p.282
Reed Model: Reed Character 2.3-1: Reed: Reed ^{ESP}p.281
Reed Model: Wave Shape 2.3-2: Reed: WShape ^{ESP}p.281
Resonance: BPF Parameters 2.3-1: Resonance: BPF: BPF1...4 ^{ESP}p.279
Resonance: Resonance Modulation 2.3-1: Resonance: Input: Resonance Modulation ^{ESP}p.279
Standard: Wave Shape 2.3-2: Standard: WShape: ^{ESP}p.278
Standard: Waveform 2.3-1: Standard: Wave ^{ESP}p.277
Output Level/Pan: Pan 5.1-4: Output/Pan ^{ESP}p.285

AMS (AMS1 Intensity Alternate Modulation Source)

OSC P.Mod: Pitch Modulation 3.1-2...4: OSC1...SubOSC: Modulation ^{ESP}p.283

AMS1 (Alternate Modulation Source 1)

AMS2 (Alternate Modulation Source 2)

Amp EG: Time Modulation 5.1-3: Amp EG: T Mod. ^{ESP}p.285
Comb Filter: Feedback 2.3-1: Comb F: Feedback ^{ESP}p.278
EG1...4: Time Modulation 5.2-1...4: EG1...4: T Mod. ^{ESP}p.285
Filter Mod.: Filter A/B Modulation 4.1-1/3: Filter1/2 ^{ESP}p.284
LFO1...4: Frequency Modulation 5.3-1...4: LFO1...4: Freq ^{ESP}p.286
Noise Generator: Frequency Modulation 2.1-3: Noise Gen.: Frequency ^{ESP}p.276
OSC Mod.: Pitch Modulation 3.1-2...4: OSC1...SubOSC: Modulation ^{ESP}p.283
Bowed String Model: Bow Speed 2.3-2: Bowed Str: Bow: Bow Speed ^{ESP}p.283
Brass Model: Breath Pressure 2.3-1: Brass: Breath ^{ESP}p.281
Comb Filter: Feedback 2.3-1: Comb F: Feedback ^{ESP}p.278
Cross Modulation: Modulation Depth 2.3-1: Cross Mod: Mod. Depth ^{ESP}p.280
Reed Model: Breath Pressure 2.3-1: Reed: Breath ^{ESP}p.281
Resonance: Input 2.3-1: Resonance: Input ^{ESP}p.279
Ring Modulation: Modulation Depth 2.3-1: Ring Mod: Mod. Depth ^{ESP}p.279
VPM: Carrier 2.3-1: VPM: Carrier ^{ESP}p.278
VPM: Modulator 2.3-2: VPM: Mod.: Modulator ^{ESP}p.279

At (Attack Time AMS2 Intensity)

Amp EG: Time Modulation 5.1-3: Amp EG: T Mod. ^{ESP}p.285
EG1...4: Time Modulation 5.2-1...4: EG1...EG4: T Mod. ^{ESP}p.285

Attack (Attack Level)

Amp EG: Level 5.1-3: Amp EG: L ^{ESP}p.285
EG1...4: Level 5.2-1...4: EG1...EG4: L ^{ESP}p.285

Attack (Attack Time)

Amp EG: Time 5.1-3: Amp EG: T ^{ESP}p.285
EG1...4: Time 5.2-1...4: EG1...EG4: T ^{ESP}p.285

Attack Level

Plucked String Model: Attack 2.3-2: Plucked Str: Attack: Level ^{ESP}p.282

B

B Trim

Filter: Filter Type 4.1-1/3: Filter1/2: Trim to B ^{ESP}p.284

Balance

Standard: Wave Shape 2.3-2: Standard: WShape ^{ESP}p.278

Base Note

LFO1...4: Frequency MIDI/Tempo Sync 5.3-1...4: LFO1...4: MIDI/Tempo Sync. ^{ESP}p.286

Bowing Point

Bowed String Model: String 2.3-1: Bowed Str: String ^{ESP}p.282

Break (Break Level)

Amp EG: Level 5.1-3: Amp EG: L: B(Break Level) ^{ESP}p.285
EG1...4: Time 5.2-1...4: EG1...EG4: L ^{ESP}p.285

Breath Noise

Brass Model: Breath Pressure 2.3-1: Brass: Breath: Noise ^{ESP}p.281
Reed Model: Breath Pressure 2.3-1: Reed: Breath: Noise ^{ESP}p.281

Bridge Reflection

Bowed String Model: String 2.3-1: Bowed Str: String ^{ESP}p.282

C

Carrier

Cross Modulation: Wave 2.3-1: Cross ^{ESP}p.280
Ring Modulation: Wave 2.3-1: Ring ^{ESP}p.279

Center Key

OSC Mod.: Pitch Slope 3.1-2: OSC1...3.1-4: Pitch Slope ^{ESP}p.283

Click Noise Level

E.Piano Model: Hammer 2.3-1: E. Piano ^{ESP}p.280

Coarse

Resonance: BPF Parameters 2.3-2: Resonance: BPF: BPF1...4 ^{ESP}p.279

Coarse (Harmonics Coarse)

Organ Model: Tone Generator 2.3-1: Organ: Drwbar: Drawbar1...3 ^{ESP}p.280

Ctrl (Control)

Plucked String Model: Harmonics 2.3-1: Plucked Str: Attack: Harmonics ^{ESP}p.282

D

Damp

Bowed String Model: String 2.3-1: Bowed Str: String ^{ESP}p.282
Plucked String Model: String 2.3-1: Plucked Str: String ^{ESP}p.282

Damp Ktr Key (Damp Keyboard Track Key)

Bowed String Model: String 2.3-1: Bowed Str: String ^{ESP}p.282

Dc (Decay Time AMS2 Intensity)

Amp EG: Time Modulation 5.1-3: Amp EG: T Mod. ^{ESP}p.285
EG1...4: Time Modulation 5.2-1...4: EG1...EG4: T Mod. ^{ESP}p.285

