i2/i3

Interactive Music Workstation

Reference Guide

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GENERAL
MIDI
INSTRUMENT

AI² Synthesis System

KORG

Ⓔ ④

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Chapter 1
Arrangement Play Mode

This is the main performance mode of the Korg *i2/i3*. The *i2/i3* will automatically select this mode each time you turn the power switch on.

Arrangement Play mode lets you select the *arrangements* you will play when performing live with the *i2/i3*. The memory of your *i2/i3* contains 64 arrangements. You will find a complete list of the arrangement data that was shipped with your *i2/i3* in the Performance Notes that accompanied this manual.

You can also use this mode to create and perform your own versions of the *i2/i3* styles. If you need more flexibility, you can edit the ROM styles—or even create your own original styles—using the Edit Style mode described in the next chapter, then arrange them for performance in Arrangement Play mode.

This mode divides its parameters and functions among seven display pages, which are summarized on the following page of this manual. You can switch through these pages using the PAGE+ and PAGE– keys, or by pressing the DATA ENTRY key bearing the number of the desired page while holding down the ARR PLAY key.

The general procedures for editing parameters and using utility functions are outlined in Chapter 3 of the Player's Guide. Procedures for playing back and editing arrangements are covered in Chapters 1 and 8 of that manual.

You can set the MIDI settings for the arrangement backing tracks on Page 1 of the Global mode display. The keyboard timbres will use the channel specified by the Global/Keyboard channel. (See page 213 of this manual for details.)

Arrangement editing is similar to the Performance Editing function of Program mode (see page 119) in that you can make changes while an arrangement is playing. However, keep in mind that the changes you make will be lost forever should you mistakenly switch to another mode or select another arrangement. You should store your changes frequently in the *i2/i3* arrangement memory. You can do this using the *Write* function described on page 18.

Functions in Arrangement Play mode

The table below shows the layout of the *i2/i3* Arrangement Play mode. For each display page we list the page title, a brief outline of the page's contents, and the numbers of the pages in this manual where you will find these contents described.

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ARRANGEMENT PLAY

A display like the one shown below will appear when you press the ARR PLAY key. While this display is showing, you can use the ARRANGEMENT/STYLE keys on the front panel to select arrangements to perform with. You can also use this display to adjust the playback tempo as you perform.

Arrangement number and name

Tempo
Keyboard timbres and octave monitors
Mute buttons

```
ARR:11 Arrange 11
♩=120  STYLE:P11 Open Rock    SPLIT:C4
       CHORD:               XPOSE:0
 ▶KBD1:A11 Piano       OCTAVE=0  DRUM:5
  KBD2:A52 Deep Bass   OCTAVE=0
 DRUM PERC  BASS  ACC1   ACC2  ACC3  LOWER UPPER
 PLAY PLAY PLAY ____  PLAY PLAY ____  ON
      A    B    C    D    E    F    G    H
```
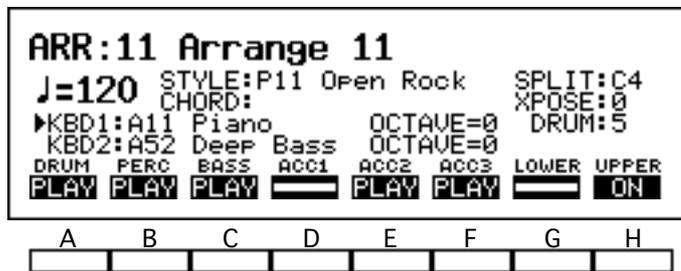
Style and split point
Chord and transpose monitors
Drum mapping

The second, third, and fourth lines of this display page contain several *performance monitors* that let you see the current style and chord selections, the keyboard split point, the current setting of the TRANSPOSE keys, and the current drum mapping. These fields are explained in the next section.

You can use the first parameters in the fourth and fifth lines of this page to select programs for the two keyboard timbres. Next to these parameters are performance monitors that let you check the OCTAVE key settings for each timbre. Finally, on the bottom line of the display, there are eight *mute buttons* that you can use to mute the backing tracks and the upper and lower keyboards. These items are described in detail on pages 6 through 7.

Arrangement

The number and name of the current arrangement appear at the top of the display. The *i2/i3* memory contains sixty-four arrangements, which you can choose from using the ARRANGEMENT/STYLE keys as described on page 28 of the Player's Guide.

☞ **To select arrangements with a footswitch…**

You can also change the arrangement selection using a footswitch or one of the pedals on an EC5 External Controller. These methods for controlling the arrangement selection are enabled by Global mode settings.

To use a footswitch, set the Assignable Pedal parameter for the jack you will use to either **ARR/STYLE UP** or **ARR/STYLE DOWN** (see page 215). If you have an EC5, select one of the same two settings for the appropriate Switch parameter (see page 220).

Tempo   [40…240]

This adjusts the arrangement's playback tempo. You can set the tempo to any value between 40 and 240 beats per minute.

☞ **External clock control**

The letters **EXT** will appear in place of a tempo when the Global mode Clock Source parameter is set to **EXT** (see page 212). This indicates that the tempo of the *i2/i3* is being controlled by MIDI clock messages from an external sequencer. You will not be able to change the tempo setting from the front panel while these letters are displayed.

Performance Monitors

The fields on the second, third, and fourth lines of this display page are *performance monitors* that let you see the current style and chord selections, the keyboard split point, the current setting of the TRANSPOSE keys, and the current drum mapping.

```
ARR:11 Arrange 11
♩=120 STYLE:P11 Open Rock     SPLIT:C4
      CHORD:                  XPOSE:0
▶KBD1:A11 Piano      OCTAVE=0 DRUM:5
 KBD2:A52 Deep Bass  OCTAVE=0
 DRUM PERC BASS ACC1  ACC2 ACC3 LOWER UPPER
 PLAY PLAY PLAY ▭▬▭  PLAY PLAY ▭▬▭  ON
```

Style and split point
Chord and transpose monitors
Drum mapping

```
   A    B    C    D    E    F    G    H
 [___][___][___][___][___][___][___][___]
```
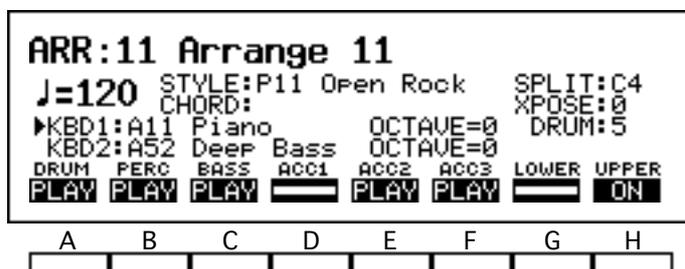
These fields all represent selections or settings you can make using the *i2/i3* keyboard or the controls on the front panel. It is not possible to select these fields using the CURSOR POSITION keys, as you would do with most other settings.

STYLE

This field shows the number and name of the style that has been selected for playing by the current arrangement.

You can change the style selection using the ARRANGEMENT/STYLE keys while the STYLE key is lit, as described on page 29 of the Player's Guide. The effect of this change will vary, however, depending on whether the arrangement is playing when you make your selection.

☞ **When you change the style…**

If the arrangement is *not* playing when you select a style, the *i2/i3* will change the Program, Volume, Panpot, and Tempo settings for the arrangement's backing tracks to those of the style you select (see page 21 and 25 for details on these parameters). It will also reset the Octave and Wrap-Around settings for the bass and accompaniment tracks to **0** and **STY** respectively (see page 9).

If the arrangement *is* playing, the *i2/i3* will use the new style without changing the backing track settings. This allows you to switch styles as you play without causing abrupt sound changes. The Tempo setting will change to that set as the default for the style, unless the TEMPO LOCK key is lit.

☞ **To select styles with a footswitch…**

You can also change the style selection using a footswitch or one of the pedals on an EC5 External Controller. These methods for controlling the style selection are enabled by Global mode settings.

To use a footswitch, set the Assignable Pedal parameter for the jack you will use to either **ARR/STYLE UP** or **ARR/STYLE DOWN** (see page 215). If you have an EC5, select one of the same two settings for the appropriate Switch parameter (see page 220).

CHORD

This field indicates the chord which the arrangement is currently set to play. The chord will determine how the style is processed by the note transposition tables (see page 18 of the Player's Guide).

When you select a new arrangement, this field will remain empty until you play a chord. You can change the chord setting by playing a chord in the chord-scanning range of the keyboard, and cancel the setting by pressing the RESET key. (See page 11 of the Player's Guide for details on the Chord Scanning function.)

You will find a set of figures illustrating the chords recognized by the *i2/i3* in Appendix C of this manual (see page 256).

SPLIT

This indicates the current keyboard split point. All of the keys from the split point on up are known as the *upper keyboard*, and those below it are known as the *lower keyboard*.

The split point divides the upper and lower keyboards for the purpose of chord scanning in the UPPER and LOWER chord scanning modes (see page 11 of the Player's Guide). It is also referred to by the mute buttons described on page 7, regardless of the chord scanning mode.

Finally, the split point will separate the two keyboard timbres—putting KBD1 in the upper keyboard, and KBD2 in the lower—when you use the *split* keyboard assign mode (see page 117 of the Player's Guide).

You can set the split point by pressing a key on the *i2/i3* keyboard while holding down any KEYBOARD ASSIGN key other than M.DRUMS.

XPOSE

This shows how many steps up or down the *i2/i3* has been transposed. Positive values indicate that the pitch has been raised; negative values indicate that it has been lowered.

You can transpose the *i2/i3* up or down to a maximum of eleven semitones using the TRANSPOSE keys. Transposition will affect not only the two keyboard timbres, but also all of the backing tracks and the Chord Scanning function as well.

DRUM

This field shows the number of the drum map that the arrangement is currently using. The drum maps determine what drum instruments are used by the arrangement's drum track, as shown by the Drum Map Tables in Appendix C (see page 263).

You can change the drum map selection by pressing one of the lower-row PROGRAM keys while the DRUM PROG key is lit, as described on page 10 of the Player's Guide. You can also set a default drum map for each of the arrangement's variations using the Default Drum Mapping parameters on Page 5 of the display (see page 14).

Keyboard Timbres and Mute Buttons

You can use the first parameters in the fourth and fifth lines of the ARR PLAY page to select programs for the two keyboard timbres. Next to these parameters are performance monitors that let you check the OCTAVE key settings for each timbre.

Keyboard timbres and octave monitors

Mute buttons

```
ARR:11 Arrange 11
♩=120  STYLE:P11 Open Rock    SPLIT:C4
       CHORD:                 XPOSE:0
▶KBD1:A11 Piano      OCTAVE=0  DRUM:5
 KBD2:A52 Deep Bass  OCTAVE=0
DRUM  PERC  BASS  ACC1  ACC2  ACC3  LOWER UPPER
PLAY  PLAY  PLAY  ▭     PLAY  PLAY  ▭     ON
─A─── ─B─── ─C─── ─D─── ─E─── ─F─── ─G─── ─H───
```

Finally, on the bottom line of the display, there are eight *mute buttons* that you can use to mute the backing tracks and the upper and lower keyboards.

The *i2/i3* will display both keyboard timbres only when you select the *layer* or *split* keyboard assign modes. (See page 117 of the Player's Guide for details on these modes.) To change the program selection or octave of one of these timbres, you must first use the ▲ and ▼ keys to select the timbre you want to edit using the arrowhead that appears to the left of the timbre names.

Program (KBD1)   [variable]

This parameter shows the number and name of the program selected for keyboard timbre KBD1.

Press the bank keys to switch between program banks. Enter the number of a desired program using the PROGRAM keys.

Bank	Programs	Comments
A	64	General MIDI programs 1–64 (ROM)
B	64	General MIDI programs 65–128 (ROM)
C	64	*i2/i3* preset programs (ROM)
D	64	User programs (RAM)

The *i2/i3* will play the selected program across the entire keyboard when you are using the single or layer keyboard assign modes, or on the upper keyboard alone when you use the split keyboard assign mode.

☞ **Want to play the drums manually?**

You may have noticed that drum programs are not included in the list of programs above. You must use the *manual drums* keyboard assign mode when you want to play the drums from the keyboard.

When you press the M.DRUMS key to select this keyboard assign mode, the *i2/i3* will automatically select the drum program specified by the Manual Drum parameter on Page 4 of the Arrangement Play display.

You can use the lower-row PROGRAM keys to change the KBD1 program selection to any of the eight *i2/i3* drum programs (Dr1 through Dr8). Please note, however, that you will not be able to change the drum mapping while you are playing in this mode.

☞ **Other ways to select programs…**

You can change the program selection for a keyboard timbre using a footswitch, one of the pedals on an EC5 External Controller, or MIDI program change messages. All of these program change methods are enabled by Global

mode settings. (If you are using the layer or split keyboard assign modes, you must first select the timbre to be changed, as described above.)

To use a footswitch, set the Assignable Pedal parameter for the jack you will use to either PROGRAM UP or PROGRAM DOWN (see page 215). If you have an EC5, select one of the same two settings for the appropriate Switch parameter (see page 220).

If you want the *i2/i3* to recognize MIDI program change messages, be sure the MIDI Filter Program Change parameter is set to **ENA** (see page 214).

Program (KBD2) [A11…D88]

This parameter shows the number and name of the program selected for keyboard timbre KBD2. The procedure for program selection and the range of available programs is the same as described for KBD1, with the exception that it is not possible to select a drum program for KBD2.

The *i2/i3* will play the selected program across the entire keyboard when you are using the layer keyboard assign mode, or on the lower keyboard alone when you use the split keyboard assign mode.

OCTAVE

These fields show you how many octaves up or down the corresponding keyboard timbres have been transposed. Positive values indicate that the octave has been raised; negative values indicate that it has been lowered.

You can transpose a selected keyboard timbre up or down to a maximum of two octaves using the OCTAVE keys. (See page 35 of the Player's Guide for details.)

Mute buttons [—, PLAY] *or* [—, ON]

The eight fields at the bottom of the ARR PLAY display let you mute the backing tracks and the upper and lower keyboards as you play.

Track muted

Track unmuted

Keyboard muted
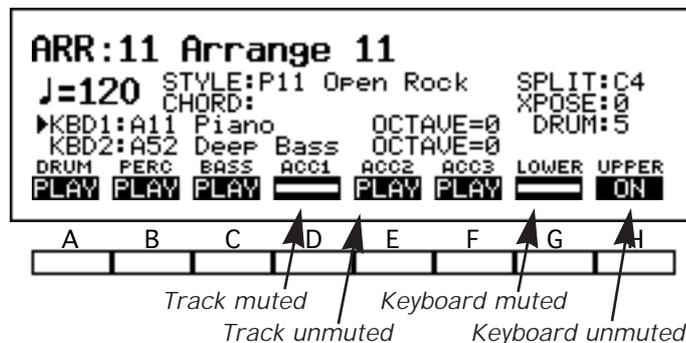
Keyboard unmuted

These buttons will appear as a blank bar for tracks or keyboards that are muted. This will switch to the word **PLAY** when you unmute a track, or the word **ON** when you unmute the upper or lower keyboard.

You can toggle the tracks and keyboards between muted and unmuted status by pressing the corresponding cursor keys.

TRACK PARAMETERS 1

The second page of the Arrangement Play mode display contains the basic track-related parameters. It lets you set the program selection, the volume, the panning, and effect send levels for each of the six backing tracks.

```
ARR:11 2:TRACK PARAM 1▶Program
▶DRUM:Dr1 GM Kit   V100  PRG  C3  D0
 PERC:Dr6 Perc Kit  V100  PRG  C3  D0
 BASS:A52 Deep Bass V100  CNT  C3  D1
 ACC1:A11 Piano     V100  CNT  C3  D1
 ACC2:A43 JazzGuitar V100 CNT  C3  D1
 ACC3:A86 Brass     V100  CNT  C3  D1
```

A	B	C	D	E	F	G	H

Please note that three of these settings—the Program, Volume, and Panpot parameters—can change automatically when you select a new style. Refer to the description of the STYLE field on page 4 of this manual for details.

Program   [A11…Dr8]

These parameters let you select the programs to be played by the corresponding backing tracks.

You can change the current program selection using either the VALUE controls or the PROGRAM keys, as described on page 27 and 28 of the Player's Guide.

Volume (V)   [0…127]

These parameters set the volume of the corresponding backing tracks.

Setting a track's volume to **0** will make it inaudible (although it will still use up some of the polyphonic capacity of your *i2/i3*). The highest setting of **127** will raise its volume to the maximum level set by the selected program's Level parameters (see page 124 and 126).

Panpot   [OFF, L15…L1, CNT, R1…R15, PRG]

These parameters set the stereo position of each track. They do this by adjusting the levels of the signals input to the effects system via channels A and B. (For an explanation of these channels and their relationship to the effects system, see pages 206 through 208 of this manual.)

The **CNT** setting centers the track. Settings preceded by an **L** move it to the left, whereas those preceded by an **R** move it to the right. The sound moves farther from the center as the numerical value of the setting increases.

The **OFF** setting lets you turn off the track's output to channels A and B altogether. Finally, a **PRG** setting tells the *i2/i3* to use the panning specified by the program's Panpot parameters (see page 125 and 126).

Effect Send Level C, D   [0…9, P]

These parameters determine the levels of the backing track signals that are sent to the effects system via channels **C** or **D**.

You can set a level from **0** (no signal) to **9** (maximum) for each channel. If you set these parameters to **P**, the *i2/i3* will use the effect send levels specified by the program's parameters (see page 125 and 127).

The nature of these effect send channels and their relationship to the stereo channels (A and B) are described in detail on pages 206 through 208.