Decay

E.Piano Model: Overtone 2.3-1: E. Piano ^{ESP}p.280
E.Piano Model: Tone Generator 2.3-1: E. Piano ^{ESP}p.280
Organ Model: Percussion Generator 2.3-2: Organ.: Perc.: Percussion Generator ^{ESP}p.280
Plucked String Model: String 2.3-1: Plucked Str: String ^{ESP}p.282

Decay (Decay Time)

Amp EG: Time 5.1-3: Amp EG: T ^{ESP}p.285
EG1...4: Time 5.2-1...4: EG1...EG4: T ^{ESP}p.285

Depth

Cross Modulation: Modulation Depth 2.3-1: Cross Mod: Mod. Depth ^{ESP}p.280
Ring Modulation: Modulation Depth 2.3-1: Ring Mod: Mod. Depth ^{ESP}p.279

Detune

Program Basic: Unison. 2.1-2: OSC Basic: Unison ^{ESP}p.276

Differential

Bowed String Model: Bow Speed 2.3-2: Bowed Str: Bow: Bow Speed ^{ESP}p.283

Dispersion

Bowed String Model: String 2.3-2: Bowed Str: String ^{ESP}p.282
Plucked String Model: String 2.3-2: Plucked Str: String ^{ESP}p.282

Down (Curve Down)

Plucked String Model: Attack Curve 2.3-2: Plucked Str: String: Curve ^{ESP}p.282

E

EG

Bowed String Model: Bow Pressure 2.3-2: Bowed Str: Bow: Bow Speed ^{ESP}p.283
Bowed String Model: Bow Speed 2.3-2: Bowed Str: Bow: Bow Speed ^{ESP}p.283
Brass Model: Breath Pressure 2.3-2: Brass: Breath: Pres.EG ^{ESP}p.281
Reed Model: Breath Pressure 2.3-1: Reed: Breath: Pres.EG ^{ESP}p.281

EG (Amplitude Modulation EG)

Amp Level 5.1-1/2: Amp1/Amp2 ^{ESP}p.284

EG (Cutoff Frequency Modulation EG)

Filter: Filter A 4.1-1/3: Filter1/Filter2 ^{ESP}p.284

Enable

Common P.Mod: Portamento 3.1-1: Common: Portamento ^{ESP}p.283

F

F.Offset

OSC Basic 2.1-2...4: OSC Basic: OSC1...SubOSC: F.Ofs ^{ESP}p.276

Fade

LFO1...4: LFO 5.3-1...4: LFO1...LFO4 ^{ESP}p.286

Fbk (Feed Back)	
Comb Filter: Feedback	2.3-1: Comb F: Feedback ^{ESP} p.278
Feedback	
OSC Mixer	2.1-4/5: Mixer1/2: Feedback ^{ESP} p.277
VPM: Carrier	2.3-1: VPM: Carrier: Feedback ^{ESP} p.278
Filter Type	
Filter: Filter Type	4.1-1/3: Filter1/2 ^{ESP} p.284
Noise Generator	2.1-3: Noise Gen. ^{ESP} p.276
Filter2 (Link to Filter1)	
Filter: Routing	4.1-1/3: Filter1/2: Link SW ^{ESP} p.284
Fine	
Resonance: BPF Parameters	2.3-1: Resonance: BPF: BPF1...4 ^{ESP} p.279
VPM: Modulator	2.3-2: VPM: Mod. ^{ESP} p.279
Fine (Harmonics Fine)	
Organ Model: Tone Generator	2.3-1: Organ: Drwbar: Drawbar1...3 ^{ESP} p.280
Fingered	
Common P.Mod: Portamento	3.1-1: Common: Portamento ^{ESP} p.283
Force	
E.Piano Model: Hammer	2.3-1: E.Piano: Hammer ^{ESP} p.280
Force Velocity Curve	
E.Piano Model: Hammer	2.3-1: E.Piano: Hammer: Force Vel.Curve ^{ESP} p.280
Frequency	
LFO1...4: LFO	5.3-1...4: LFO1...4: Waveform ^{ESP} p.286
Bowed String Model: Peaking EQ	2.3-2: Bowed Str: Bow: Peaking EQ ^{ESP} p.283
Brass Model: Peaking EQ	2.3-1: Brass: Peaking EQ ^{ESP} p.281
E.Piano Model: Low EQ	2.3-1: E.Piano: Low EQ ^{ESP} p.280
E.Piano Model: Overtone	2.3-1: E.Piano: Overtone ^{ESP} p.280
Plucked String Model: Low EQ	2.3-2: Plucked Str: Attack: Low EQ ^{ESP} p.282
Reed Model: Peaking EQ	2.3-1: Reed: Peaking EQ ^{ESP} p.281
Frequency (Cutoff Frequency)	
Noise Generator	2.1-3: Noise Gen. ^{ESP} p.276
Filter: Filter A	4.1-1/3: Filter1/2: Freq to A/B ^{ESP} p.284
Frequency Coarse	
VPM: Modulator	2.3-2: VPM: Mod. ^{ESP} p.279
G	
Gain	
Bowed String Model: Peaking EQ	2.3-2: Bowed Str: Bow: Peaking EQ ^{ESP} p.283
Brass Model: Peaking EQ	2.3-1: Brass: Peaking EQ ^{ESP} p.281
E.Piano Model: Low EQ	2.3-1: E.Piano: Low EQ ^{ESP} p.280
Plucked String Model: Low EQ	2.3-2: Plucked Str: Attack: Low EQ ^{ESP} p.282
Reed Model: Peaking EQ	2.3-1: Reed: Peaking EQ ^{ESP} p.281
H	
H. D (High Damp)	
Comb Filter:High Damp	2.3-1: Comb F: High Damp ^{ESP} p.278
Hold	
Program Basic: Voice Assign Mode	2.1-1: Basic: Voice Assign ^{ESP} p.276
I	
Input	
Comb Filter: Input	2.3-1: Comb F: Input ^{ESP} p.278
Cross Modulation: Wave	2.3-1: Cross Mod: Input ^{ESP} p.280
Resonance: Input	2.3-1: Ring Mod: Input ^{ESP} p.279
Ring Modulation: Wave	2.3-1: Ring Mod: Input ^{ESP} p.279
Sync Modulation: Wave	2.3-1: Sync Mod: Input ^{ESP} p.280
Input (Input Level)	
Standard: Wave Shape	2.3-2: Standard: WShape ^{ESP} p.278
Input Trim	
Noise Generator	2.1-3: Noise Gen. ^{ESP} p.276
Inst Type	
Brass Model: Inst Type	2.3-1: Brass ^{ESP} p.281
Reed Model: Inst Type	2.3-1: Reed: Reed ^{ESP} p.281
Int (BPF Frequency AMS Intensity)	
Resonance: BPF Parameters	2.3-2: Resonance: BPF: BPF1...4 ^{ESP} p.279
Int (Pressure AMS Intensity)	
Bowed String Model: Bow Pressure	2.3-2: Bowed Str: Bow: Bow Pressure ^{ESP} p.283
Int (Pressure EG Intensity)	
Bowed String Model: Bow Pressure	2.3-2: Bowed Str: Bow: Bow Pressure ^{ESP} p.283
Int (Speed AMS1 Intensity)	
Bowed String Model: Bow Speed	2.3-2: Bowed Str: Bow: Bow Speed ^{ESP} p.283
Int (Speed AMS2 Intensity)	
Bowed String Model: Bow Speed	2.3-2: Bowed Str: Bow: Bow Speed ^{ESP} p.283