TRACK PARAMETERS 2

Page 3 of the Arrangement Play mode display contains additional parameters for the backing tracks. In addition to settings that select the output destination for each track, there are also parameters that let you adjust the octave in which the bass and accompaniment tracks play.

```
ARR:11 3:TRACK PARAM 2

DRUM:Out=BOTH
PERC:Out=BOTH
BASS:Out=BOTH  Octave=+0  Wrap-Around=STY
ACC1:Out=BOTH  Octave=+0  Wrap-Around=STY
ACC2:Out=BOTH  Octave=+0  Wrap-Around=STY
ACC3:Out=BOTH  Octave=+0  Wrap-Around=STY
```

A	B	C	D	E	F	G	H

With the exceptions of the Octave and Wrap-Around parameters, which are not available for the drum and percussion tracks, the three parameters on this page are the same for all the backing tracks. They are therefore described below only once.

Track Status (OUT)   [OFF, INT, EXT, BOTH]

These parameters determine whether the *i2/i3* will play or transmit data for the corresponding backing tracks during arrangement playback.

When you set one of these parameters to **OFF**, the *i2/i3* will not play back the corresponding track at all. When you select **INT**, it will send the track's data to the internal tone generator, but it will not transmit it from the MIDI OUT jack.

You can select **EXT** when you want the *i2/i3* to transmit a track's data to an external tone generator without playing the data itself. Finally, the **BOTH** setting lets you send track data to both destinations. This is the normal setting for each track.

Octave   [–2…+2]

These parameters let you raise or lower the octaves in which the bass and accompaniment tracks play, to a maximum of two octaves. A setting of **0** produces the standard pitch for the selected program.

Wrap-Around   [STY, 1…12]

Each of these parameters lets you specify a pitch (relative to the tonic set for each of the selected style's chord variations using the Key parameter described on page 23) at which the corresponding track will drop an octave. This prevents the backing tracks from rising to unnaturally high pitches when you play chords pitched high above the tonic.

You can set a pitch from one to twelve semitones above the tonic as the wrap-around point for the bass and each of the accompaniment tracks. You can also select **STY** if you want a track to use the wrap-around setting of the style that is being played.

☞ **Set different wrap-around points for each track!**

It is a good idea to set the wrap-around points to a different value for each track, to increase contrary motion. If you set all of the Wrap-Around parameters to the same value, then all of the backing tracks will drop an octave at the same time, creating a potentially comic effect.

When selecting wrap-around points for an arrangement, you may find it helpful listen to one track only—you can do this by muting all the others with the buttons on Page 1 of the display—and try out each wrap-around point while playing the chord progression you will use when performing. Do this for each track in turn, and you may come up with a very natural-sounding arrangement.

ARRANGEMENT PARAMETERS 1

The fourth display page in Arrangement Play mode contains some basic parameters for the two keyboard timbres, KBD1 and KBD2. It also lets you set the default drum program for the *manual drums* keyboard assign mode, and the default setting of the Chord Latch function.

```
ARR:11 4:ARR PARAM 1   ▶Volume

KBD1: V100   CNT    C Level=5  D Level=3
      Vel Window=001▶127 Damper:ENABLE
KBD2: V100   CNT    C Level=3  D Level=1
      Vel Window=001▶127 Damper:ENABLE
Manual Drum: Dr1 GM Kit
Chord Latch:OFF
```

A	B	C	D	E	F	G	H
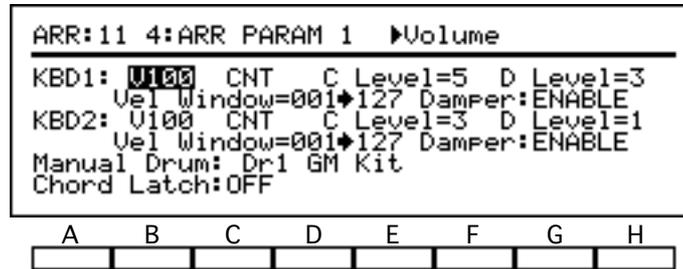
The parameters for KBD1 are on the first and second lines of the display; those for KBD2 are on the third and fourth lines. Since these parameters are the same for both timbres, they are described only once below.

Volume (V)   [0…127]

These parameters set the volume of the corresponding keyboard timbres.

Setting a timbre's volume to **0** will make it inaudible. The highest setting of **127** will raise its volume to the maximum level set by the selected program's Level parameters (see page 124 and 126).

☞ **Use the mute buttons to mute the keyboard!**

A keyboard timbre whose Volume parameter has been set to **0** will still use up some of the polyphonic capacity of your *i2/i3*. If you want to mute the *i2/i3* keyboard for any reason, we suggest using the mute buttons on Page 1 of the Arrangment Play display instead (see page 7).

Panpot   [OFF, L15…L1, CNT, R1…R15, PRG]

These parameters set the stereo position of each timbre. They do this by adjusting the levels of the signals input to the effects system via channels A and B. (For an explanation of these channels and their relationship to the effects system, see pages 206 through 208 of this manual.)

The **CNT** setting centers the timbre. Settings preceded by an **L** move it to the left, whereas those preceded by an **R** move it to the right. The sound moves farther from the center as the numerical value of the setting increases.

The **OFF** setting lets you turn off the timbre's output to channels A and B altogether. Finally, a **PRG** setting tells the *i2/i3* to use the panning specified by the program's Panpot parameters (see page 125 and 126).

## Effect Send Level C, D   [0…9, P]

These parameters determine the levels of the timbre signals that are sent to the effects system via channels **C** or **D**.

You can set a level from **0** (no signal) to **9** (maximum) for each channel. If you set these parameters to **P**, the *i2/i3* will use the effect send levels specified by the program's parameters (see page 125 and 127).

The nature of these effect send channels and their relationship to the stereo channels (A and B) are described in detail on pages 206 through 208.

Vel Window Top   [001…127]

These parameters set the highest velocities at which the corresponding timbres will play note data. When performing with the *layer* keyboard assign mode,

you can use them together with the Vel Window Bottom parameters, described below, to combine the two keyboard timbres in a velocity-switch or velocity-layer arrangement.

For example, you might set the Vel Window Top parameter for KBD1 to **100**, and the Vel Window Bottom parameter for KBD2 to **101**. The timbres would play different programs—muted and picked guitar sounds, for example—to create the overall effect of a guitarist switching between muted and open playing styles.

You can also overlap velocity windows to create layered effects. For example, you might set one timbre to play a piano sound at all times, and another to add an organ at higher velocities only.

☞ **Set these parameters from the keyboard!**

You can set the velocity window parameters by playing notes at the desired velocities on the *i2/i3* keyboard while holding down the cursor key for the corresponding keyboard timbre.

Vel Window Bottom   [001…127]

These parameters set the lowest velocity at which the corresponding timbres will play note data. You can use them in combination with the Vel Window Top parameters, described above.

Damper   [DISABLE, ENABLE]

These parameters let you disable the damper switch for the corresponding keyboard timbres.

This can be handy when you will be playing two programs—such as an organ and a piano—in the layer keyboard assign mode. By disabling the damper for the organ timbre, you can use the pedal to sustain the piano without affecting the organ.

You may also want to prevent your damper switch from holding notes, as it normally does, if you will be using it to control the Chord Latch function. (See the description of the Chord Latch parameter below, for details on this function.)

Manual Drum   [Dr1…Dr8]

This parameter shows the number and name of the arrangement's default manual drum program.

You can set this parameter to any one of the eight *i2/i3* drum programs. The program you set here will automatically be selected for KBD1 when you press the M.DRUMS key to switch to the *manual drums* keyboard assign mode. (See page 118 of the Player's Guide for details on this mode.)

Chord Latch   [ON, OFF]

This turns the *i2/i3* Chord Latch function on and off.

The Chord Latch function lets you use a damper switch to prevent the arrangement's chord setting (that is, the one that appears on Page 1 of the display) from changing. Doing so will allow you to play chords on the keyboard without changing how the arrangement plays back.

If you will use the Chord Latch function, you may want to prevent the damper switch from acting as a hold pedal for one or both keyboard timbres. You can do this using the Damper parameter, described above.

ARRANGEMENT PARAMETERS 2

Page 5 of the Arrangement Play mode display features settings that determine how the arrangement will play back the style selected on Page 1. On the first three lines you will find parameters that let you adjust the performance of the drum track. The remaining parameters specify which style variations the *i2/i3* will play after each fill.

```
ARR:11 5:ARR PARAM 2

Kick Designation:▣  Snare Designation:A
Default Drum Mapping:
 VAR1=5    VAR2=6    VAR3=8    VAR4=7

Variation Change by Fill 1: 1↔2
Variation Change by Fill 2: 3↔4
```

```
  A     B     C     D     E     F     G     H
┌─────┬─────┬─────┬─────┬─────┬─────┬─────┬─────┐
│     │     │     │     │     │     │     │     │
└─────┴─────┴─────┴─────┴─────┴─────┴─────┴─────┘
```
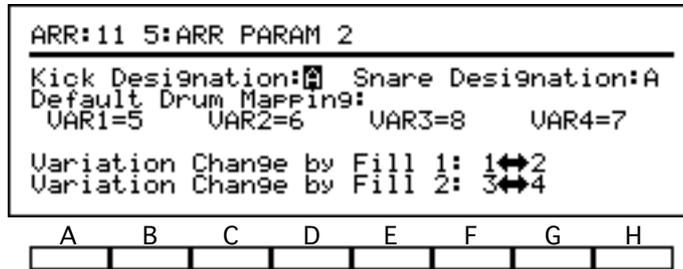
There are two Variation Change parameters: one for Fill 1, and another for Fill 2. We have described these parameters only once below.

Kick Designation   [A…D]

This parameter sets the instruments that your arrangement will use for the selected style's kick drum part.

Setting	What you will hear (when using drum maps 2–8)
A	Kick 1 (C2)
B	Kick 2 (B1)
C	Kick 3 (G1)
D	Kick 4 (E1)

This table assumes that the style's kick drum part was recorded using Kick 1. The correspondence will shift for styles that use the other kick sounds. See the Kick and Snare Designation tables on page 263 for details.

Please keep in mind that the actual sound produced by each of these instruments depends on the drum program selection.

This parameter has no effect when using drum map 1 (the percussion map).

Snare Designation   [A…D]

This parameter sets the instruments that your arrangement will use for the selected style's snare drum parts.

Setting	What you will hear (when using drum maps 3–8)
A	Snare 1 (D2)
B	Snare 2 (E2)
C	Snare 3 (A1)
D	Snare 4 (F1)

This table assumes that the style's snare drum part was recorded using Snare 1. The correspondence will shift for styles that use the other snare sounds. See the Kick and Snare Designation tables on page 263 for details.

Please keep in mind that the actual sound produced by each of these instruments depends on the drum program selection.

This parameter has no effect when using drum map 1 (percussion), or drum map 2 (no snare).

Default Drum Mapping (VAR1…VAR4) [1…8]

These four parameters select a default drum mapping for each of the arrangement's variations. Set the number of the drum map you want each variation to play.

You can override these defaults while performing with a variation by pressing the DRUM PROG key, then manually selecting the number of the desired drum map, as described on page 10 of the Player's Guide.

The number of the currently selected drum map will appear in the DRUM field on Page 1 of the Arrangement Play display. See page 5 for details.

Variation Change [OFF, →1…→4, 1↔2…3↔4, UP, DOWN]

These two parameters let you specify which variation the arrangement should switch to after it plays each of the fills.

You can set one of these parameters to **OFF** when you want the *i2/i3* to continue with the variation it was playing before the fill. Settings preceded by a one-way arrow will always select the same variation; a fill whose Variation Change parameter is set to →**2**, for example, will always select Variation 2 when it's done playing.

Settings with two-way arrows will tell a fill to alternate between two variations. If, while playing Variation 2, you select a fill whose Variation Change parameter is set to **2↔3**, the *i2/i3* will follow the fill with Variation 3. Selecting the same fill again will cause it to switch back to Variation 2. If you select the fill while Variation 1 or 4 is playing, however, it will continue playing the same variation.

The **UP** and **DOWN** settings tell the arrangement to follow each fill with the next variation up or down. These settings will cause the variation to cycle: if, while playing Variation 4, you select a fill whose Variation Change parameter is set to **UP**, the *i2/i3* will switch to Variation 1 when it's done playing the fill.

EFFECT

Page 6 of Arrangement Play mode lets you use two digital signal processors to apply effects to your arrangements. Since both processors can apply two effects simultaneously, you can apply a variety of different effects to the programs playing the arrangement.

```
ARR:11 6:EFFECT       ▶Effect Type

FX1 06:Live Stage    :ON  Mod:NONE   I+00
  2.0 P020 E60  HD20       L+03 H+00 →60:40

FX2 24:Symphonic Ens:ON  Mod:NONE   I+00
  M80                      L+00 H+00 →50:50
[PARALLEL3] FX1:L3   R3   FX2:L4     R4
```
```
  A    B    C    D    E    F    G    H
```

All of the programs played by an arrangement will use the effect settings you make on this page. You should be aware, however, that the effect settings you select in Arrangement Play mode may differ from those assigned to the programs in Edit Program mode. Hence, if you use Program mode to audition programs before assigning them to an arrangement, you may find that some of them—those that use less common effect settings—will fail to produce the sound you expect when the arrangement plays.

The simplest way around this would be to audition programs in Arrangement Play mode, after first selecting the arrangement's effects. If you find this limiting, however, you may want to try a more involved approach. You could audition the sounds in Program mode, then try to create an effect setup—using dual effects, if necessary—that reproduces as many of the programs' individual effects as possible.

As a third alternative, you could take a course similar to that followed by many recording engineers. First, audition the programs without any effects at all, selecting them for their raw sound qualities. Then, after assigning them to the tracks and keyboard timbres, add the effects in gradually to create a customized effects setup that brings out the best features of each program.

You will find this last method most convenient if you will be creating new styles for your arrangements to play. Since Edit Style mode always plays programs without effects, you can audition your programs in that mode as you record the tracks.

Because the EFFECT page in Arrangement Play mode presents you with the same effect options as the Backing Sequence, Song, and Edit Program modes, the contents of this page are described in their own chapter. Please refer to Chapter 7 for details on the effect settings.

UTILITY

The UTILITY page in Arrangement Play mode offers several convenient utility functions that you can use when editing programs. The first two functions let you save your arrangements and give them names. The remaining three functions help you save time by copying groups of settings between arrangements, or within an arrangement.

```
ARR:11 7:UTILITY      ▶ARR12 Arrange 12
▶Write Arrangement    Copy/Swap FX
 Rename Arrangement
 Copy Arrangement
 Copy All Effects
 ARR11 My Arrange ➡ ARR12        WRITE
```
```
  A   B   C   D   E   F   G   H
```
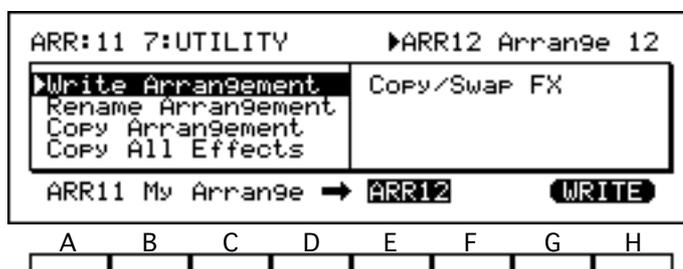
You will make all of the settings for the functions described here on the bottom line of the display. Use the cursor keys (A through H) when you want to select a different setting. Commands such as [WRITE] and [COPY] are displayed in reverse by the LCD (but indicated by brackets in this manual). Selecting such a command will execute an operation.

Write Arrangement   *function*

This function lets you store an arrangement you've edited in the memory of the *i2/i3*.

When you store an arrangement, the *i2/i3* will memorize not only the settings you have made in the seven display pages of this mode, but also the current settings of all front panel keys that you can use to control your arrangement (with the exception of the SYNCHRO START/STOP key).

To use this function, enter the arrangement number where you want to save the data above cursor key E. The name of the arrangement already stored under that number will appear in the upper right corner of the display. Be certain that you don't need this arrangement, or that you have a copy of it elsewhere, as its data will be lost—replaced by your edited arrangement—when you execute the Write Arrangement function.

When you are sure of the destination, select [WRITE]. The *i2/i3* will store the data after asking for confirmation.

This function will not work if the Arrangement Protect parameter has been turned on in Global mode. See page 219 of this manual for details.

☞ **Another Write function…**

As an alternative to the Write Arrangement function, you can simply press the REC/WRITE key to store your arrangement under the current arrangement number. See page 18 for details.

Rename Arrangement   *function*

You can use this function to change the name of the arrangement you're editing. An arrangment's name can consist of up to ten characters.

When you select this function, the current arrangment name will appear on the bottom line of the display above cursor keys B, C, and D. Change this to the new name as described on page 33 of the Player's Guide.

```
ARR:11 7:UTILITY
┌──────────┬────────────────────────┐
│Write Arr │ABCDEFGHIJKLMNOPQRSTUVWXYZ│
│▶Rename Ar│abcdefghijklmnopqrstuvwxyz│
│Copy Arra │01234567890!"#$%&'        │
│Copy All  │()*+,`-./:;<=>?[¥]^_{|}→← │
└──────────┴────────────────────────┘
ARR11 Mʏ Arrange     INS  DEL  ◀   ▶
```

     A   B   C   D   E   F   G   H
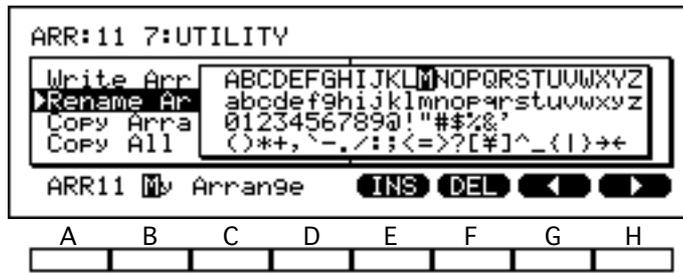
There is no need to "execute" the name change. The arrangement's name is actually a special kind of parameter. The *i2/i3* will memorize the new name—together with the settings on the other pages of the Arrangement Play mode display—when you store the arrangement using the Write Arrangement function, described above.

Copy Arrangement   *function*

This function lets you copy all of the settings from another arrangement into the arrangement you are editing. It copies all of the settings that are saved by the Write Arrangement function.

To use this function, first select the arrangement whose data you want to copy. The number and name of the arrangement you select will appear on the bottom line of the display above cursor keys A through D.

```
ARR:11 7:UTILITY        ▶ARR12 Arrange 12
┌──────────────────┬────────────────────┐
│Write Arrangement │Copy/Swap FX        │
│Rename Arrangement│                    │
│▶Copy Arrangement │                    │
│Copy All Effects  │                    │
└──────────────────┴────────────────────┘
 ARR:12 Arrange 12                  COPY
```

     A   B   C   D   E   F   G   H
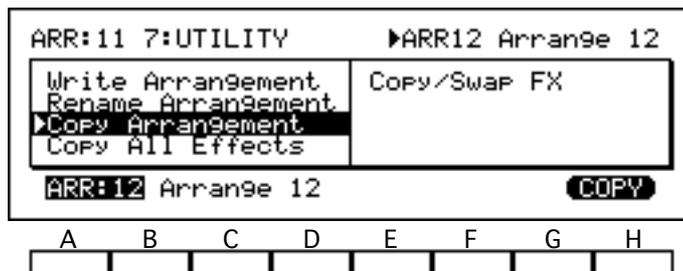
When you have chosen a source arrangement, select [COPY]. The *i2/i3* will copy the data after asking for confirmation.

Copy All Effects   *function*

This function copies the effect settings from a program, a backing sequence, a song, or another arrangement into the arrangement you are editing.

To use this function, select the type of data from whose effect parameters you want to copy above cursor keys B and C, and the number of the arrangement, backing sequence, song, or program in question above key E.

```
ARR:11 7:UTILITY        ▶Source Mode
┌──────────────────┬────────────────────┐
│Write Arrangement │Copy/Swap FX        │
│Rename Arrangement│                    │
│Copy Arrangement  │                    │
│▶Copy All Effects │                    │
└──────────────────┴────────────────────┘
 from Arrangement - ARR11            COPY
```

     A   B   C   D   E   F   G   H
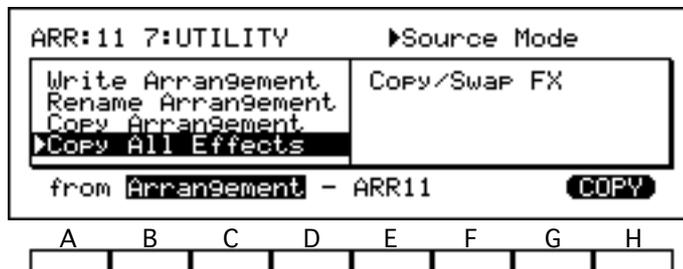
When you are sure of your choices, select [COPY]. The *i2/i3* will copy the data after asking for confirmation.

Copy/Swap FX *function*

This function copies or exchanges the parameter values of the effect selections for the arrangement you're editing.

To use this function, first select the direction in which you will be copying effect data. A one-headed arrow pointing in either direction will result in two effects with exactly the same settings. When the arrow points in both directions, the function will swap the data for Effect 1 with that for Effect 2.

```
ARR:11 7:UTILITY        ▶Direction

 Write Arrangement    ▶Copy/Swap FX
 Rename Arrangement
 Copy Arrangement
 Copy All Effects

 FX1 ━━▶ FX2                 COPY
```

A	B	C	D	E	F	G	H
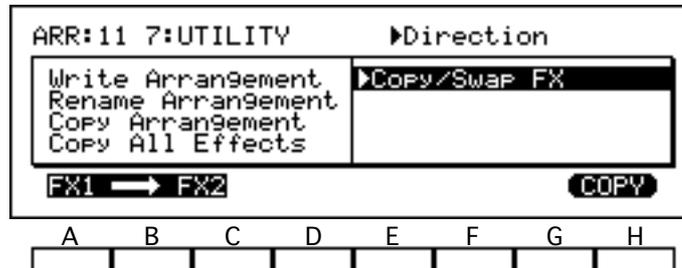
When you are sure of your choice, select [COPY] or [SWAP]. The *i2/i3* will copy or swap the data after asking for confirmation.

Write *function*

It is a good idea to store your arrangements frequently while editing, as the changes you make will be lost forever should you mistakenly switch to another mode or select another arrangement.

You can of course do this with the Write Arrangement function described above. But since it would be a bother to flip to the utility page frequently, the *i2/i3* provides a secondary Write function that you can use to quickly store your arrangements to the current arrangement number.

To use this function, just press the REC/WRITE key. The *i2/i3* will prompt you to confirm the Write operation. Press E or F to store your changes, or G or H if you change your mind.

This function stores not only the settings you have made in the seven display pages of Arrangement Play mode, but also the current settings of all front panel keys that you can use to control your arrangement (with the exception of the SYNCHRO START/STOP key). It is thus like the Write Arrangement function in all ways, except for the fact that you cannot select a destination arrangement number.

This function will not work if the Arrangement Protect parameter has been turned on in Global mode. See page 219 of this manual for details.

Chapter 2
Edit Style Mode

The *i2/i3*'s Edit Style mode lets you record *styles* composed of ten *elements*: four variations, each having six chord-triggered sub-variations; and two intros, two endings, and two fills, each of which has two sub-variations. All of these elements can consist of up to six *backing tracks*—a drum part, a percussion part, a bass part, and three accompaniment parts—and be as many as sixteen measures long.

The *i2/i3* lets you record styles by playing them on the keyboard, using what is known as *realtime recording*. It can also record music as individual steps of data using the *step recording* method. As a third option, you can record as many as 100 *patterns* for each style, then assign them to the style's tracks. *Pattern recording*, as this is known, helps you save memory when recording short phrases that are repeated often in a style.

The Edit Style mode divides its parameters and functions among six display pages, which are summarized on the following page of this manual. You can switch through these pages using the PAGE+ and PAGE– keys, or by pressing the DATA ENTRY key bearing the number of the desired page while holding down the EDIT STYLE key.

The general procedures for editing parameters and using utility functions are outlined in Chapter 3 of the Player's Guide. Procedures for recording and editing styles are covered in Chapter 9 of that manual.

The *i2/i3*'s sequence memory can hold as many as four user styles and their patterns, up to a total of 15,000 steps of sequence data. Since this memory is battery-backed, its contents will not be lost when you turn off the *i2/i3*.

While recording and editing styles, you can press the COMPARE key at any time to undo the last change you made, be it a newly recorded track or a minor adjustment made with an editing function. Pressing this key a second time will restore the change. You can thus use the COMPARE key to double-check the results of any change you make.

The Compare function may be limited in some cases by the amount of available memory. (It borrows some of the sequence memory used by the Song and Backing Sequence modes.) When there is not enough memory for the *i2/i3* to let you compare data after making a major change, it will warn you of this fact beforehand. You may want to save the current data to disk before going ahead with the change, so you will have the old data handy in case you're not satisfied with the results of the change.

Functions in Edit Style Mode

The table below shows the layout of the *i2/i3*'s Edit Style mode. For each display page we list the page title, a brief outline of the page's contents, and the numbers of the pages in this manual where you will find these contents described.

Page	Title	Contents	Description
1	REALTIME	Track program, volume, and pan settings	21
		Style element pointers, length, and key	22–23
		Track, tempo, beat, and recording controls	25–27
2	STYLE PARAMETERS	Wrap-around point, note retrigger, and tension settings	28–29
3	CHORD VARIATION TABLES	Chord variation assignments	30
4	EDIT	Step Recording	31
		Event Edit	31
		Erase Style	32
		Copy Style	32
		Erase Track	33
		Copy Track	33
		Rename Style	34
5	EDIT TRACK	Quantize	35
		Shift Note	36
		Key Transpose	36
		Modify Velocity	37
		Put/Copy Pattern	38
		Erase Measure	39
		Get From Song	39
6	PATTERN	Realtime Recording	41
		Step Recording	42
		Event Edit	42
		Pattern Parameters	43
		Erase Pattern	43
		Get From Track	43
		Bounce Pattern	44
		Copy Pattern	44

REALTIME

On the first page of the Edit Style mode display you will find the settings you need for most realtime style recording operations. The first four lines of the display let you change the basic parameters for each of the style's tracks.

Style number and name   *Program number and name*

Program parameters
Volume parameters
Panpot parameters
Style element pointers, length, and key
Track, tempo, beat, and recording controls

```
STYLE:U1 UserStyle1  ▶Dr1 GM Kit
┌────┐┌────┐┌────┐┌────┐┌────┐┌────┐
│DRUM││PERC││BASS││ACC1││ACC2││ACC3│
└────┘└────┘└────┘└────┘└────┘└────┘
┌──┐
│Dr1│ Dr6  A52  A11  A43  A86
└──┘
V100 V100 V100 V100 V100 V100
PRG  PRG  CNT  CNT  CNT  CNT
STYLE:U1 VAR1 CV1     LEN04 C
DRUM ♩=120 M--   4/4  HI OFF
```

  A B C D E F G H

The bottom two lines of this display page contain the style element pointers and a number of other important settings that you will use when recording styles in real time. These settings are all described in the next sections.

Program   [A11…Dr8]

These fields let you select the default program to be played by each track. The *i2/i3* will display the number and name of the selected program in the upper right corner, in place of the parameter name.

You can change the current program selection using either the VALUE controls or the PROGRAM keys, as described on page 27 and 28 of the Player's Guide.

Volume (V)   [0…127]

These fields set the volume of each track.

Setting a track's volume to **0** will make it inaudible (although it will still use up some of the *i2/i3*'s polyphonic capacity). The highest setting of **127** will raise the volume to the maximum level set by the selected program's Level parameters (see page 124 and 126).

Panpot   [OFF, L15…L1, CNT, R1…R15, PRG]

These fields set the stereo position of each track.

The **CNT** setting centers the track. Settings preceded by an **L** move it to the left, whereas those preceded by an **R** move it to the right. The sound moves farther from the center as the numerical value of the setting increases.

The **OFF** setting lets you turn off the track's output to channels A and B altogether. Finally, a **PRG** setting tells the *i2/i3* to use the panning specified by the program's Panpot parameters (see page 125 and 126).

Style Element Pointers and Style Length

The first setting on the fifth line of the Edit Style mode display lets you change the current style selection. The remaining settings let you select a style element and chord variation to record, and specify the length and tonic key of that chord variation.

Style, element, and chord variation

```
STYLE:U1 UserStyle1
DRUM  PERC  BASS  ACC1  ACC2  ACC3
Dr1   Dr6   A52   A11   A43   A86
V100  V100  V100  V100  V100  V100
PRG   PRG   CNT   CNT   CNT   CNT
STYLE:U1 VAR1 CV1      LEN04 C
DRUM ♩=120 M--   4/4    HI M:OFF
```

```
A   B   C   D   E   F   G   H
```
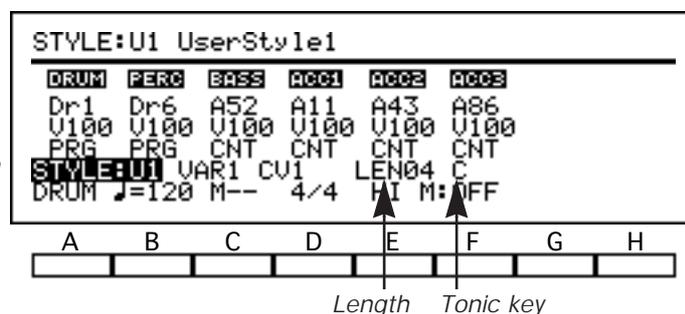
Length   Tonic key

We strongly recommend that you carefully plan out the structure of your style, giving special attention to the length and tonic key of each chord variation, before you begin recording. It is possible to change the length and tonic key settings for chord variations which contain data; however, doing so may entail some tedious editing that you can avoid with forethought.

Style   [U1…U4]

This setting selects the user style to be recorded.

The number and name of the current style selection also appear in the upper left corner of the display. You can change the style's name using the Rename Style function described on page 34.

Style Element   [VAR1…FIL2]

This setting specifies a style element for recording. You can select from four variations (**VAR1** through **VAR4**), two intros (**INT1** and **INT2**), two endings (**END1** and **END2**), and two fills (**FIL1** and **FIL2**).

☞ **Beware of untransposed elements!**

Please be aware that two elements of every style—INT1 and END1—are intended mainly for hands-off performance, and so are never processed by the *i2/i3* Note Transposition Tables. If you try playing chord changes in the middle of these elements, you may hear results that you would not normally expect of the *i2/i3*.

When recording sequences for these elements, therefore, you should not worry about making them adaptable to chord changes, as you would for other elements. Play them exactly the way you want them to sound. And if you will be using them for several different songs, you might consider giving them a generic sound that you can garnish with different melody lines, to keep them from sounding repetitious.

Chord Variation   [variable]

This setting lets you specify which of the selected style element's chord variations you want to record. You can choose any of six chord variations (**CV1** through **CV6**) when recording a variation, or one of two chord variations (**CV1** and **CV2**) when recording an intro, ending, or fill.

Length (LEN)   [1…16]

This parameter lets you set a length of up to sixteen measures for each chord variation you record. All the tracks in the chord variation will have the same length.

☞ **Varying the lengths of chord variations**

It is possible to set different lengths for each of the chord variations within a single style element. You may find, however, that changing chords while such an element is playing can produce some unexpected results.

Let's say, as an example, you have recorded two chord variations for INT1. The first, which you have assigned to major chords on the CHORD VARIATION TABLES display page (see page 30), is eight measures long. The second, which you use for minor chords, is only four measures long.

If you begin playing the intro with a major chord, then switch to a minor chord, the measure in which CV2 begins playing will depend on the timing of your chord change. The first four measures of CV1 correspond exactly to the four measures of CV2. The second four measures of CV1 repeat this correspondence, as shown in the illustration below.

Play a minor chord here

CV1
(assigned to major chord)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

pp　　　　　　　　　　*mf*　　　　　　*ff*

CV2
(assigned to minor chord)

| 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |

pp　　　　　　*ff*　　*pp*　　　　*ff*
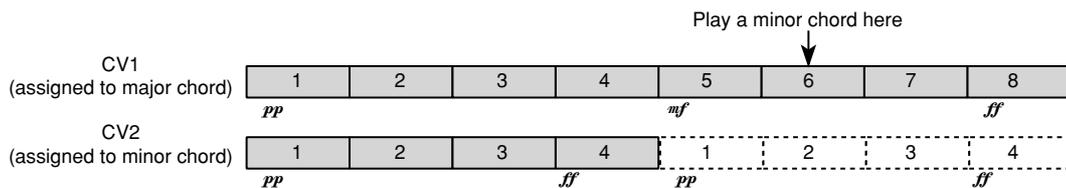
Thus, if you change to a minor chord at the start of the intro's sixth measure, the *i2/i3* will switch to the second measure of CV2. If CV1 had begun building to a climax in measure 5, the switch to CV2 may sound rather abrupt.

Since it takes skillful programming to avoid such difficulties, we recommend using the same Length setting for all chord variations within a style element.

☞ **Changing the length of a recorded chord variation**

It is also possible to change the Length settings of chord variations that already contain recorded data. This means you can lengthen a chord variation, then record new data in the added measures.

If you shorten a chord variation, the *i2/i3* will truncate it by the amount of the change. If you record an eight-measure variation, then shorten it to four measures, for example, the *i2/i3* will loop through the variation as though you had originally recorded it at a length of four measures.

The *i2/i3* will keep the truncated measures, however, so you can restore the chord variation to its original length without having to re-record it. This feature may come in handy when you want to try out shorter and longer versions of a single style element.

Key   [C…Bm]

This parameter lets you set any major or minor key as the tonic key of the chord variation you have selected. All the tracks in the chord variation will use the same key.

Be careful to choose the key that best matches the data you will record for each of the tracks, as the handling of this data by the Note Transposition Tables will be based entirely on this setting. If you enter an inappropriate key, the music that you hear when you try playing the style will be unpredictable at best.

☞ **Varying the key between chord variations**

It is possible to set different keys for different chord variations. As long as the Key setting of each chord variation is appropriate for the data you record in it, the style should play back as expected.

However, the fact that you are using different keys may make it difficult to predict the effects of the Wrap-Around Point settings you make in Edit Style

mode (see page 28) or Arrangement Play mode (see page 9). For this reason, we recommend using the same tonic key throughout each style you create. (The preset styles in your *i2/i3* were recorded entirely in the convenient tonic keys of C major or C minor for this very reason.)

☞ **Changing the key setting for a recorded chord variation**

If you want, you can change the Key settings of chord variations that already contain data. You should keep in mind, however, that by doing so you will alter the *i2/i3* music processor's interpretation of the data. The results can range from interesting to bizarre.

One instance in which you may need to change a chord variation's tonic key is when you use the Key Transpose function described on page 36 to transpose its data from a major to a minor key, or vice-versa.

There is really no need (other than personal convenience) to transpose from one major key to another—or one minor key to another—because the *i2/i3* Note Transposition Tables can easily accomplish such transpositions while you perform.