Int (Seed Modulation EG Intensity)	
Bowed String Model: Bow Speed	2.3-2: Bowed Str: Bow: Bow Pressure ^{ESP} p.283
Intensity (Amplitude AMS Intensity)	
Amp Level	5.1-1/2: Amp1/2: Amp1/Amp2 ^{ESP} p.284
LFO1...4: LFO	5.3-1...4: LFO1...4: Amp ^{ESP} p.286
Intensity (AMS1 Int AMS Intensity)	
OSC Mod.: Pitch Modulation	3.1-2...4: OSC1...SubOSC: Modulation ^{ESP} p.283
Intensity (Balance AMS Intensity)	
Standard: Wave Shape	2.3-2: Standard: WShape ^{ESP} p.278
Intensity (Bowing Point AMS Intensity)	
Bowed String Model: String	2.3-1: Bowed Str: String ^{ESP} p.282
Intensity (Bridge Reflection AMS Intensity)	
Bowed String Model: String	2.3-1: Bowed Str: String ^{ESP} p.282
Intensity (Common Pitch AMS Intensity)	
Common P.Mod: Common Pitch Modulation	3.1-1: Common: Common Pitch Mod. ^{ESP} p.283
Intensity (Cutoff Frequency AMS1 Intensity)	
Filter Mod.: Filter A/B Modulation	4.1-2/4: F1/2 Mod: Modulation ^{ESP} p.284
Noise Generator: Frequency Modulation	2.1-3: Noise Gen. ^{ESP} p.276
Intensity (Cutoff Frequency AMS2 Intensity)	
Filter Mod.: Filter A/B Modulation	4.1-2/4: F1/2 Mod: Modulation ^{ESP} p.284
Noise Generator: Frequency Modulation	2.1-3: Noise Gen. ^{ESP} p.276
Intensity (Cutoff Frequency Mod. EG Intensity)	
Filter: Filter A	4.1-2/4: F1/2 Mod: Modulation ^{ESP} p.284
Intensity (Damp AMS Intensity)	
Bowed String Model: String	2.3-1: Bowed Str: String ^{ESP} p.282
Plucked String Model: String	2.3-1: Plucked Str: String ^{ESP} p.282
Intensity (Dispersion AMS Intensity)	
Bowed String Model: String	2.3-1: Bowed Str: String ^{ESP} p.282
Plucked String Model: String	2.3-1: Plucked Str: String ^{ESP} p.282
Intensity (EG Level AMS Intensity)	
Amp EG: Level Modulation	5.1-3: Amp EG: L Mod.: I ^{ESP} p.285
EG1...4: Level Modulation	5.2-1...4: EG1...EG4: L Mod.: I ^{ESP} p.285
Intensity (EG Time AMS1 Intensity)	
Amp EG: Time Modulation	5.1-3: Amp EG: T Mod.: I ^{ESP} p.285
EG1...4: Time Modulation	5.2-1...4: EG1...EG4: T Mod.: I ^{ESP} p.285
Intensity (Feedback AMS1 Intensity)	
Comb Filter: Feedback	2.3-1: Comb F: Feedback ^{ESP} p.278
Intensity (Feedback AMS2 Intensity)	
Comb Filter: Feedback	2.3-1: Comb F: Feedback ^{ESP} p.278
Intensity (Frequency AMS1 Intensity)	
LFO1...4: Frequency Modulation	5.3-1...4: LFO1...LFO4: Freq ^{ESP} p.286
VPM: Modulator	2.3-2: VPM: Mod ^{ESP} p.279
Intensity (Frequency AMS2 Intensity)	
LFO1...4: Frequency Modulation	5.3-1...4: LFO1...LFO4: Freq ^{ESP} p.286
VPM: Modulator	2.3-2: VPM: Mod ^{ESP} p.279
Intensity (Harmonics Control Intensity)	
Plucked String Model: Harmonics	2.3-2: Plucked Str: Attack: Harmonics ^{ESP} p.282
Intensity (High Damp AMS Intensity)	
Comb Filter: High Damp	2.3-1: Comb F: High Damp ^{ESP} p.278
Intensity (Input Level AMS Intensity)	
Standard: Wave Shape	2.3-2: Standard: WShape: Balance ^{ESP} p.278
Intensity (Input Wave Level AMS Intensity)	
Comb Filter: Input	2.3-1: Comb F: Input ^{ESP} p.278
Intensity (Level AMS Intensity)	
OSC Mixer: Mixer1/2	2.2-4/5: Mixer1/2 ^{ESP} p.277
Organ Model: Percussion Generator	2.3-2: Organ: Perc.: Percussion Generator ^{ESP} p.280
Organ Model: Tone Generator	2.3-1: Organ: Drwbar: Drawbar1...3 ^{ESP} p.280
Intensity (Level AMS1 Intensity)	
Resonance: Input	2.3-1: Resonance: Input ^{ESP} p.279
VPM: Carrier	2.3-1: VPM: Carrier ^{ESP} p.278
VPM: Modulator	2.3-2: VPM: Mod ^{ESP} p.279
Intensity (Level AMS2 Intensity)	
Resonance: Input	2.3-1: Resonance: Input ^{ESP} p.279
VPM: Carrier	2.3-1: VPM: Carrier ^{ESP} p.278
VPM: Modulator	2.3-2: VPM: Mod ^{ESP} p.279
Intensity (Lip Character AMS Intensity)	
Brass Model: Lip Character	2.3-1: Brass: Lip ^{ESP} p.281
Intensity (Modulation Depth AMS1 Intensity)	
Cross Modulation: Wave	2.3-1: Cross Mod: Mod. Depth ^{ESP} p.280
Ring Modulation: Modulation Depth	2.3-1: Ring Mod: Mod. Depth ^{ESP} p.279