Tempo, Beat, and Recording Controls

The first four settings on the bottom line of the Edit Style mode REALTIME page let you set the track to be recorded, the style's tempo, and the time signature for the current chord variation. You can use the remaining two settings to change the quantize value used during realtime recording and turn the metronome on and off.

Track, Tempo, Beat

Recording controls
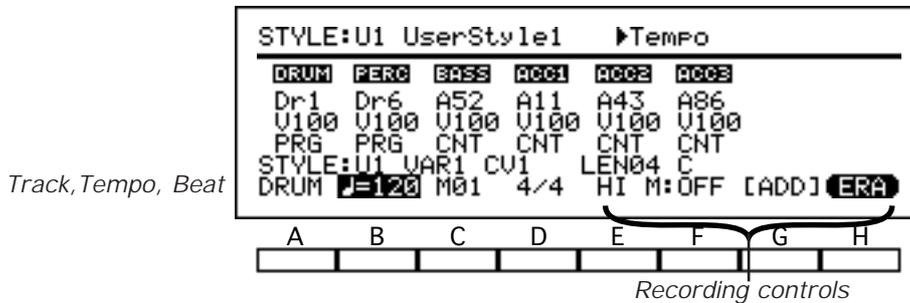
When you start recording, the *i2/i3* will display a pair of function buttons in the lower right corner of the display. These buttons, which let you erase notes from the range of measures being recorded, are explained in the description of the pattern recording method on page 76 of the Player's Guide.

Track   [DRUM, PERC, BASS, ACC1…ACC3]

This setting lets you specify which track of the currently selected chord variation you want to record.

Tempo   [40…240]

This adjusts the style's recording tempo. You can set the tempo to any value between 40 and 240 beats per minute.

The tempo you set here will also be the style's default playback tempo. You may find it helpful to slow down the tempo while recording, then speed it up for playback. You can change the tempo as desired while recording.

☞ **External clock control**

The letters **EXT** will appear in place of a tempo when the Global mode Clock Source parameter is set to **EXT** (see page 212). This indicates that the *i2/i3*'s tempo is being controlled by MIDI clock messages from an external sequencer. You will not be able to change the tempo setting from the front panel while these letters are displayed.

Measure   [1…16]

This indicates the current measure.

The *i2/i3* will reset the measure pointer automatically whenever you press the START/STOP button to end style recording or playback.

Beat   [1/4…16/16]

This setting displays the time signature for the current measure.

Each time you begin recording a new style, the Beat parameter will reset to its default value of 4/4. When you press the REC/WRITE key to ready the *i2/i3* for recording, the digits of the time signature will be replaced by asterisks.

```
┌────────────────────────────────────────────┐
│ STYLE:U1 UserStyle1    ▶Beat                │
│ ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━     │
│ [DRUM] [PERC] [BASS] [ACC1] [ACC2] [ACC3]   │
│ Dr1  Dr6  A52  A11  A43  A86                │
│ V100 V100 V100 V100 V100 V100               │
│ PRG  PRG  CNT  CNT  CNT  CNT                │
│ STYLE:U1 VAR1 CV1    LEN04 C                │
│ DRUM ♩=120 M-- [**/**] HI M:OFF             │
└────────────────────────────────────────────┘
     A    B    C    D    E    F    G    H
   ┌────┬────┬────┬────┬────┬────┬────┬────┐
   └────┴────┴────┴────┴────┴────┴────┴────┘
```

You can select a different time signature (1/4 to 5/4, 1/8 to 10/8, or 1/16 to 16/16) *before* you press START/STOP to begin recording. If you do not, the *i2/i3* will record in 4/4 time.

☞ **Changing the time signature in a track**

You cannot set a change of time signature while recording in the middle of a chord variation, as you can in Song mode, because the measure counter will reset when you stop recording. If you want a chord variation to contain time signature changes, you must insert them using the Event Edit function described on page 31.

When you are adding tracks to a chord variation, the *i2/i3* will record the new data using the same time signature as the existing tracks unless you change it before you begin recording. If the other tracks contain a change in time signature, the new track will follow that change.

Be aware, however, that any changes in time signature will apply to *all* tracks that contain data. If you change the Beat parameter for one track, the *i2/i3* will truncate or expand each measure of data in the other tracks to match the new time signature, as shown below.

Rest inserted

Not played
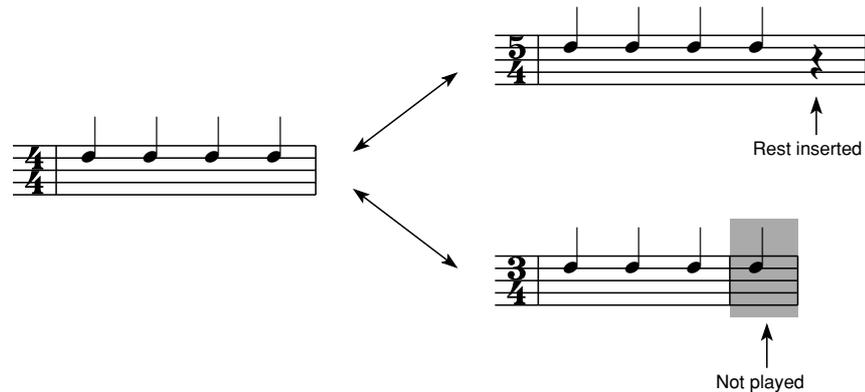
If you should accidentally truncate any measures by changing the beat parameter, don't worry: the *i2/i3* still has the data for the ends of those measures. Just re-record the new track using the old time signature—or change the time signature using the Event Edit function—and the other tracks should return to normal.

It is not possible to change the Beat setting during recording or playback.

Quantize   [HI, ♪3…♩]

The Quantize parameter sets the degree of accuracy to which the *i2/i3* will adjust the timing of track data as you record it.

You should set this parameter to **HI** when you want your recorded data to reproduce precisely the timing of the original performance. When you use this setting, the *i2/i3* will record data using a resolution of 96 pulses per quarter note (PPQN).

Other settings will adjust the timing of all recorded data to the nearest interval specified by the setting. Thus, if you set this parameter to ♩, all of the notes you play will be recorded as quarter notes.

If you record pitch bends or other constantly changing control data with a rough quantization such as ♪ or ♩, the control change will produce an unnatural stepped sound when played back. To avoid this, record the data using the highest quantization, then use the Quantize function on Page 5 of the Edit Style mode display to correct the timing of the note data alone. (See page 35 for details on the Quantize function.)

Metronome   [OFF, ON, REC]

This parameter determines when the *i2/i3*'s metronome will sound.

You can turn the metronome off by setting **OFF** for this parameter. If you switch it to **REC**, the metronome will sound during recording but not during playback. It will sound during both recording and playback when you use the **ON** setting.

STYLE PARAMETERS

Page 2 of the Edit Style mode display contains two groups of parameters that you can use to set the wrap-around point and enable or disable the note retrigger function for the bass and accompaniment tracks.

```
STYLE U1 2:STYLE PARAMETERS
─────────────────────────────────
Wrap-Around Point:
 BASS=08   ACC1=08    ACC2=08    ACC3=08
Note Retrigger:
 BASS=ON   ACC1=OFF   ACC2=OFF   ACC3=OFF
Tension:
           ACC1=ON    ACC2=ON    ACC3=ON
```

	A	B	C	D	E	F	G	H

It is also possible to set the bass and accompaniment wrap-around points at the arrangement level. When you use the style in an arrangement, you can access the wrap-around points on this display page by setting the arrangement's Wrap-Around parameters to STY. (See page 9 for details.)

The parameters on the bottom line of this display page let you add tensions to the accompaniment tracks.

Wrap-Around Point   [1…12]

Each of these parameters lets you specify a pitch (relative to the tonic set for the style's chord variations using the Key parameter described on page 23) at which the corresponding track will drop an octave. This prevents the backing tracks from rising to unnaturally high pitches when you play chords pitched high above the tonic.

You can set a pitch from one to twelve semitones above the tonic as the wrap-around point for the bass and each of the accompaniment tracks.

☞ **Set different wrap-around points for each track!**

It is a good idea to set the wrap-around points to a different value for each track, to increase contrary motion. If you set all of the Wrap-Around Point parameters to the same value, then all of the backing tracks will drop an octave at the same time, creating a potentially comic effect.

Note Retrigger   [OFF, ON]

If the bass and accompaniment tracks held their programmed notes through every chord change, the result would be the sort of dissonance you get when you play clashing chords on a keyboard while holding down its damper pedal.

There are two ways for these tracks to avoid this problem: they can either stop altogether—producing a sudden silence—or re-articulate their notes at pitches that match the new chords.

The Note Retrigger parameters allow you to choose between these two alternatives for each track. When a track's Note Retrigger parameter is set to **OFF**, it will end any notes it is sustaining whenever you play a chord, then remain silent until the track data tells it to play a new note. If you set this parameter to **ON**, the track will end any notes and play a new note that matches the chord you play.

☞ **The pros and cons of note retriggering**

The note retriggering function is useful in that it makes your bass and accompaniment tracks more responsive to chord changes. The drawback is that it also makes heavy demands on the sequence processing capacity of your *i2/i3*.

If you turn note retriggering on for all four of these tracks, and play frequent chord changes in a style that uses up a lot of the polyphonic capacity of the

i2/i3, you may begin to notice lags in the processing of chord changes or the selection of style elements and chord variations.

To avoid this, you may want to disable note retriggering for tracks that consist mainly of short notes, or notes played in quick succession. Give priority to the bass track and accompaniment parts with many sustained notes.

But be sure to try each track both ways before you make any final decisions: depending on the timing with which you change chords, some tracks may benefit from the sudden gaps that can occur when you turn note triggering off. Here, as elsewhere, let musical taste be your guide.

Tension   [OFF, ON]

These parameters enable the *i2/i3* to add to the accompaniment the tensions it detects in the chords you play.

You can enable tensions separately for each of the three accompaniment tracks. The tensions recognized by the *i2/i3* are illustrated in the Recognized Chord tables in Appendix C (see page 256 of this manual).

☞   **Avoid needless tensions!**

Judiciously applied, tensions can add a lot to some accompaniment parts. Like the note retriggering function described above, however, their addition can also increase the burden you place on your *i2/i3*. For this reason, you may want to consider disabling tensions for any tracks that won't benefit musically from them.

CHORD VARIATION TABLES

The third page of the Edit Style mode display gives you access to ten parameter tables that you can use to assign chord variations to the chords recognized by the *i2/i3*. Each of these *chord variation tables* lets you make chord variation assignments for a different *i2/i3* style element.

Style element ————▶

```
STYLE U1 3:CHORD VARIATION TABLES
═══════════════════════════════════
VARIATION 1
  Major:1    sus2:1      mM7:1      dim:1 ⎫
     6:1   M7sus4:1     m7♭5:1    dimM7:1 ⎪
    M7:1        m:1        7:1      aug9:1 ⎬
  M7♭5:1       m6:1      7♭5:1     au97:1 ⎪
  sus4:1       m7:1    7sus4:1    au9M7:1 ⎭
```
Chord variation assignments

A	B	C	D	E	F	G	H

The *i2/i3* can recognize twenty different chord types. Below we give the musical notation for each of these chords, based on a root of C, as a sample. These chords are also illustrated in the Recognized Chord tables of Appendix C (see page 256 of this manual).

Style Element   [VARIATION 1…FILL 2]

This setting lets you select a chord variation table to edit.

Each table bears the name of one of the ten style elements. You can choose from four variations (**VARIATION 1** through **VARIATION 4**), two intros (**INTRO 1** and **INTRO 2**), two endings (**ENDING 1** and **ENDING 2**), and two fills (**FILL 1** and **FILL 2**).

Chord variation assignments

Each field in the table lets you assign the chord variation to be selected by the chord named to the left of the field. For each chord, you can choose any of six chord variations (**CV1** through **CV6**) when editing the table for one of the four variations, or one of two chord variations (**CV1** and **CV2**) when editing that for an intro, ending, or fill.

Major (Major) · Major 7th (M7) · Sus4 (sus4) · Major 7th Sus4 (M7sus4) · Minor 6th (m6) · Major 6th (6) · Major 7th♭5 (M7♭5) · Sus2 (sus2) · Minor (m) · Minor 7th (m7)

Minor Major 7th (mM7) · Dominant 7th (7) · Dominant 7th Sus4 (7sus4) · Diminished Major 7th (dimM7) · Augmented 7th (aug7) · Minor 7th♭5 (m7♭5) · Dominant 7th♭5 (7♭5) · Diminished (dim) · Augmented (aug) · Augmented Major 7th (augM7)

EDIT

The fourth page of the Edit Style mode display lets you record data in steps rather than in real time, and edit individual events within the style data you have recorded. This page also contains utilities that you can use to erase or copy entire styles or individual tracks and a Rename Style function that lets you name the styles you create.

```
STYLE U1 4:EDIT
▶Step Recording      Erase Track
 Event Edit          Copy Track
 Erase Style         Rename Style
 Copy Style
 VAR1  CV1    DRUM        (REC+S/S to Start)
─────────────────────────────────────────────
  A    B    C    D    E    F    G    H
```

Many of the functions on this page allow you to erase or change large sections of style data. Since you can undo these changes using the COMPARE key, the *i2/i3* will normally not ask for confirmation before carrying them out. (It will ask for confirmation if there is not enough memory to save the old data, however.)

Step Recording   *function*

The Step Recording function lets you enter note data one step at a time, specifying the length and velocity of each note. If you use this method to record any measures that already contain data, the old data will be replaced by the data you record.

To use this function, first select the style element, chord variation, and track you want to record above cursor keys A, B, and C. Then press REC/WRITE, followed by START/STOP. The *i2/i3* will switch to the display shown below.

```
STYLE U1 4:STEP REC    ▶Beat
 Track    = DRUM
 Measure  =
 Location = 1:00
   100% Free           ─M001─Beat: 4/4 ─
  4/4     ♩-    V064 085% RST            ◀
─────────────────────────────────────────────
  A    B    C    D    E    F    G    H
```

You can use this display to record data in step time. When you are done recording, press the START/STOP key again to exit the Step Recording function.

Detailed instructions for the use of the Step Recording function may be found on page 92 of the Player's Guide.

Event Edit   *function*

This function lets you modify the characteristics of individual musical events, such as notes or MIDI control changes. You can also use it to insert or delete events.

To use this function, select the style element, chord variation, and track you want to edit above cursor keys A, B, and C, respectively. Then press the REC/WRITE key. The *i2/i3* will switch to an Event Filter display, which lets you select the types of events you will edit.

```
STYLE U1 4:EDIT        ▶Note Data
 Step Recording        Erase Track
▶Ev
 Er           Event Filter
 Co   NOTE CTRL AFTT BEND PROG PAFT
      ENA  ENA  ENA  ENA  ENA  ENA
```

| | A | B | C | D | E | F | G | H |

When you are satisfied with your filter settings, press START/STOP to begin editing. The *i2/i3* will switch to the display shown below. Use this display to edit the events you have selected.

```
STYLE U1 4:EVENT EDIT ▶Measure
M001 #000 ═══ BAR Beat: 4/4
M001 #001 1:00 C2   V118 0:47
M001 #002 1:00 C#3  V110 4:00
M001 #003 1:48 F#2  V080 0:47
M001 #004 1:95 G#2  V110 0:47
M001 #005 2:00 D2   V124 0:95
```

| | A | B | C | D | E | F | G | H |
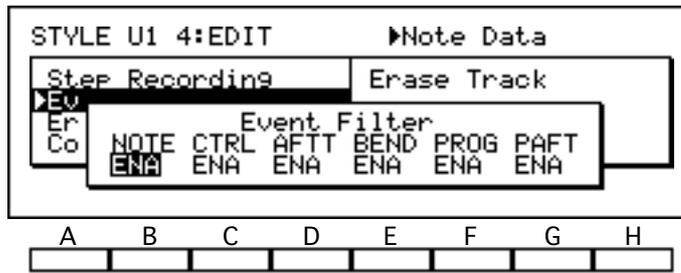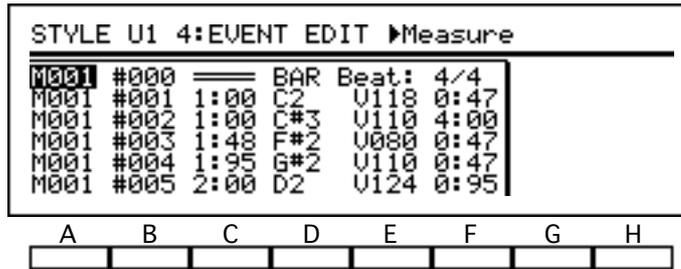
When you are done editing, press the START/STOP key again to exit the Event Edit function.

Detailed instructions for the use of the Event Edit function may be found on page 83 of the Player's Guide.

## *Erase Style*   *function*

This operation erases all the data from one or all elements of the currently selected style. It does not erase the data from any patterns assigned to this style, however.

```
STYLE U1 4:EDIT
  Step Recording      Erase Track
  Event Edit          Copy Track
▶Erase Style          Rename Style
  Copy Style

 VAR1                        (ERASE)
```

| | A | B | C | D | E | F | G | H |
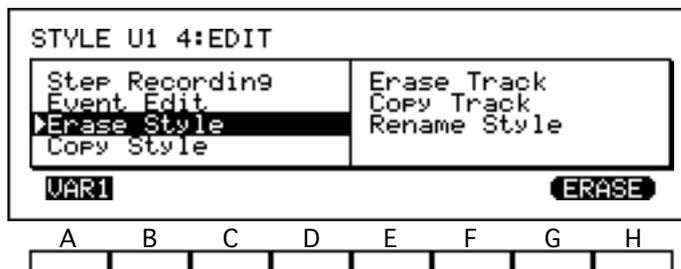
To use this function, first select the style element you want to erase above cursor key A. (Choose **ALL** to erase the data from all elements.) Then select [ERASE]. The *i2/i3* will erase the selected elements without asking for confirmation.

Copy Style   *function*

This operation copies data from one or all elements of a style into the currently selected style. It does not copy any pattern data.

```
STYLE U1 4:EDIT        ▶U1   UserStyle1
┌────────────────────────────────────────────┐
│ Step Recording      Erase Track             │
│ Event Edit          Copy Track              │
│ Erase Style         Rename Style            │
│▶Copy Style                                  │
│ ▊U1▊ VAR1 ➡ VAR1              (COPY)        │
└────────────────────────────────────────────┘
   A    B    C    D    E    F    G    H
  ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐
```
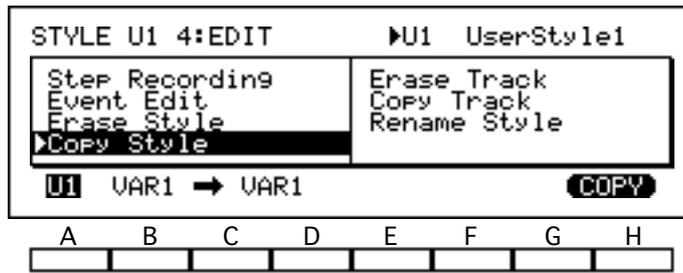
To use this function, first select the source style from which you want to copy
data above cursor key A. Select the element of that style whose data you want
to copy above cursor key B, and the element of the current style that is to re-
ceive this data above key C. (Select **ALL** above keys B and C to copy all data
from one style to the other.) Please note that the destination element must be
of the same type—variation, intro, ending, or fill—as the source.

When you are sure of your settings, select [COPY]. The *i2/i3* will copy the se-
lected element data without asking for confirmation.

Erase Track   function

This function erases all style data from one or all tracks of a selected chord
variation.

```
STYLE U1 4:EDIT
┌────────────────────────────────────────────┐
│ Step Recording     ▶Erase Track             │
│ Event Edit          Copy Track              │
│ Erase Style         Rename Style            │
│ Copy Style                                  │
│ ▊VAR1▊ CV1   DRUM            (ERASE)        │
└────────────────────────────────────────────┘
   A    B    C    D    E    F    G    H
  ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐
```
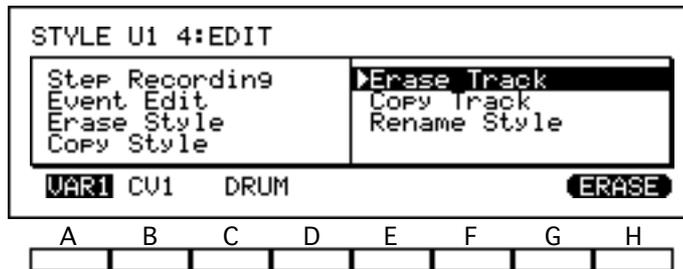
To use this function, select the element, chord variation, and track you want to
erase above cursor keys A, B, and C. (Select **ALL** above cursor key C to erase
all data from a chord variation.) Then select [ERASE]. The *i2/i3* will erase the
track without asking for confirmation.

Copy Track   function

This operation copies the data for one or all tracks from one chord variation to
another within the currently selected style.

```
STYLE U1 4:EDIT        ▶Source
┌────────────────────────────────────────────┐
│ Step Recording      Erase Track             │
│ Event Edit         ▶Copy Track              │
│ Erase Style         Rename Style            │
│ Copy Style                                  │
│ ▊VAR1▊ CV1  DRUM ➡ VAR1 CV1  DRUM (COPY)   │
└────────────────────────────────────────────┘
   A    B    C    D    E    F    G    H
  ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐
```
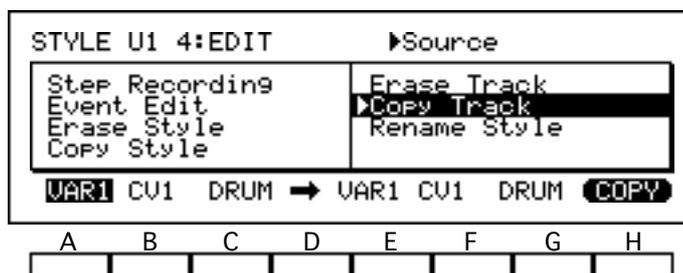
To use this function, first select the element, chord variation, and track whose
data you want to copy above cursor keys A, B, and C. Then select the receiving
element, chord variation, and track above keys E, F, and G. (Select **ALL** above
keys C and G to copy all data from one chord variation to another.) Please note
that the source and destination elements do *not* have to be of the same type, as
they do for the Copy Style function.

When you are sure of your settings, select [COPY]. The *i2/i3* will copy the se-
lected track data without asking for confirmation.

Rename Style   *function*

You can use this function to change the name of the style you're editing. The style name can consist of up to ten characters.

```
STYLE U1 4:EDIT

 Step Recording      Erase Track
 Event Edit          Copy Track
 Erase Style        ▶Rename Style
 Copy Style

 U1   UserStyle1    (INS) (DEL) (◀) (▶)
```

	A	B	C	D	E	F	G	H
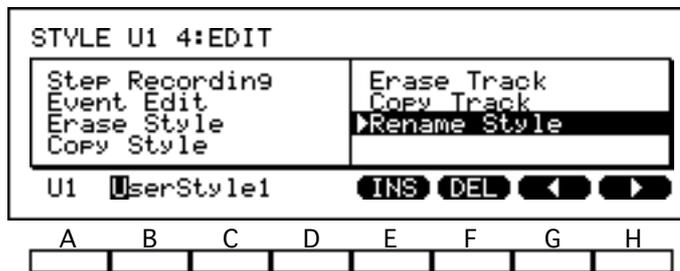
When you select the Rename Style function, the current style name will appear on the bottom line of the display, above cursor keys B and C. Change this to the desired style name as described on page 33 of the Player's Guide.

There is no need to execute the Rename Style function, as it is actually a special parameter. The *i2/i3* will remember the new name together with all of the style's track data and other parameter settings.

EDIT TRACK

The functions on Page 5 of the Edit Style mode display let you modify the data for specific tracks within a selected chord variation. You can correct the timing of recorded data, shift notes, transpose music to a different key, or adjust note velocities, all in one quick operation.

```
STYLE U1 5:EDIT TRACK
▶Quantize          Put/Copy Pattern
 Shift Note        Erase Measure
 Key Transpose     Get From Song
 Modify Velocity

 VAR1 CV1  DRUM ALL   Q:HI 0+00 100% QTZ
```
```
   A    B    C    D    E    F    G    H
  ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐ ┌──┐
  └──┘ └──┘ └──┘ └──┘ └──┘ └──┘ └──┘ └──┘
```

This page also contains a Put/Copy Pattern function, which lets you assign patterns to tracks; an Erase Measure function, which removes specified types of data from a range of measures within a track; and a Get From Song function, which you can use to copy data you record in Song mode to your style.

Many of the functions on this page allow you to erase or change large sections of style data. Since you can undo these changes using the COMPARE key, the *i2/i3* will normally not ask for confirmation before carrying them out. (It will ask for confirmation if there is not enough memory to save the old data, however.)

Quantize   *function*

You can use the Quantize function to adjust the timing of data you have already recorded.

This function is more flexible than the Quantize parameter on Page 1 of Edit Style mode (see page 26) in that it lets you select a data type to quantize, leaving other data types unaffected. You can also use the COMPARE key to undo the quantization if you are dissatisfied with the results. In addition, the Offset and Intensity parameters give you finer control over how tracks are quantized.

To use this function, first set the element, chord variation, and track to be quantized above cursor keys A, B, and C. Then specify the type of data to be quantized above key D. The table below lists your options.

Setting	Data quantized
ALL	All data
NOTE	All note data
CTRL	All control change messages
AFTT	All channel and polyphonic aftertouch messages
BEND	All pitch bend messages
PROG	All program change messages

Finally, set the Quantize, Offset, and Intensity parameters above keys E, F, and G. The Quantize parameter is the same as that used in realtime recording. (See page 26 for details.)

The Offset parameter shifts the quantizing grid away from the note value specified by the resolution. You can set this parameter from **–96** to **+96**, to move the grid either backward or forward by so many pulses per quarter note. Hence, a setting of +96 will shift the grid forward one quarter note.
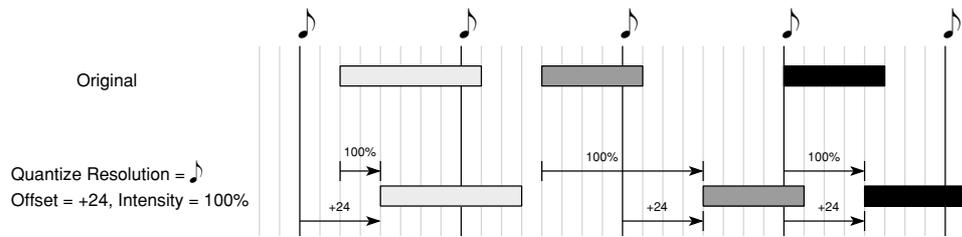
Original

Quantize Resolution = ♪
Offset = +24, Intensity = 100%

The Intensity parameter sets the effectiveness of the quantize function as a percentage. It is normally set to **100**, to move events all the way to the quantizing grid. You could set this parameter to **50**, for example, to move each event only halfway from its recorded position to the grid. Setting it to **0** would effectively disable the Quantize function.
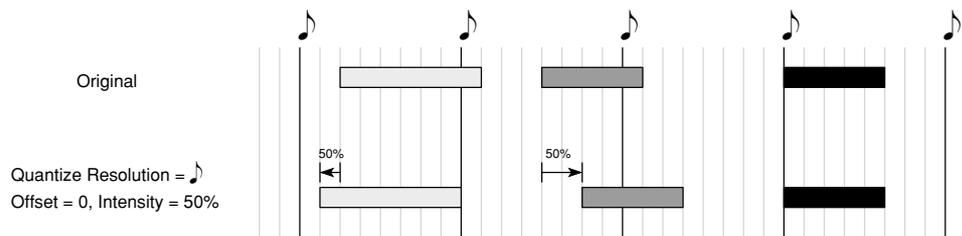

Original

Quantize Resolution = ♪
Offset = 0, Intensity = 50%

When you are sure of your choices, select [QTZ]. The *i2/i3* will quantize the data you have specified without asking for confirmation.

Shift Note   *function*

This operation shifts notes up or down. You can use it to transpose either a specified range of notes, or all notes.
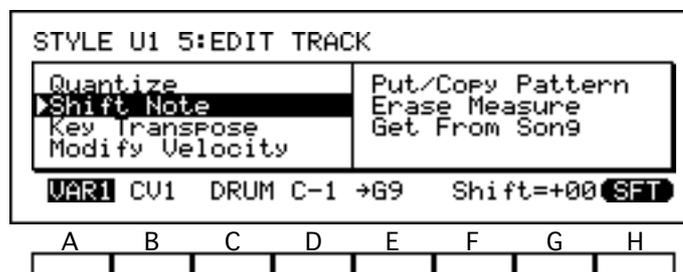
To use this function, first set the element, chord variation, and track whose notes you want to shift above cursor keys A, B, and C.

Next, use the Note Range Bottom and Top parameters above keys D and E to specify the range of notes to be shifted. Normally these parameters are set to **C–1** and **G9**, respectively, to shift all notes. You can change both parameters within this range to shift only a limited set of notes. (You can set these parameters by playing the desired notes on the *i2/i3* keyboard while holding down the cursor key for each.)

Finally, set the number of semitones by which the notes will be shifted above key G. You can shift notes up or down a maximum of two octaves.

When you have made your choices, select [SFT]. The *i2/i3* will shift the notes without asking for confirmation.

Key Transpose   *function*

This operation transposes the key of the music data in a track. It does not affect the tonic key setting for that track.

```
STYLE U1 5:EDIT TRACK

 Quantize                    Put/Copy Pattern
 Shift Note                  Erase Measure
▶Key Transpose               Get From Song
 Modify Velocity

 VAR1  CV1    DRUM      KEY:C ➧ C           TRN
```

	A	B	C	D	E	F	G	H
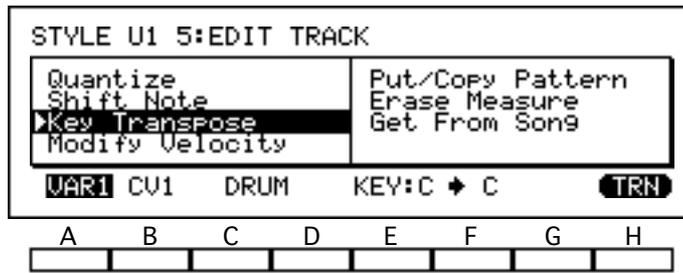
To use this function, first set the element, chord variation, and track whose key you want to transpose above cursor keys A, B, and C.

Next, set the key to which you want to transpose the selected track to above key F. (The *i2/i3* will get the current key setting for that track from the Key parameter on Page 1 of Edit Style mode and display it above key E.)

You can select any major or minor key for the track's new key. (You can set the note portion of the key name for this parameter by playing the desired note on the *i2/i3* keyboard while holding down cursor key E or F.)

When you have made your choices, select [TRN]. The *i2/i3* will transpose the music without asking for confirmation.

Modify Velocity   *function*

This operation modifies the velocity of notes in a track by adjusting them to a curve that specifies how note velocity will change over time.

```
STYLE U1 5:EDIT TRACK

 Quantize                    Put/Copy Pattern
 Shift Note                  Erase Measure
 Key Transpose               Get From Song
▶Modify Velocity

 VAR1  CV1    DRUM  V002➧126  100% Cv1     MDF
```

	A	B	C	D	E	F	G	H

To use this function, first set the element, chord variation, and track whose velocities you want to modify above cursor keys A, B, and C.

Next, set a target velocity for the first measure above key D, and one for the last measure above key E. (You can set these parameters by playing notes at the desired velocities on the *i2/i3* keyboard while holding down the cursor key for each.)

Select a curve to connect these two velocities above cursor key G.

Curve 1	Curve 2	Curve 3
Curve 4	Curve 5	Curve 6 — RANDOM

Finally, set the intensity of the velocity modification above key F. This percentage setting determines how closely the current velocities will be modified toward the curve. When the Intensity parameter is set to **100**, the velocities will be fit precisely along the curve. When the Intensity is **0**, the *i2/i3* will not modify the current velocities.

When you have made your choices, select [MDF]. The *i2/i3* will modify the velocities without asking for confirmation.

## *Put/Copy Pattern*   *function*

Once you have recorded a pattern using the functions on Page 6 of the Edit Style mode display (see pages 41 through 44), you can use Put/Copy Pattern to either assign it or copy its data to a track.

When you *put* a pattern in a track, the track will contain no track data per se, only an instruction to play the assigned pattern. This instruction is known as a *pattern assignment*. You may want to record oft-repeated phrases as patterns and then assign them to tracks to cut down on the amount of memory the style occupies.
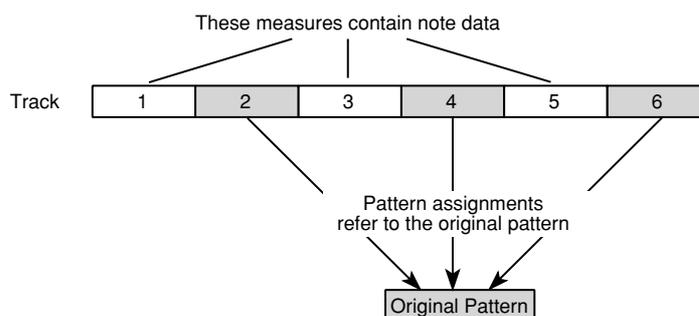
These measures contain note data

Track | 1 | 2 | 3 | 4 | 5 | 6 |

Pattern assignments refer to the original pattern

Original Pattern

You should *copy* a pattern's data to a track only when you intend to edit the copied data to create a variation on the pattern. An example of this is given on page 78 of the Player's Guide.


```
STYLE U1 5:EDIT TRACK ▶Pattern

 Quantize        ▶Put/Copy Pattern
 Shift Note       Erase Measure
 Key Transpose    Get From Song
 Modify Velocity

 P00 ➔ VAR1 CV1   DRUM M07    PUT  COPY
```

  A   B   C   D   E   F   G   H
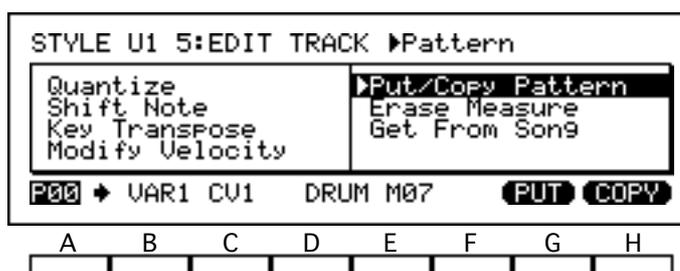
To use this function, first select the pattern that you want to put or copy above cursor key A. Then set the destination element, chord variation, and track above keys B, C, and D. Finally, select the measure where the pattern will begin playing above key E.

When you are sure of your settings, select either [PUT] or [COPY]. The *i2/i3* will assign the pattern—or copy its data—to the selected track without asking for confirmation. The measure setting above cursor key E will then advance by the number of measures in the pattern, so you can put or copy another pattern immediately after the first one.

Erase Measure   *function*

This operation erases some or all data from one or more measures of a selected track.