Intensity (Modulation Depth AMS2 Intensity)

Cross Modulation: Wave 2.3-1: Cross Mod: Mod. Depth ^{ESP}p.280
Ring Modulation: Modulation Depth 2.3-1: Ring Mod: Mod. Depth ^{ESP}p.279

Intensity (Panpot AMS Intensity)

Output Level/Pan: Pan. 5.1-4: Output/Pan: Output ^{ESP}p.285

Intensity (Picking Point AMS Intensity)

Plucked String Model: String 2.3-1: Plucked Str: String ^{ESP}p.282

Intensity (Pickup Location AMS Intensity)

E.Piano Model: Pickup 2.3-1: E.Piano: Pickup ^{ESP}p.280
Plucked String Model: Pickup 2.3-2: Plucked Str: Attack: Pickup ^{ESP}p.282

Intensity (Pitch AMS1 Intensity)

OSC Mod.: Pitch Modulation 3.1-1: Common: Common Pitch Mod. ^{ESP}p.283

Intensity (Pitch AMS2 Intensity)

OSC Mod.: Pitch Modulation 3.1-1: Common: Common Pitch Mod. ^{ESP}p.283

Intensity (Portamento Time AMS Intensity)

Common P.Mod: Portamento. 3.1-1: Common: Portamento ^{ESP}p.283

Intensity (Pressure AMS1 Intensity)

Brass Model: Breath Pressure 2.3-1: Brass: Breath ^{ESP}p.281
Reed Model: Breath Pressure 2.3-1: Reed: Breath ^{ESP}p.281

Intensity (Pressure AMS2 Intensity)

Brass Model: Breath Pressure 2.3-1: Brass: Breath ^{ESP}p.281
Reed Model: Breath Pressure 2.3-1: Reed: Breath ^{ESP}p.281

Intensity (Pressure EG Intensity)

Brass Model: Breath Pressure 2.3-1: Brass: Breath ^{ESP}p.281
Reed Model: Breath Pressure 2.3-1: Reed: Breath ^{ESP}p.281

Intensity (Reed AMS Intensity)

Reed Model: Reed Character 2.3-1: Reed: Reed ^{ESP}p.281

Intensity (Resonance AMS Intensity)

Filter: Filter A 4.1-1/3: Filter1/2 ^{ESP}p.284
Resonance: Resonance Modulation 2.3-1: Resonance: Resonance Modulation ^{ESP}p.279

Intensity (Shape AMS Intensity)

Reed Model: Wave Shape 2.3-2: Reed: WShape ^{ESP}p.281
Standard: Wave Shape 2.3-2: Standard: WShape ^{ESP}p.278

Intensity (Shape AMS1 Intensity)

VPM: Carrier 2.3-1: VPM: Carrier ^{ESP}p.278

Intensity (Shape AMS2 Intensity)

VPM: Carrier 2.3-1: VPM: Carrier ^{ESP}p.278

Intensity (Waveform AMS Intensity)

Standard: Waveform 2.3-1: Standard: Wave ^{ESP}p.277

Intensity (Waveform Modulation LFO Intensity)

Standard: Waveform 2.3-1: Standard: Wave ^{ESP}p.277

J

JS(+X) (Joystick Intensity +X)

Common P.Mod: Pitch Bend 3.1-1: Common: Pitch Bend ^{ESP}p.283

JS(-X) (Joystick Intensity -X)

Common P.Mod: Pitch Bend 3.1-1: Common: Pitch Bend ^{ESP}p.283

JX(+X) (Joystick +X)

Brass Model: Jump Bend 2.3-1: Brass: Jump Bend ^{ESP}p.281
Reed Model: Jump Bend 2.3-1: Reed: Jump Bend ^{ESP}p.281

JX(-X) (Joystick -X)

Brass Model: Jump Bend 2.3-1: Brass: Jump Bend ^{ESP}p.281
Reed Model: Jump Bend 2.3-1: Reed: Jump Bend ^{ESP}p.281

K

Key (Scale Key)

Prog Basic: Scale 2.1-1: Prog Basic: Scale ^{ESP}p.276

Key High

Amp Level: Keyboard Track 5.1-1/2: Amp1/2: Keyboard Track ^{ESP}p.284
Filter Mod.: Keyboard Track 4.1-2/4: F1/2 Mod: Keyboard Track ^{ESP}p.284

Key Low

Amp Level: Keyboard Track 5.1-1/2: Amp1/2: Keyboard Track ^{ESP}p.284
Filter Mod.: Keyboard Track 4.1-2/4: F1/2 Mod: Keyboard Track ^{ESP}p.284

Key Sync

LFO1...4: LFO 5.3-1...4: LFO1...4: Key Sync. ^{ESP}p.286

KTr (Damp Keyboard Track/Decay Keyboard Track)

Plucked String Model: String 2.3-1: Plucked Str: String ^{ESP}p.282

L

Level

E.Piano Model: Overtone 2.3-1: E.Piano: Overtone ^{ESP}p.280
Organ Model: Tone Generator 2.3-1: Organ: Drwbar: Drawbar1...3 ^{ESP}p.280
Resonance: BPF Parameters 2.3-2: Resonance: BPF: BPF1...4 ^{ESP}p.279

Resonance: Input 2.3-1: Resonance: Input ^{ESP}p.279
VPM: Carrier 2.3-1: VPM: Carrier ^{ESP}p.278
VPM: Modulator 2.3-2: VPM: Mod. ^{ESP}p.279
Standard: Wave 2.3-1: Standard: Wave ^{ESP}p.277

Level (Input Wave Level)

Comb Filter: Input 2.3-1: Comb F: Input ^{ESP}p.278

Level AMS (Level Alternate Modulation Source)

Organ Model: Percussion Generator 2.3-2: Organ: Perc.: Percussion Generator ^{ESP}p.280

LFO

Standard: Wave 2.3-1: Standard: Wave ^{ESP}p.277

Lip

Brass Model: Lip Character 2.3-1: Brass: Lip ^{ESP}p.281

Location

E.Piano Model: Pickup 2.3-1: E.Piano: Pickup ^{ESP}p.280
Plucked String Model: Pickup 2.3-2: Plucked Str: Attack: Pickup ^{ESP}p.282

Low Boost

Plucked String Model: Low EQ. 2.3-2: Plucked Str: Attack: Low EQ ^{ESP}p.282

M

Main Wave

Standard: Wave 2.3-1: Standard: Wave ^{ESP}p.277

MIDI/Tempo Sync.

LFO1...4: Frequency MIDI/Tempo Sync. 5.3-1...4: LFO1...4: MIDI/Tempo Sync. ^{ESP}p.286

Mode

Prog Basic: Unison. 2.1-1: Prog Basic: Unison: Assign Mode ^{ESP}p.276

N

Noise

OSC Mixer 2.1-4/5: Mixer1/2 ^{ESP}p.277

Noise Level

Comb Filter: Input 2.3-1: Comb F: Input ^{ESP}p.278
Plucked String Model: Attack 2.3-2: Plucked Str: Attack ^{ESP}p.282

O

Octave

OSC Basic: 2.1-2: OSC Basic: OSC1...SubOSC ^{ESP}p.276

Offset

LFO1...LFO4: LFO 5.3-1...4: LFO1...4: Ofs ^{ESP}p.286
Reed Model: Wave Shape 2.3-2: Reed: WShape ^{ESP}p.281

Offset (Wave Shape Offset)

Standard: Wave Shape 2.3-2: Standard: WShape ^{ESP}p.278

OSC1/OSC2 (Oscillator 1/2 Type)

Prog Basic/OSC Basic: Multi OSC Setup 2.1-1: Prog Basic: Oscillator ^{ESP}p.276

OSC1 (OSC1 Output Level)/OSC2 (OSC2 Output Level)

OSC Mixer: Mixer1/Mixer2 2.1-4: OSC Mixer1/2 ^{ESP}p.277

Output Level

Output Level/Pan: Output Level 5.1-4: Output/Pan ^{ESP}p.285

P

Pan

Output Level/Pan: Pan 5.1-4: Output/Pan ^{ESP}p.285

Panel Switch Assign

Controller Setup 2.2-1: Controls: SW1/2 Assign ^{ESP}p.277

Percussion

Organ Model: Tone Generator 2.3-1: Organ: Perc.: Drawbar1...3 ^{ESP}p.280

Phase Shift (Triangle & Sine Phase Shift)

Standard: Wave 2.3-1: Standard: Wave ^{ESP}p.277

Picking Point

Plucked String Model: String 2.3-1: Plucked Str: String ^{ESP}p.282

Pickup

Plucked String Model: Pickup 2.3-2: Plucked Str: Attack: Pickup ^{ESP}p.282

Point

Plucked String Model: Harmonics 2.3-2: Plucked Str: Attack: Harmonics ^{ESP}p.282

Poly, Mono (Single, Multi)

Program Basic: Voice Assign Mode 2.1-1: Prog Basic: Voice Assign: Mode ^{ESP}p.276

Priority

Prog Basic: Voice Assign Mode 2.1-1: Prog Basic: Voice Assign ^{ESP}p.276

Pulse Width

Comb Filter: Input 2.3-1: Comb F: Input ^{ESP}p.278

Q

Q

- Bowed String Model: Peaking EQ 2.3-2: Bowed Str: Bow: Peaking EQ ^{ESP}p.283
- Brass Model: Peaking EQ 2.3-1: Brass: Peaking EQ ^{ESP}p.281
- Reed Model: Peaking EQ 2.3-1: Reed: Peaking EQ ^{ESP}p.281

R

Ramp High

- Amp Level: Keyboard Track 5.1-1/2: Amp 1/2: Keyboard Track ^{ESP}p.284
- Filter Mod.: Keyboard Track 4.1-2/4: F1/2 Mod: Keyboard Track ^{ESP}p.284
- OSC Mod.: Pitch Slope 3.1-2...4: OSC1...SubOSC: Pitch Slope ^{ESP}p.283
- Bowed String Model: String 2.3-1: Bowed Str: String ^{ESP}p.282

Ramp Low

- Amp Level: Keyboard Track 5.1-1/2: Amp 1/2: Keyboard Track ^{ESP}p.284
- Filter Mod.: Keyboard Track 4.1-2/4: F1/2 Mod: Keyboard Track ^{ESP}p.284
- OSC Mod.: Pitch Slope 3.1-2...4: OSC1...SubOSC: Pitch Slope ^{ESP}p.283
- Bowed String Model: String 2.3-1: Bowed Str: String ^{ESP}p.282

Random

- Prog Basic: Scale 2.1-1: Prog Basic: Scale ^{ESP}p.276

Realtime Control Knobs B-Assign

- Controller Setup 2.2-1: Controls: Knob B Assign ^{ESP}p.277

Release

- E.Piano Model: Tone Generator 2.3-1: E.Piano: Tone Generator ^{ESP}p.280
- Plucked String Model: String 2.3-1: Plucked Str: String ^{ESP}p.282

Release (Release Level)

- EG1...4: Level 5.2-1...4: EG1...4: L: R ^{ESP}p.285

Release (Release Time)

- Amp EG: Time 5.1-3: Amp EG: L: R ^{ESP}p.285
- EG1...4: Time 5.2-1...4: EG1...4: L: R ^{ESP}p.285