To use this function, first select an element, chord variation, and track whose data you want to erase above cursor keys A, B, and C. Then set the first and last measures in the range of measures whose data you want to erase above keys D and E. (Set the same number for both these parameters to erase data from only one measure.)

```
STYLE U1 5:EDIT TRACK

 Quantize           Put/Copy Pattern
 Shift Note        ▶Erase Measure
 Key Transpose      Get From Song
 Modify Velocity

 VAR1 CV1   DRUM   M01→01   ALL    (ERASE)
```

A	B	C	D	E	F	G	H
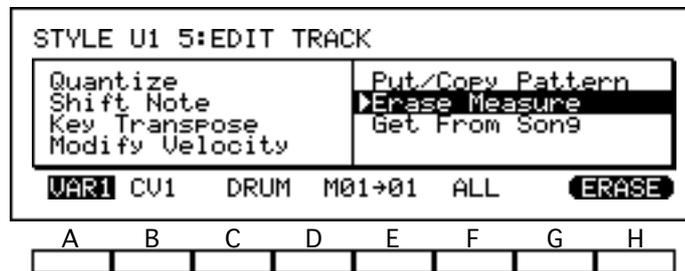
Finally, set the type of data to erase above key F. The table below lists your options.

Setting	Data erased
ALL	All data
NOTE	All note data
CTRL	All control change messages
AFTT	All channel and polyphonic aftertouch messages
BEND	All pitch bend messages
PROG	All program change messages

When you are sure of your choices, select [ERASE]. The *i2/i3* will erase the specified data from the measures you selected without asking for confirmation.

☞ **Erasing control changes**

Some control changes—such as damper changes or pitch bends—may "stick" if you erase the messages that turn them off. If this happens, you should either erase the messages that are sticking, or use the Event Edit function (see page 42) to correct the data.

Get From Song   *function*

This operation copies data from the track of a song you have recorded in song mode, into a style track.

Before you use this function to copy data to a style track, you should be sure to set the track's length on Page 1 of the Edit Style mode display (see page 22).

The style track will copy this many measures from the song.

If you use this method to copy to a track that already contains data, the old data will be replaced by the data you copy from the song track.
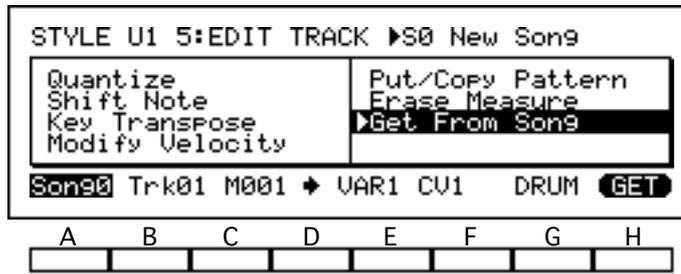
```
STYLE U1 5:EDIT TRACK ▶S0 New Song
┌──────────────────────────────────────┐
│ Quantize          Put/Copy Pattern    │
│ Shift Note        Erase Measure       │
│ Key Transpose    ▶Get From Song       │
│ Modify Velocity                       │
├──────────────────────────────────────┤
│ Song0 Trk01 M001 ➜ VAR1 CV1   DRUM GET│
└──────────────────────────────────────┘
   A    B    C    D    E    F    G    H
  ┌──┬──┬──┬──┬──┬──┬──┬──┐
  └──┴──┴──┴──┴──┴──┴──┴──┘
```

To use this function, first select the numbers of the song and track whose data you want to copy above cursor keys A and B. Then set the first measure to be copied above key C. Finally, select the style element, chord variation, and track to receive the song data above cursor keys E, F and G.

When you are sure of your choices, select [GET]. The *i2/i3* will copy the song track data to the style track without asking for confirmation.

PATTERN

The *i2/i3* helps you save style memory by letting you record oft-repeated phrases just once, as patterns, and then placing them into tracks. The functions on Page 6 of the Edit Style mode display let you record and edit patterns. You can put the patterns you create here in style tracks using the Put/Copy Pattern function described on page 38.

```
STYLE U1 6:PATTERN
▶Realtime Recording   Erase Pattern
 Step Recording       Get From Track
 Event Edit           Bounce Pattern
 Pattern Parameters   Copy Pattern
 Pattern00 ♩=128 M-- Q:HI M:OFF
```

```
 A    B    C    D    E    F    G    H
```
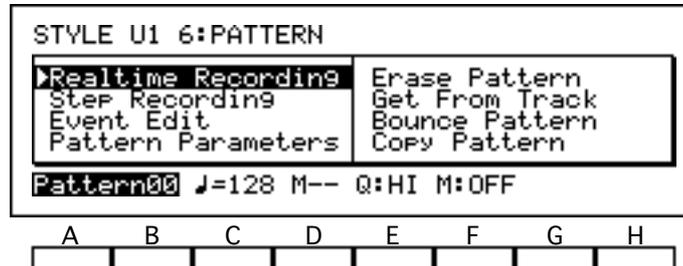
The *i2/i3* can hold up to 100 patterns for each style. Each pattern can be as many as 16 measures long. The patterns occupy the same 15,000 steps' worth of battery-backed sequence memory as the style data you record, and so are limited by available memory in the same way. This is not much of an inconvenience, however, as judicious use of patterns can drastically reduce the amount of memory your styles require.

Realtime Recording

The Realtime Recording function on this display page lets you record patterns in real time, using the pattern recording method.

Before you create a new pattern, you should be sure to set its length and time signature using the Pattern Parameters function described on page 43.

If you use this method to record to a pattern that already contains data, the new data will be added to the old. If you want to replace the old data, you should use the Erase Pattern function described on page 43 to remove its contents before you begin.

To use this function, first select the pattern you want to record above cursor keys A and B. Then set the tempo, the input quantizing resolution, and the metronome mode above keys C, E, and F. The details of these parameters are the same as described for the realtime recording function on Page 1 of Edit Style mode (see pages 25 through 27).

When you are ready to start recording, press REC/WRITE, followed by START/STOP. As the *i2/i3* records, it will display the number of the current measure above cursor key D. It will play the pattern data you record using the program assigned to the track currently selected on Page 1 of the Edit Style mode display. (See the description of the Track parameter on page 25).

When you are done recording, you can exit the Realtime Recording function by pressing the START/STOP key again.

Detailed instructions for the use of the pattern recording method may be found on page 76 of the Player's Guide.

☞ **Control data in patterns**

You can record control changes such as pitch bend or damper pedal data in a pattern. However, be careful to return the controllers to their normal position before the end of the pattern, to prevent them from "sticking" when the pattern ends.

Also, remember that overdubbing the same control change repeatedly over several passes can result in unnatural effects.

Step Recording

The Step Recording function on this display page lets you enter pattern data one step at a time, specifying the length and velocity of each note. In a sense, it combines the track data Step Recording function described on page 31 with the overdub recording method described on page 74 of the Player's Guide.

Before you create a new pattern, you should set its length and time signature using the Pattern Parameters function described on page 43. If you use this method to record a pattern that already contains data, the new data will be added to the old. (You will not be able to hear the old data, however.)

To use this function, first select the pattern you want to record above cursor keys A and B. Then press REC/WRITE, followed by START/STOP. The *i2/i3* will switch to the display shown below.

```
STYLE U1 6:STEP REC    ▶Beat

 Pattern  = 00
 Measure  = 01
 Location = 1:00
  100% Free              -M001—Beat: 4/4 —

  4/4      ♩-      V064 085% (RST)        ◀

   A     B     C     D     E     F     G     H
```

You can use this display to record in step time. The *i2/i3* will play the notes you hit using the program assigned to the track currently selected on Page 1 of the Edit Style mode display. (See the description of the Track parameter on page 25.)

When you reach the end of the pattern, the *i2/i3* will return to the first measure and continue recording, much as described for the pattern recording method. The data of each pass will be overdubbed on top of the previous data.

When you are done recording, you can exit the Step Recording function by pressing the START/STOP key again.

Detailed instructions for the use of the Step Recording function may be found on page 92 of the Player's Guide.

## Event Edit   *function*

This function lets you modify the characteristics of a pattern's musical events, such as notes or MIDI control changes. You can also use it to insert or delete events.

To use this function, select the pattern you want to edit above cursor keys A and B. Then press the REC/WRITE key. The *i2/i3* will switch to an Event Filter display, which lets you select the types of events you will edit.

```
STYLE U1 6:PATTERN      ▶Note Data

 Realtime Recording │ Erase Pattern
 St
▶EV         Event Filter
 Pa  NOTE CTRL AFTT BEND PROG PAFT
     ENA  ENA  ENA  ENA  ENA  ENA

   A     B     C     D     E     F     G     H
```

When you are satisfied with your filter settings, press START/STOP to begin editing. The *i2/i3* will switch to the display shown below. Use this display to edit the events you have selected.

```
STYLE U1 6:EVENT EDIT ▶Measure
M001  #000  ════  BAR  Beat: 4/4
M001  #001  1:00  B3      V124  0:95
M001  #002  1:00  G3      V124  1:02
M001  #003  1:00  C3      V122  0:95
M001  #004  2:47  B3      V106  0:06
M001  #005  2:47  C3      V106  0:09
```

	A	B	C	D	E	F	G	H

When you are done editing, press the START/STOP key again to exit the Event Edit function.

Detailed instructions for the use of the Event Edit function may be found on page 83 of the Player's Guide.

Pattern Parameters   *function*

This function is actually a pair of parameters that determine the time signature and length of a pattern.

To use this function, first select the pattern whose parameters you want to edit above cursor keys A and B. You can then set that pattern's time signature above keys C and D, and its length in measures above keys E and F.

The details of the time signature setting are the same as described for the Beat parameter on Page 1 of Edit Style mode (see page 25).

Erase Pattern   *function*

This function erases all data from a selected pattern. It does not change the pattern settings made with the Pattern Parameters function, described above.

```
STYLE U1 6:PATTERN

 Realtime Recording  ▶Erase Pattern
 Step Recording       Get From Track
 Event Edit           Bounce Pattern
 Pattern Parameters   Copy Pattern

 Pattern00                      (ERASE)
```

	A	B	C	D	E	F	G	H
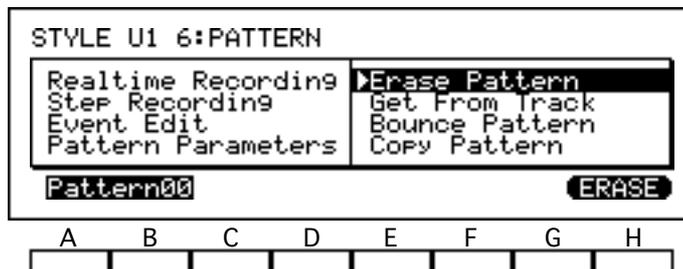
To use this function, select the number of the pattern you want to erase above cursor keys A and B. Then select [ERASE]. The *i2/i3* will erase the pattern without asking for confirmation.

## Get From Track   *function*

This operation copies data from a style track into a pattern, so you can assign this data to other measures in a song.

This function also enables you to edit patterns using functions such as Quantize, Key Transpose, and Modify Velocity, that are not normally available for them. Just copy a pattern's data to an empty style track using the Put/Copy Pattern function described on page 38, then edit the data, and copy the data back to a pattern using Get From Track.

Before you use this function to copy data to a pattern, you should be sure to set the pattern's length using the Pattern Parameters function described above. The pattern will copy this many measures from the style track. (It will adopt the time signature of the track it copies, however.)

If you use this method to copy to a pattern that already contains data, the old data will be replaced by the data you copy from the track.

```
STYLE U1 6:PATTERN      ▶U1   UserStyle1
┌─────────────────────────┬─────────────────────────┐
│ Realtime Recording      │ Erase Pattern           │
│ Step Recording          │▶Get From Track          │
│ Event Edit              │ Bounce Pattern          │
│ Pattern Parameters      │ Copy Pattern            │
└─────────────────────────┴─────────────────────────┘
 U1 VAR1 CV1 DRUM M01 ➡ Pattern00  GET
```

A	B	C	D	E	F	G	H
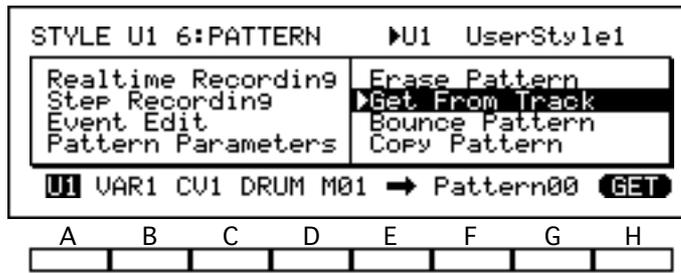
To use this function, first select the number of the style whose data you want to copy above cursor key A. Set the source element, chord variation, and track above keys B, C, and D. Then set the first measure to be copied above key E. Finally, select the pattern to receive the track data above cursor key F.

When you are sure of your choices, select [GET]. The *i2/i3* will copy the track data to a pattern without asking for confirmation.

Bounce Pattern   *function*

This function merges the data of one pattern with that of another. The source and destination patterns may belong to different styles.

The resulting combined pattern will retain the time signature and length set for the destination pattern by the Pattern Parameters function (see page 43). All data will be erased from the source pattern.

If both patterns contain pitch bends, damper changes, or other control change data, these data may create unexpected results when combined. You may want to use the Event Edit function, described above, to delete control change data from one pattern or the other before combining them.

```
STYLE U1 6:PATTERN      ▶U1   UserStyle1
┌─────────────────────────┬─────────────────────────┐
│ Realtime Recording      │ Erase Pattern           │
│ Step Recording          │ Get From Track          │
│ Event Edit              │▶Bounce Pattern          │
│ Pattern Parameters      │ Copy Pattern            │
└─────────────────────────┴─────────────────────────┘
 U1  Pattern00 ➡ U1  Pattern00  BOUNCE
```

A	B	C	D	E	F	G	H
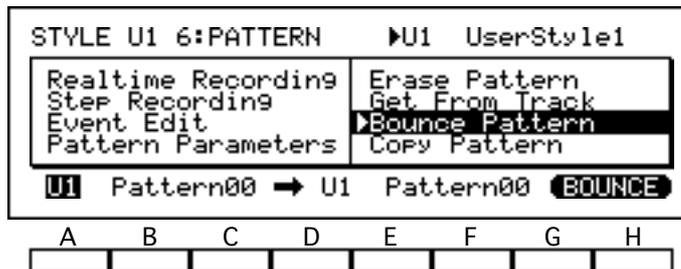
To use this function, select the source style above cursor key A, and the source pattern above keys B and C. Then set the destination style above key D, and the destination pattern above keys E and F.

When you have made your choices, select [BOUNCE]. The *i2/i3* will combine the two patterns without asking for confirmation.

Copy Pattern   *function*

This operation copies data from one pattern to another. The source and destination patterns may belong to different styles.

If the pattern you select as the destination already contains data, the *i2/i3* will replace this data with that from the source pattern. The copied pattern will have the same time signature and length as those you set for the source pattern using the Pattern Parameters function described above (see page 43).

```
STYLE U1 6:PATTERN    ▶U1  UserStyle1
┌─────────────────────┬──────────────────┐
│ Realtime Recording  │ Erase Pattern    │
│ Step Recording      │ Get From Track   │
│ Event Edit          │ Bounce Pattern   │
│ Pattern Parameters  │▶Copy Pattern     │
├─────────────────────┴──────────────────┤
│ U1  Pattern00 ➡ U1  Pattern00  (COPY) │
└─────────────────────────────────────────┘
```

```
    A    B    C    D    E    F    G    H
  ┌───┬───┬───┬───┬───┬───┬───┬───┐
  └───┴───┴───┴───┴───┴───┴───┴───┘
```
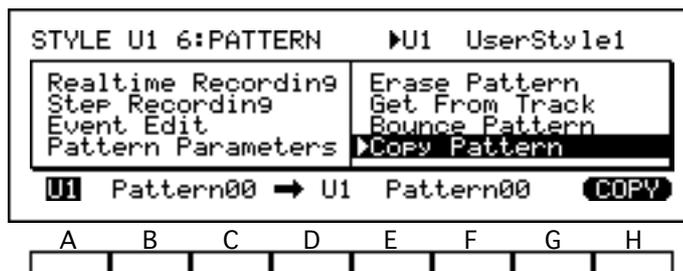
To use this function, select the style from which you want to copy a pattern above cursor key A, and the pattern to copy above keys B and C. Next, select the destination style above cursor key D, and the destination pattern above keys E and F.

When you have made your choices, select [COPY]. The *i2/i3* will copy the pattern without asking for confirmation.

Chapter 3
Backing Sequence Mode

The *i2/i3* Backing Sequence mode lets you record and perform songs that play arrangements instead of conventional sequence data. At the heart of each *backing sequence* are three tracks known as *arrangement tracks*. Two of these tracks record performance information—which chords you play, which keys you press on the front panel—then use this information to control playback of style tracks using a selected arrangement.

A third arrangement track lets you add a melody line to the accompaniment using the keyboard timbres—though you naturally have the option of leaving this track empty and using the keyboard timbres for live performance. Either way you do it, you can also record additional parts in up to eight tracks known as *extra tracks*.

The Backing Sequence mode divides its parameters and functions among seven display pages, which are summarized on the following page of this manual. You can switch through these pages using the PAGE+ and PAGE– keys, or by pressing the DATA ENTRY key bearing the number of the desired page while holding down the BACKING SEQ key.

The general procedures for editing parameters and using utility functions are outlined in Chapter 3 of the Player's Guide. Procedures for recording, playing back, and editing backing sequences are covered in Chapter 10 of that manual.