Reso

- Reed Model: Bell Character 2.3-1: Reed: Bell ^{ESP}p.281

Reso (Resonance)

- Resonance: BPF Parameters 2.3-2: Resonance: BPF: BPF1...4 ^{ESP}p.279

Resonance

- Filter: Filter A 4.1-1/3: Filter1/2: Reso to A/B ^{ESP}p.284
- Noise Generator 2.1-3: Noise Gen. ^{ESP}p.276
- Brass Model: Bell Character 2.3-1: Brass: Bell ^{ESP}p.281

Retrigger (Retrigger Control)

- Prog Basic: Voice Assign Mode 2.1-1: Prog Basic: Voice Assign ^{ESP}p.276

RI (Release Time AMS2 Intensity)

- Amp EG: Time Modulation 5.1-3: Amp EG: T Mod.: R ^{ESP}p.285
- EG1...4: Time Modulation 5.2-1...4: EG1...EG4: T Mod.: R ^{ESP}p.285

Rosin

- Bowed String Model: Bow Speed 2.3-2: Bowed Str: Bow: Bow Speed ^{ESP}p.283

Routing

- Filter: Routing 4.1-1/3: Filter1/2 ^{ESP}p.284

S

Shape

- Reed Model: Wave Shape 2.3-2: Reed: WShape ^{ESP}p.281
- Standard: Wave Shape 2.3-2: Standard: WShape ^{ESP}p.278

Sine Level

- Standard: Wave 2.3-1: Standard: Wave ^{ESP}p.277

SI (Slope Time AMS2 Intensity)

- Amp EG: Time Modulation 5.1-3: Amp EG: T Mod.: S ^{ESP}p.285
- EG1...4: Time Modulation 5.2-1...4: EG1...EG4: T Mod.: S ^{ESP}p.285

Slave

- Sync Modulation: Wave 2.3-1: Sync Mod: Slave ^{ESP}p.280

Slope (Slope Time)

- Amp EG: Time 5.1-3: Amp EG: T: S ^{ESP}p.285
- EG1...4: Time 5.2-1...4: EG1...4: EG4: T: S ^{ESP}p.285

Start (Start Level)

- EG1...4: Level 5.2-1: EG1...5.2-4: EG4: L: S ^{ESP}p.285

Step (Joystick Step +X)

- Common P.Mod: Pitch Bend 3.1-1: Common: Pitch Bend ^{ESP}p.283

Step (Joystick Step -X)

- Common P.Mod: Pitch Bend 3.1-1: Common: Pitch Bend ^{ESP}p.283

Strength

- Brass Model: Breath Pressure 2.3-1: Brass: Breath ^{ESP}p.281

Sub OSC

- OSC Mixer: Mixer1/2 2.1-4/5: Mixer1/2 ^{ESP}p.277

Sustain (Sustain Level)

- Amp EG: Level 5.1-3: Amp EG: L: S ^{ESP}p.285

- EG1...4: Level 5.2-1...4: EG1...EG4: L: S ^{ESP}p.285

T

Threshold (Retrigger Control Threshold)

- Prog Basic: Voice Assign Mode 2.1-1: Prog Basic: Voice Assign ^{ESP}p.276

Time

- Common P.Mod: Portamento 3.1-1: Common: Portamento ^{ESP}p.283

Times

- LFO1...4: Frequency MIDI/Tempo Sync 5.3-1...4: LFO1...LFO4: MIDI/Tempo Sync. ^{ESP}p.286

Tone

- Brass Model: Bell Character 2.3-1: Brass: Bell ^{ESP}p.281
- Reed Model: Bell Character 2.3-1: Reed: Bell ^{ESP}p.281

Transpose

- OSC Basic: OSC1/2 Multi OSC Setup/Sub OSC 2.1-2...4: OSC1...Sub OSC ^{ESP}p.276

Triangle Level

- Standard: Wave 2.3-1: Standard: Wave ^{ESP}p.277

Trigger

- Organ Model: Percussion Generator 2.3-2: Organ: Perc.: Percussion Generator ^{ESP}p.280

Tune

- OSC Basic: OSC1/2 Multi OSC Setup/Sub OSC 2.1-2...4: OSC1...Sub OSC ^{ESP}p.276

Type

- Ring Modulation: Wave 2.3-1: Ring Mod: Input ^{ESP}p.279

Type (Scale Type)

- Prog Basic: Scale 2.1-1: Prog Basic: Scale ^{ESP}p.276

Type (Wave Shape Table Type)

- Reed Model: Wave Shape 2.3-2: Reed: WShape ^{ESP}p.281
- Standard: Wave Shape 2.3-2: Standard: WShape: Table Type ^{ESP}p.278

Type (Wave Shape Type)

- VPM: Carrier 2.3-1: VPM: Carrier ^{ESP}p.278

U

Unison

- Prog Basic: Unison 2.1-2: OSC Basic: Unison ^{ESP}p.276

Up (Curve Up)

- Plucked String Model: Attack Curve 2.3-2: Plucked Str: Attack: Curve ^{ESP}p.282

V

Velocity (Attack Level Velocity Control)

- Plucked String Model: Attack 2.3-2: Plucked Str: Attack ^{ESP}p.282

Velocity (Curve Down Velocity Control)

- Plucked String Model: Attack Curve 2.3-2: Plucked Str: Attack: Curve ^{ESP}p.282

Velocity (Curve Up Velocity Control)

- Plucked String Model: Attack Curve 2.3-2: Plucked Str: Attack: Curve ^{ESP}p.282

Velocity (Noise Level Velocity Control)

- Plucked String Model: Attack 2.3-2: Plucked Str: Attack ^{ESP}p.282

Velocity Control

- Amp EG: Level Modulation 5.1-3: Amp EG: L Mod. ^{ESP}p.285
- EG1...4: Level Modulation 5.2-1...4: EG1...EG4: L Mod. ^{ESP}p.285

W

Wave

- Organ Model: Tone Generator 2.3-1: Organ: Drwbar: Drawbar1...3 ^{ESP}p.280
- VPM: Carrier 2.3-1: VPM: Carrier ^{ESP}p.278
- VPM: Modulator 2.3-2: VPM: Mod ^{ESP}p.279