The *i2/i3* sequence memory can hold as many as ten backing sequences, up to a total of 40,000 steps of data. Backing Sequence mode shares this memory with the songs and patterns you record in Song mode. Each backing sequence track is limited to 16,000 steps.

The contents of the sequence memory will be lost when you turn off your *i2/i3*. After every programming session, you should be sure to save your backing sequences to disk using one of the Save functions described in Chapter 9. (It is also a good idea to save them periodically during the session, to prevent accidental loss in case of a power failure.)

While recording and editing songs, you can press the COMPARE key at any time to undo the last change you made, be it a newly recorded track or a minor adjustment made with an editing function. Pressing this key a second time will restore the change. You can thus use the COMPARE key to double-check the results of any change you make.

The Compare function may be limited in some cases by the amount of available memory. When there is not enough memory for the *i2/i3* to let you compare data after making a major change, it will warn you of this fact beforehand. You may want to save the data to disk before going ahead with the change, so you will have the old data handy in case you're not satisfied with the results of the change.

Functions in Backing Sequence mode

The table below shows the layout of the *i2/i3* Backing Sequence mode. For each display page we list the page title, a brief outline of the page's contents, and the numbers of the pages in this manual where you will find these contents described.

Page	Title	Contents	Description
1	REALTIME	Arrangement/style selection and chord	49–50
		Keyboard timbres and performance monitors	51–52
		Extra track parameters	53
		Backing sequence pointers, beat, and quantize	54–55
		Tempo track, track, and track activity	56–57
		Record mode settings	58
2	EXTRA TRACK PARAMETERS 1	Track status, protect, and pitch control	59–60
3	EXTRA TRACK PARAMETERS 2	MIDI channel and data windows	61–62
4	EDIT TRACK	Step Recording	63
		Event Edit	64
		Erase Track	65
		Bounce Track	65
		Copy Track	65
		Erase B. Sequence	66
5	EDIT MEASURE	Quantize	67
		Shift Note	68
		Key Transpose	68
		Delete Measure	69
		Erase Measure	70
		Copy Measure	70
		Insert Measure	71
6	EFFECT	Effect parameters and placement	Chapter 7
7	UTILITY	Next Backing Sequence	74
		Rename Backing Sequence	74
		Metronome	75
		Copy All Effects	75
		Copy/Swap FX	75

REALTIME

The first page of Backing Sequence mode contains the essential settings for most realtime recording and playback operations. The first two lines display the names of the currently selected backing sequence, arrangement, and style, as well as the current chord.

Backing sequence number and name   *Chord*
Arrangement number and name   *Style number and name*

```
┌─────────────────────────────────────┐
│ BSEQ:0 BSequence0 CHORD:             │
│ ARR:11 Arrange 11 [STY:P11 Open Rock]│
│                                      │
│ ♩=120  KBD1:A11 Piano      SPLIT:C4  │
│                            XPOSE:0   │
│ BSEQ0  M001   4/4  Q:HI  KBD  CTRL CHORD │
│ TEMPO:MAN A.TRACKS KBD1 ▬▬▬ ▬ ▬ ▬    │
└─────────────────────────────────────┘
  A    B    C    D    E    F    G    H
```

Tempo
Keyboard timbres (track parameters)
Backing sequence pointers
Tempo track

Mute buttons

Beat and quantize
Track/keyboard settings

The remaining lines of this display page contain the tempo, keyboard timbre settings, extra track parameters, backing sequence location pointers, and a number of other important settings that you will use when recording backing sequences in real time. These settings are all described in the next sections.

BSEQ

This field shows the number and name of the backing sequence which has been selected for playing or recording. You can change the backing sequence selection using the Backing Sequence setting on the fifth line of the display.

CHORD

This field indicates the chord that the backing sequence is currently recording or playing. The chord will determine how the style being played is processed by the note transposition tables (see page 18 of the Player's Guide).

You can change the chord setting by playing a chord in the chord-scanning range of the keyboard, and cancel the setting by pressing the RESET key. (See page 11 of the Player's Guide for details on the Chord Scanning function.)

You will find a set of figures illustrating the chords recognized by the *i2/i3* in Appendix C of this manual (see page 256).

ARR

This field shows the number and name of the arrangement that the backing sequence is currently recording or playing.

You can change the arrangement using the ARRANGEMENT/STYLE keys while the STYLE key is *not* lit, as described on page 28 of the Player's Guide. When you do so, most of the backing sequence's arrangement-related parameters—such as the keyboard timbre and effect settings—will change to those of the new arrangement.

☞ **To select arrangements with a footswitch…**

You can also change the arrangement selection using a footswitch or one of the pedals on an EC5 External Controller. These methods for controlling the arrangement selection are enabled by Global mode settings.

To use a footswitch, set the Assignable Pedal parameter for the jack you will use to either **ARR/STYLE UP** or **ARR/STYLE DOWN** (see page 215). If you

have an EC5, select one of the same two settings for the appropriate Switch parameter (see page 220). The footswitch will change arrangements when the STYLE key is not lit.

STY

This field shows the number and name of the style that the backing sequence is currently recording or playing.

You can change the style selection using the ARRANGEMENT/STYLE keys while the STYLE key is lit, as described on page 29 of the Player's Guide.

When you change the style, the *i2/i3* will use the new style without changing the backing track settings. This allows you to switch styles as you play without causing abrupt sound changes.

☞ **To select styles with a footswitch…**

You can also change the style selection using a footswitch or one of the pedals on an EC5 External Controller. These methods for controlling the style selection are enabled by Global mode settings.

To use a footswitch, set the Assignable Pedal parameter for the jack you will use to either **ARR/STYLE UP** or **ARR/STYLE DOWN** (see page 215). If you have an EC5, select one of the same two settings for the appropriate Switch parameter (see page 220). The STYLE key must be lit to change styles with a footswitch.

Tempo   [40…240]

This adjusts the backing sequence's playback tempo. You can set the tempo to any value between 40 and 240 beats per minute. Unlike the Tempo setting in Arrangement Play mode, you must first move the cursor to this parameter in order to change its value.

You may find it helpful to slow down the tempo while recording, then speed it up for playback. You can change the tempo as desired while recording. The *i2/i3* will not record tempo changes.

☞ **External clock control**

The letters **EXT** will appear in place of a tempo when the Global mode Clock Source parameter is set to **EXT** (see page 212). This indicates that the tempo of the *i2/i3* is being controlled by MIDI clock messages from an external sequencer. You will not be able to change the tempo setting from the front panel while these letters are displayed.

Keyboard Timbres

When **A.TRACKS** is selected as the Track setting (described on page 56), you can use the two parameters to the right of the tempo setting on the REALTIME page to select programs for the two keyboard timbres. Next to these parameters are performance monitors that let you check the keyboard split point and the setting of the TRANSPOSE keys.

Keyboard timbres → ... *Split point / Transpose setting*

Track parameter
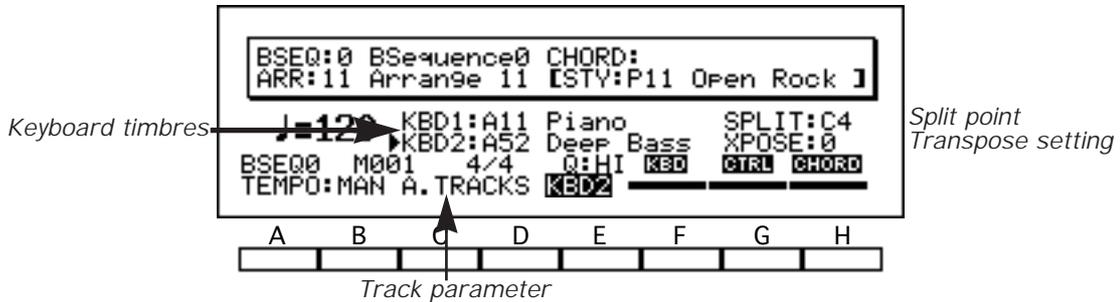
The *i2/i3* will display two keyboard timbres only when you select the *layer* or *split* keyboard assign modes. (See page 117 of the Player's Guide for details on these modes.) To change the program selection or octave of one of these timbres, you must first use the Keyboard Timbre parameter (see page 56) to select the timbre you want to edit using the arrowhead that appears to the left of the timbre names.

Program (KBD1)   [variable]

This parameter shows the number and name of the program selected for keyboard timbre KBD1.

Press the bank keys to switch between program banks. Enter the number of a desired program using the PROGRAM keys.

Bank	Programs	Comments
A	64	General MIDI programs 1–64 (ROM)
B	64	General MIDI programs 65–128 (ROM)
C	64	*i2/i3* preset programs (ROM)
D	64	User programs (RAM)

The *i2/i3* will play the selected program across the entire keyboard when you are using the single or layer keyboard assign modes, or on the upper keyboard alone when you use the split keyboard assign mode.

☞ **Want to play the drums manually?**

You may have noticed that drum programs are not included in the list of programs above. You must use the *manual drums* keyboard assign mode when you want to play the drums from the keyboard.

When you press the M.DRUMS key to select this keyboard assign mode, the *i2/i3* will automatically select the drum program specified by the Manual Drum parameter on Page 4 of the Arrangement Play display.

You can use the lower-row PROGRAM keys to change the KBD1 program selection to any of the eight *i2/i3* drum programs (Dr1 through Dr8). Please note, however, that you will not be able to change the drum mapping while you are playing in this mode.

☞ **Other ways to select programs…**

You can change the program selection for a keyboard timbre using a footswitch, one of the pedals on an EC5 External Controller, or MIDI program change messages. All of these program change methods are enabled by Global

mode settings. (Also, if you are using the layer or split keyboard assign modes, you must select the timbre to be changed as described above.)

To use a footswitch, set the Assignable Pedal parameter for the jack you will use to either PROGRAM UP or PROGRAM DOWN (see page 215). If you have an EC5, select one of the same two settings for the appropriate Switch parameter (see page 220).

If you want the *i2/i3* to recognize MIDI program change messages, be sure the MIDI Filter Program Change parameter is set to **ENA** (see page 214).

Program (KBD2)   [A11…D88]

This parameter shows the number and name of the program selected for keyboard timbre KBD2. The procedure for program selection and the range of available programs is the same as described for KBD1, with the exception that it is not possible to select a drum program for KBD2.

The *i2/i3* will play the selected program across the entire keyboard when you are using the layer keyboard assign mode, or on the lower keyboard alone when you use the split keyboard assign mode.

SPLIT

This indicates the current keyboard split point. All of the keys from the split point on up are known as the *upper keyboard*, and those below it are known as the *lower keyboard*.

The split point divides the upper and lower keyboards for the purpose of chord scanning in the UPPER and LOWER chord scanning modes (see page 11 of the Player's Guide). It is also referred to by the selected arrangement's mute buttons described on page 7, regardless of the chord scanning mode.

Finally, the split point will separate the two keyboard timbres—putting KBD1 in the upper keyboard, and KBD2 in the lower—when you use the *split* keyboard assign mode (see page 117 of the Player's Guide).

You can set the split point by pressing a key on the *i2/i3* keyboard while holding down any KEYBOARD ASSIGN key other than M.DRUMS.

XPOSE

This shows how many steps up or down the *i2/i3* has been transposed. Positive values indicate that the pitch has been raised; negative values indicate that it has been lowered.

You can transpose the *i2/i3* up or down a maximum of eleven semitones using the TRANSPOSE keys. When the Global mode Xpose Pos parameter (see page 211) is set to **POST-KBD**, the TRANSPOSE keys will have no effect on playback data. However, you can use the TRANSPOSE keys while recording to transpose note and chord data before it reaches the keyboard, chord, and extra tracks. The resulting recorded note and chord data will be changed to match the transpose value you specify. **TRANSPOSE** events will not be recorded by the control track.

When the Global mode Xpose Pos parameter is set to **PRE-OSC**, you can use the TRANSPOSE keys during playback to transpose the *i2/i3* tone generator. All tracks will be transposed by the amount you specify. **TRANSPOSE** events will be recorded by the control track when you select the arrangement tracks for recording. When recording an extra track, these events will not be recorded.

The Transpose parameters on Page 2 of the Backing Sequence display can also be used to transpose the extra tracks (see page 59). Be aware, however, that the value you specify for these parameters will be added to that of the TRANSPOSE keys when the Global mode Xpose Pos parameter is set to **PRE-OSC**.

Extra Track Parameters

When one of the **E.TRACK** settings is selected as the Track setting (described on page 56), the basic track parameters for the corresponding extra track will appear to the right of the Tempo setting. You should use these parameters to set up an extra track before you record data to it.

```
BSEQ:0 BSequence0 CHORD:
ARR:11 Arrange 11 [STY:P11 Open Rock ]
```
Program ——→ `ETr1:A11 Piano        Vol=100`   *Volume*
Effect send levels ——→ `C Level=3  D Level=1 Pan=CNT`   *Panpot*
```
BSEQ0  M001    4/4   Q:HI
TEMPO:MAN E.TRACK1   OVWR
```

A B C D E F G H

Track parameter
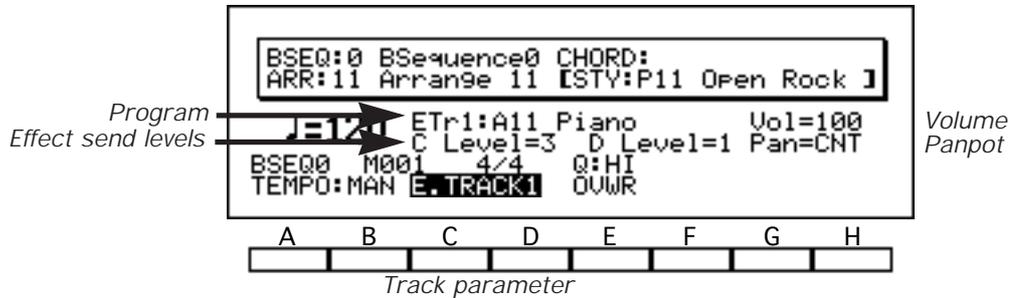
Program   [OFF, A11…Dr8]

This field lets you select the program to be played by the corresponding extra track.

You can change the current program selection using either the VALUE controls or the PROGRAM keys, as described on page 27 and 28 of the Player's Guide.

Extra tracks whose Program parameters are set to **OFF** can be used to control the backing tracks. (See page 135 of the Player's Guide for details.)

Volume (Vol)   [0…127]

This field sets the volume of the corresponding extra track.

Setting a track's volume to **0** will make it inaudible (although it will still use up some of the *i2/i3* polyphonic capacity). The highest setting of **127** will raise the volume to the maximum level set by the selected program's Level parameters (see page 124 and 126).

Panpot (Pan)   [OFF, L15…L1, CNT, R1…R15, PRG]

This field sets the stereo position of each track. It does this by adjusting the levels of the signals input to the effects system via channels A and B. (For an explanation of these channels and their relationship to the effects system, see pages 206 through 208 of this manual.)

The **CNT** setting centers the track. Settings preceded by an **L** move it to the left, whereas those preceded by an **R** move it to the right. The sound moves farther from the center as the numerical value of the setting increases.

The **OFF** setting lets you turn off the track's output to channels A and B altogether. Finally, a **PRG** setting tells the *i2/i3* to use the panning specified by the program's Panpot parameters (see page 125 and 126).

## Effect Send Level C, D   [0…9, P]

These fields determine the levels of the corresponding track signals that are sent to the effects system via channels **C** and **D**.

You can set a level from **0** (no signal) to **9** (maximum) for each channel. If you set these parameters to **P**, the *i2/i3* will use the effect send levels specified by the program's parameters (see page 125 and 127).

The nature of these effect send channels and their relationship to the stereo channels (A and B) are described in detail on pages 206 through 208.

Backing Sequence Pointers, Beat, and Quantize

The parameters on the fifth line of the Backing Sequence display let you change the current backing sequence, the current measure (also known as the *backing sequence location pointer*), and the quantize value used during realtime recording. The beat parameter shows the current time signature.
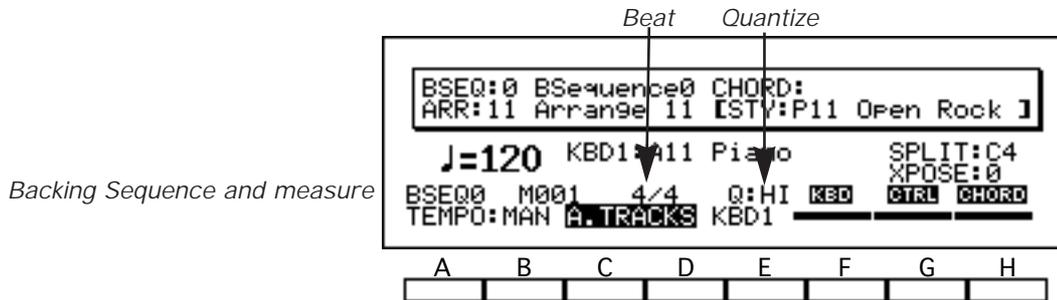
All of these parameters will be displayed regardless of which track you have selected for recording using the Track setting described on page 56.

Backing Sequence   [0…9]

This setting selects the backing sequence to be played or recorded.

The number and name of the current backing sequence also appear in the upper left corner of the display. You can change the backing sequence's name using the Rename Backing Sequence function described on page 74.

Measure   [1…999]

This indicates the location at which recording or playback is set to begin. Each track of a backing sequence can contain a maximum of 999 measures.

You can reset the measure pointer to **1** by pressing the RESET key. The *i2/i3* will reset this pointer automatically whenever it plays a backing sequence all the way to the end.

Beat   [1/4…16/16]

This setting shows the current time signature of the measure currently playing.

Each time you begin recording a new backing sequence, the Beat parameter will use the time signature of the currently selected style.