Wave Edge

- Cross Modulation: Wave 2.3-1: Cross Mod: Carrier ^{ESP}p.280
- Ring Modulation: Wave 2.3-1: Ring Mod: Carrier ^{ESP}p.279
- Sync Modulation: Wave 2.3-1: Sync Mod: Slave ^{ESP}p.280
- Standard: Wave 2.3-1: Standard: Wave ^{ESP}p.277

Wave Shape

- VPM: Carrier 2.3-1: VPM: Carrier ^{ESP}p.278

Waveform

- LFO1...4: LFO 5.3-1...4: LFO1...4 ^{ESP}p.286
- OSC Basic: Sub OSC 2.1-1: Prog Basic: Sub ^{ESP}p.276
- Standard: Wave 2.3-1: Standard: Wave ^{ESP}p.277

Width (Hammer Width)

- E.Piano Model: Hammer 2.3-1: E.Piano: Hammer ^{ESP}p.280

Index

Numerics

000: No Effect 65, 160, 163

10's Hold

Combination 44

Program 2

A

AfterTouch Curve 134

Convert Position 138

All Rt. 66, 113, 130

Alternate Modulation 21, 221

Amp Level 4

AMS(Alternate Modulation Source) 222

Amp AMS 21

Filter AMS 17

Filter EG AMS 17

Freq. AMS 24

JS X/Bend as AMS 55, 88

Level Mod. AMS 14, 18, 22

LFO AMS 13, 18, 21

Pan AMS 20

Pitch AMS 12

Pitch EG AMS 12

Resonance AMS 15

Time Mod. AMS 14, 19, 23

Assign 10, 33, 34, 35, 63, 81, 93, 142, 243, 244

Foot Pedal Assign 145

Foot Switch Assign 145

Attack Level 22, 226

Filter EG 18

Pitch EG 13

Attack Time 4

Amp EG 22

Filter EG 18

Pitch EG 13

AUDIO OUTPUT
(INDIVIDUAL) 160

Auto

Mode (Clk Adv. Mode) 62, 109, 127

Tempo Mode 70

Auto KARMA 57, 135

Auto Punch In 76

B

Bend (Pitch Bend) 28

Bend Range

Combination 51, 60

Sequencer 84

Bounce

Bounce Pattern 92

Bounce Track 97

BPM/MIDI Sync function 159

BUS Select 112, 160, 161, 162, 163, 164, 165, 166

Global 145

Program 37, 38, 39, 40

Sequencer 76, 111, 112

Song Play 118, 129, 130

C

Cat. HOLD (Category Hold) 2

Chain

IFX 39, 161

MFX 40, 165

Chain Direction 40, 165

Chain Level 40, 165

Chain Signal 40, 165

Chain to next file 118

Changing the time signature 70

Convert Position 133, 134, 138

Convert to Song (Convert Cue List to Song) 80

COPY 79

Copy 155

Copy Cue List 80

Copy Drum Kit 144

Copy From Combi 72

Copy From Song 71

Copy Insert Effect 38, 112

Copy KARMA Module 26

Copy Key Setup 144

Copy Master Effect 41, 68, 114

Copy Measure 99

Copy Oscillator 8

Copy Pattern 92

Copy Scale 141

Copy Song 81

Copy To Track 93

Copy Track 97

Create

Create Ctrl (Create Control Data) 100

Create Directory 156

Cue List 78

CUT 79

Cut

Cut, Step 79

Event 97

Cutoff Frequency 15

D

Decay Time 4, 13, 18, 22

Delete

Back, note, rest 96

Cut, Event 97

Delete Cue List 80

Delete Measure 98

Delete Song 71

Disk 156

Detune BPM Adjust 51, 83, 84

Direct Index 238

Double 7

Drum Kit 7, 9

Drum program 7, 161

Drums 4, 7, 15, 20, 37

Dump 139

Dynamic MIDI 36

Dynamic MIDI Destinations 235

Dynamic MIDI Sources 234

Dynamic modulation Source (Dmod) 159, 163, 227

E

Erase

Erase Control Data 100

Erase Measure 98

Erase Note 101, 102

Erase Pattern 91

Erase Track 97

Event

Copy 97

Delete 97

Event Edit 96

Insert 97

Move 97

Event Edit 91, 96

Exclusive 139

Exclusive Data 153, 155

Exclusive Group 144

.EXL file 153, 149, 155

F

- Fade 24
- FF/REW Speed 73
- File index 121
- Filter 15, 16
 - Filter EG 4, 17, 18, 20
 - Filter Modulation 16, 17
 - Filter Type 15
 - Frequency 15
 - Keyboard Track 16
 - Resonance 15
- Floppy disk 115
- Foot Switch Polarity 145
- Force OSC Mode
 - Combination 50
 - Sequencer 83
- Format 156
 - Format Type 157
- Format 0, 1 115
- Full Format 157

G

- Gain
 - MEQ 40, 165
- GE (Generated Effect) 5
- GE Bend (GE Pitch Bend) 29
- GE Setup 26
- Global MIDI channel 137
- Global Setting
 - Load 152
 - Write 135
- GM Initialize 116
- GM Initialize Parameters 116

H

- Hide unknown file 150
- Hold 7
- Hold Balance 46

I

- Index 121
- Init K.RTC 5
- Initialize
 - GM Initialize 116
 - GM Initialize Parameters 116
 - Init KARMA Module (Initialize KARMA Module) 26
- Inputting a tie 96
- Inputting notes 96
- Inputting rests 96
- Insert
 - Insert Measure 99
 - Insert, Event 97
 - Insert, Step 79
- Insert Effect
 - Sequencer 112
- Intensity
 - AMS Intensity 12, 24
 - LFO Intensity 12, 13, 17, 21
 - Pitch EG 12

J

- .JKB file 149
- Jukebox 115
 - Jukebox List 122
 - Load 122
 - Save 122

K

- KARMA functions
 - Key Zone 6, 27
 - RT Parameter 34
- KARMA Module Parameters 29
- KARMA real-time control 5
- Key 8
 - Drum Kit 142
 - Scale Key 120
- Key Split 52
- Key Zone
 - Combination 52
 - Sequencer 85, 86
- Keyboard Track 16, 21

L

- Layer 52, 53
- Legato 7
 - Fingered (Porta. Fingered) 12
- Level
 - Combination
 - Chain Level 67
 - Rtn 1, 2 (Return 1, 2) 67
 - Send 66
 - Volume 46, 48
 - Drum Kit
 - Level 142
 - Send 145
 - Metronome
 - Sequencer 76, 91
 - Song Play 118
 - Program
 - Amp Level 4
 - Chain Level 40
 - Level (High/Low Level) 9
 - OSC Bal (OSC Balance) 4
 - Rtn 1, 2 (Return 1, 2) 40
 - Send 37
 - Trim 15
 - Sequencer
 - Level (Chain Level) 114
 - Send 111
 - Song Play
 - Level (Chain Level) 131
 - Send 129
- LFO 7, 24, 25
 - Filter 18
 - OSC 12, 24
 - Pitch 13
- Load 150
 - Combinations 151
 - Drum Kits 152
 - Global Setting 152
 - Jukebox List 122
 - Load selected 150
 - Program 151
 - Song 152
 - Standard MIDI File 153
 - Template Song 72, 116
 - Track 152
 - .PCG file 151
 - .SNG file 152
- Local Control 137, 246
- Local Control On 137
- Location 69, 78, 90, 115
 - Sequencer 69, 73
 - Set Location 73, 116
 - Song Play 115, 116
- Loop
 - Loop All Tracks 76
 - Loop On 77
 - Loop Start Meas/Loop End Meas 76, 77
 - Step Rec (Loop) 91

M

Master EQ (MEQ) 41, 132, 166, 220

Master EQ Gain[dB] 165

Media

Format Type 157

Free Size 157

Total Size 157

Memory Protect 136

MENU key 1, 140

Meter 70, 78, 115

Metronome 75, 76, 91, 118

MFx1, MFx2 114

MIDI 245

MIDI Channel

Combination 45, 49

IFX 66

MFx 67

Program 2

Sequencer 71, 82, 83

IFX 112

MFx 114

Song Play 116

IFX 130

MFx 131

MIDI Filter 240

Combination 54, 55, 56

Global 138

Program 4

Sequencer 87, 88, 89

MIDI/Tempo Sync. 25

Move

Move Measure 100

Page 1

Shift/Erase Note 101

Multi REC 76

Multisample 8, 9

N

Note Activity Display 6

O

Ofs (Offset) 24

Oscillator 46, 51, 65

Other Control Change 56, 90

Over Write 75

P

PAGE MENU 1, 43, 69, 115, 133

.PCG file 149, 151

Performance Editor 3

Poly, Mono 7

Polyphony/Monophonic 7, 50

Portamento

Combination 50

Program 12

Sequencer 83

Positional Cross-fade 52

Preset Template Song 72

Priority 7

Program Select 43

Combination 45, 48

Program 2

Sequencer 74

Song Play 117

Q

Quantize 101

Reso (Realtime Quantize Resolution) 70

R

Release Time 13, 18, 22

Rename

Cue List 80

Disk 155

Drum Kit 144

Pattern 91

Song 71

Track 93

Reso (Resonance) 143

Resonance 15, 16

Reverse

Rev (High/Low Reverse) 9

Rev (Reverse) 143, 144

REVERT 95

Routing 66, 113, 131, 160, 164

Combination 66

IFX 38

MFx 40

Program 38

Sequencer 113

Song Play 131

RPPR (Realtime Pattern Play/Recording) 90, 93

S

S.Ofs (High Start Offset) 9

Save 149

All 153

Exclusive Data 155

Jukebox List 122

Template Song 73, 116

.PCG file 154

.SNG file 154

Scale

Combination 52

Copy Scale 141

Program 7

Sequencer 85

Song Play 120

Song's Scale 85

SPlay's Scale 120

Use Prog's Scale 52, 85, 120

User All Notes Scale 8, 141

User Octave Scale 7, 140

Select by Category 5

IFX 39

MFx 41

Multisample 10

Program 2

Send 112, 164

Single 7

Single Trigger

Drum Kit 144

Program 7

Smart Scan 237

.SNG file 149, 151, 152, 153

Solo

Solo Check Box

Combination 47

Sequencer 103

Song Play 123

SOLO ON/OFF

Sequencer 74

Song Play 117

Solo Selected Timbre 44

Solo Selected Track

Sequencer 71

Song Play 116

Solo function

Combination 44

Sequencer 71, 74

Song Play 116, 117

Song Position Pointer messages 69, 71, 115

Standard MIDI Files (SMF) 115

Step Recording 91, 95

Swap

Swap Insert Effect 38, 65, 112

Swap LFO 1&2 25

Swap Master Effect 41, 68, 114, 132

Swap Oscillator 8

T

- Template Song 72, 136
- Tempo 3, 25, 44, 70, 78, 91, 93, 115
- Track Edit 95
- Track Select 93
- Transpose 4
 - Convert Position 138

U

- Use DKit Setting 20, 37
- User All Notes Scale 8, 141
- User Octave Scale 140
- User pattern 90, 153
- User Scale 140
- User Template Songs 72, 73

V

- Velocity
 - Modify Velocity 102
 - Step Recording (Loop) 91
 - Velocity Cross-fade 53
 - Velocity Curve 134
 - Specified location 138
 - Velocity SW L→H
 - DrumKit 143
 - Program 8
 - Velocity Switch 53
 - Velocity Zone
 - Combination 53
 - Program 10
 - Sequencer 86
- Volume
 - Combination 46
 - Hold Balance 46
 - Sequencer 75
 - Song Play 118
- Volume Label 150, 156, 157

W

- Write
 - Combination 44
 - Drum Kits 143
 - Global Setting 135
 - Program 3
- Write Protect 157

Z

- Zone Map
 - KARMA functions 27, 59, 106, 124
 - Key Zone 52, 53, 85, 86
 - Velocity Zone 53, 54, 86, 87