☞ **Changing the time signature in a track**

If you want to change the time signature in the middle of a track, you must stop recording and adjust the Beat parameter using the Event Edit function.

When you are adding tracks to a backing sequence, the *i2/i3* will record the new data using the same time signature as the existing tracks. If the existing tracks contain time signature changes in the middle of a backing sequence, the new track will follow these changes.

Be aware, however, that any changes in time signature will apply to *all* tracks that contain data. If you change the Beat parameter for one track, the *i2/i3* will truncate or expand each measure of data in the other tracks to match the new time signature, as shown below.

Rest inserted

Not played
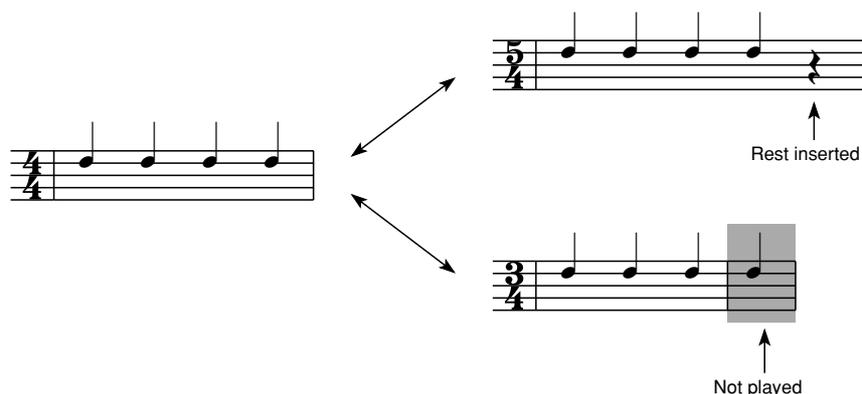
If you should accidentally truncate any measures by changing the beat parameter, don't worry: the *i2/i3* still has the data for the ends of those measures. Just change the time signature back to the previous setting using the Event Edit function described on page 64—and the other tracks should return to normal.

It is not possible to change the Beat setting during recording or playback.

Quantize [HI, ♪₃…♩]

The Quantize parameter sets the degree of accuracy to which the *i2/i3* will adjust the timing of data as you record it.

You should select **HI** for this setting when you want your recorded data to reproduce precisely the timing of the original performance. When you use this setting, the *i2/i3* will record data using a resolution of 96 pulses per quarter note (PPQN).

Other settings will adjust the timing of all recorded data to the nearest interval specified by the setting. Thus, if you set this parameter to ♩, all of the notes you play will be recorded as quarter notes.

If you record pitch bends or other constantly changing control data with a rough quantization such as ♪ or ♩, the control change will produce an unnatural stepped sound when played back. To avoid this, record the data at the highest quantization, then use the Quantize function on Page 5 of the Backing Sequence mode display to correct the timing of the note data alone. (See page 67 for details on the Quantize function.)

Tempo Track, Track, and Track Activity

The first parameter on the bottom line of Page 1 lets you select either manual or automatic tempo control. The next setting selects either the arrangement tracks or one of the eight extra tracks as the track to be recorded next.

```
┌─────────────────────────────────────────────┐
│ BSEQ:0 BSequence0 CHORD:                      │
│ ARR:11 Arrange 11 [STY:P11 Open Rock ]        │
│                                               │
│  ♩=120   KBD1:A11 Piano          SPLIT:C4     │
│                                  XPOSE:0       │
│ BSEQ0  M001    4/4      Q:HI  KBD             │
│ TEMPO:MAN A.TRACKS  KBD1  ____  CTRL  CHORD   │
└─────────────────────────────────────────────┘
        A    B    C    D    E    F    G    H
     ┌────┬────┬────┬────┬────┬────┬────┬────┐
     └────┴────┴────┴────┴────┴────┴────┴────┘
```

Tempo Track — *Track activity monitors*

Track parameter — *Keyboard Timbre*
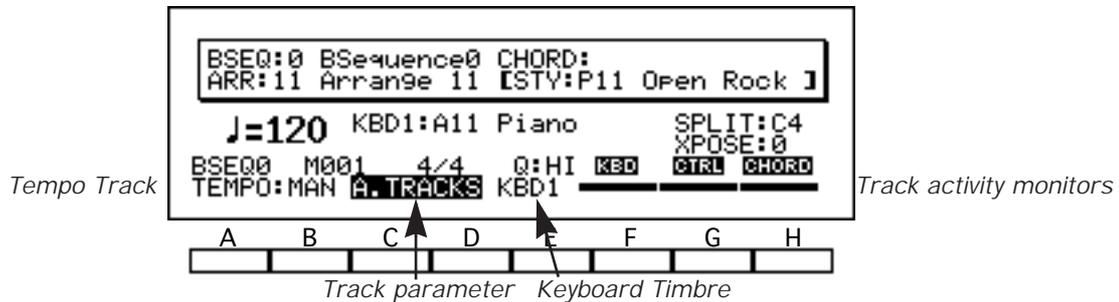
When you select the arrangement tracks for recording, the remaining space on the bottom line will contain a Keyboard Timbre setting that lets you select between the keyboard timbres in the layer and split keyboard assign modes, and three *track activity bars* that let you check (and change) the recording and playback status of the keyboard, control, and chord tracks.

If you select one of the extra tracks for recording, this space will be occupied by one or more record mode settings. These settings are described in the next section.

Tempo Track   [MAN, AUT]

> This setting lets you choose whether or not the tempo track will automatically control the backing sequence's tempo during playback.
>
> If you want the tempo track to control the tempo while you play back the backing sequence (or record new tracks), set this parameter to **AUT**.
>
> If you want to adjust the tempo manually during playback or recording, switch this parameter to **MAN**. The backing sequence will play at the tempo you set, ignoring any changes in the tempo track.
>
> Use the Event Edit function described on page 64 to add tempo changes to the tempo track, or to edit existing tempo changes.

Track   [A.TRACKS, E.TRACK1…E.TRACK8]

> This setting specifies the track to be recorded. You can select **A.TRACKS** to record data to the keyboard, chord, and control tracks, or one of the **E.TRACK** settings to record the corresponding extra track.
>
> If you select the arrangement tracks for recording, the *i2/i3* keyboard will play the programs you have assigned to the keyboard timbres using the Program parameters described on page 6 or page 51. If you select an extra track, the keyboard will play the program you have assigned it using the Program parameter described on page 53.
>
> If you have used the Channel parameter described on page 61 to assign other tracks to the same MIDI channel as the selected track, the keyboard will play their programs as well.

Keyboard Timbre   [KBD1, KBD2]

> This setting lets you select the keyboard timbre whose program setting you wish to change. If you change this setting, the arrowhead to the left of the Program parameters described on page 51 will move up and down to indicate which timbre is currently selected.

Track activity   [—, REC, PLAY, MUTE]

The three bars above keys F, G, and H tell you whether the keyboard, control, and chord tracks are prepared to record or play data.
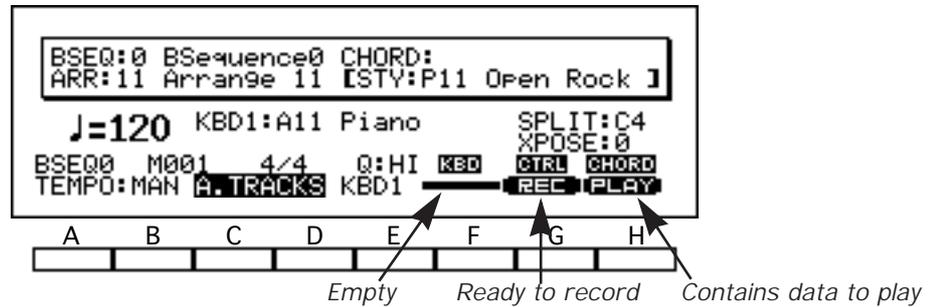
```
BSEQ:0 BSequence0 CHORD:
ARR:11 Arrange 11 [STY:P11 Open Rock ]

 ♩=120   KBD1:A11 Piano           SPLIT:C4
                                   XPOSE:0
BSEQ0  M001    4/4    Q:HI  KBD   CTRL CHORD
TEMPO:MAN A.TRACKS KBD1  ▬▬▬▬   REC  PLAY
```

```
    A     B     C     D     E     F     G     H
```

Empty   *Ready to record*   *Contains data to play*

When a track is empty, this setting will appear as an empty bar. The word **PLAY** will appear in the bars for tracks containing data—even if this data consists of nothing but empty measures.

When you press the REC/WRITE key to record the keyboard, chord, and control tracks, the letters **REC** will appear in all three track activity bars. The tracks will begin recording using the *overwrite* record mode—which we describe in the next section—as soon as you press START/STOP.

It is possible to record data on only one or two of these tracks. Just move the cursor to any track you don't want to record, and use the VALUE controls to switch the letters **REC** back to the empty bar.

☞ **Muting tracks**

You can also use the track activity bars to mute the keyboard, chord, and control tracks during playback. To mute a track, simply move the cursor to its track activity bar and use the VALUE controls to switch the bar between **PLAY** and **MUTE**.

Muting the keyboard track will silence that part. If you mute the control track, the backing sequence will be unable to switch between style elements or reproduce any of the other control panel operations that you recorded. If you mute the chord track, the backing sequence will not be able to play chord changes as programmed, however, it will play chord changes you enter in real time from the keyboard.

Record Mode Settings

If you select one of the extra tracks for recording on the first page of Backing Sequence mode, a Record Mode setting will appear on the bottom line of the display. This setting lets you choose the recording method you will use to record data to the selected track.

```
┌─────────────────────────────────────────────┐
│  BSEQ:0 BSequence0 CHORD:                     │
│  ARR:11 Arrange 11 [STY:P11 Open Rock ]       │
│                                               │
│  ♩=120  ETr1:A11 Piano        Vol=100         │
│         C Level=3  D Level=1 Pan=CNT          │
│  BSEQ0  M001   4/4      Q:HI                   │
│  TEMPO:MAN E.TRACK1  AUTP:M001➡001            │
└─────────────────────────────────────────────┘
   ┌───┬───┬───┬───┬───┬───┬───┬───┐
   │ A │ B │ C │ D │ E │ F │ G │ H │
   └───┴───┴───┴───┴───┴───┴───┴───┘
        Track parameter        Start Measure
                  Record Mode        End Measure
```
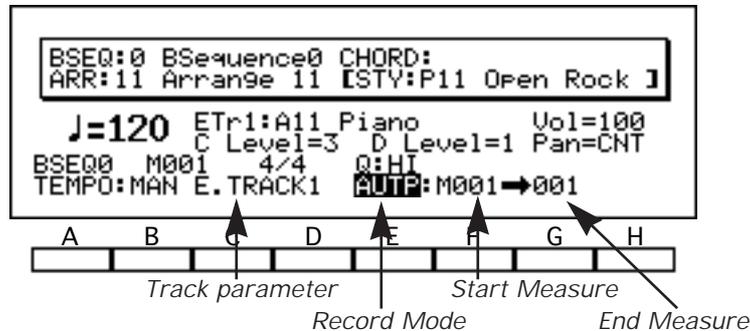
If you pick autopunch recording as the recording method, the *i2/i3* will display a pair of parameters that let you set the start and end points of the segment to be recorded. These parameters will appear at the end of this line.

Record Mode   [OVWR, OVDB, AUTP, MANP]

> This setting selects the realtime recording method you will use to record new backing sequence data. The *i2/i3* gives you four ways to record data to the extra tracks in real time.
>
> First, there are two straightforward recording methods. You can select the **OVWR** setting to overwrite previous track data, or use the **OVDB** setting to overdub new data on top of the old.
>
> If you need to re-record one or more measures in the middle of a backing sequence, you can choose from one of two punch-in recording methods. Use **AUTP** if you want the *i2/i3* to punch in and out of record mode automatically, or **MANP** if you would prefer to do it manually.
>
> Detailed procedures for the use of these recording methods may be found in Chapter 7 of the Player's Guide.

Start Measure   [0…999]

> This setting is displayed only when you set the Record Mode setting to **AUTP**. When you use autopunch recording, the *i2/i3* will begin recording at the start of the measure you select here.

End Measure   [0…999]

> This setting is displayed only when you set the Record Mode setting to **AUTP**. When you use autopunch recording, the *i2/i3* will stop recording at the end of the measure you select here.
>
> To record only one measure, set this parameter to the same value as the Start Measure parameter.

EXTRA TRACK PARAMETERS 1

Page 2 of the Backing Sequence mode display contains parameters for the eight extra tracks. They let you select the output destination for track data and protect the track's contents. You can also transpose or detune each track, or adjust its pitch bend range.

Track Status
Track Protect
Transpose
Detune
Pitch Bend Range

This page does not let you make any transpose settings for the keyboard track. Instead, the current setting of the TRANSPOSE keys will be used to transpose the keyboard timbres.

Track Status   [OFF, INT, EXT, BOTH]

These parameters determine whether the *i2/i3* will play or transmit data for the corresponding tracks during backing sequence playback.

When you set one of these parameters to **OFF**, the *i2/i3* will not play back the corresponding track at all. When you select **INT**, it will send the track's data to the internal tone generator, but it will not transmit it from the MIDI OUT jack.

You can select **EXT** when you want the *i2/i3* to transmit a track's data to an external tone generator without playing the data itself. Finally, the **BOTH** setting lets you send track data to both destinations. This is the normal setting for each track.

This setting also affects the transmission of notes you play on the *i2/i3* keyboard when you select one of the extra tracks for recording. If you select a track set to **OFF** or **INT**, the *i2/i3* will not transmit data for such notes from the MIDI OUT jack. If you select a track set to **EXT**, the *i2/i3* internal tone generator will not respond to keyboard control.

Track Protect   [OFF, ON]

These parameters let you protect your recorded track data.

When you turn one of them **ON**, the *i2/i3* will not let you record new note data, program changes, or volume changes to the corresponding track. Neither will it let you edit the track's current data using the Event Edit function described on page 64.

You will be able to adjust the extra track parameters on Page 1 of the Backing Sequence mode display. However, because the *i2/i3* will not write these changes to memory, you can return the settings to their original values at any time by simply pressing the RESET key. The **ON** setting is thus useful when you want to try out program, volume, or panning changes before you actually record them.

This parameter is normally turned **OFF** to enable the recording and editing of backing sequence data.

Transpose (T)   [–24…+24]

These parameters let you transpose tracks up or down in steps of one semitone, to a maximum of two octaves. A setting of **0** produces the standard pitch for the selected program.

The relationship of these parameters to the Global mode Scale settings (see

page 222), and their effect on data transmitted from the MIDI OUT jack, are determined by the Xpose Pos parameter (see page 211).

☞ **If a track won't play high notes…**

Since every multisound has an upper limit to its pitch range, some tracks may produce no sound if you transpose them up and play notes in the higher reaches of the keyboard.

Detune (D)   [–50…+50]

These parameters adjust the pitch of corresponding tracks in one-cent steps, to a maximum of 50 cents (one-half semitone). They are most effectively used to detune two tracks playing in unison, for a thicker sound.

To achieve this effect, set the Channel parameter for two tracks to the same value, but record data on only one of these tracks (see page 61). Then adjust the Detune parameters for both tracks, raising one and lowering the other by the same amount. (If you detune only one track, the pair of tracks will produce an off-key sound.)

Pitch Bend Range (B)   [–12…+12, PROG]

These parameters set the ranges in which the corresponding tracks will play or record pitch bend data.

The maximum setting of **12** will let you bend the pitch up or down one octave. Positive settings will cause the pitch to rise when you move the joystick to the right, and drop when you move it to the left. Negative settings will have the opposite effect.

These parameters are usually set to **PROG**, so that each track will use the pitch bend range settings for the selected program.

EXTRA TRACK PARAMETERS 2

Page 3 of the Backing Sequence mode display contains MIDI-related parameters for the extra tracks. The first of these selects the MIDI channel used by each track. The others are filters that let you combine two or more programs in a velocity-switch or split-keyboard setup.

```
BSEQ0 3:E.TRK PARAM 2 ▶Channel
 ETR1  ETR2  ETR3  ETR4  ETR5  ETR6  ETR7  ETR8
 02    03    04    05    06    07    08    09
 127   127   127   127   127   127   127   127
 001   001   001   001   001   001   001   001
 G9    G9    G9    G9    G9    G9    G9    G9
 C-1   C-1   C-1   C-1   C-1   C-1   C-1   C-1
   A     B     C     D     E     F     G     H
```

Channel
Vel Window Top
Vel Window Bottom
Key Window Top
Key Window Bottom

This page does not let you set the MIDI channel or data windows for the keyboard track. A backing sequence will automatically use the channel and velocity window settings you have selected for the keyboard timbres in the arrangement being played (see page 11). Key window settings for the keyboard track are replaced by the keyboard assign modes described on page 116 of the Player's Guide.

Channel   [1…16]

These parameters set the MIDI channels for each track. The track will use this channel to receive MIDI data from the keyboard and the MIDI IN jack. It will transmit data on this channel as long as its Track Status parameter (see page 59) has been set to **EXT** or **BOTH**.

You can set two or more tracks to use a single MIDI channel. The tone generator will play, in unison, the programs assigned to all tracks set to this channel whenever you select one of the tracks for the Track parameter described on page 56. (It will also play all of the programs when it receives data for that channel via the MIDI IN jack.)

You can also set two or more tracks to use the same MIDI channel, then divide your performance data between the tracks. You might find it convenient, for example, to record note data in one track, and control data such as volume changes and pitch bends in another.

Vel Window Top   [1…127]

These parameters set the highest velocities at which the corresponding tracks will play note data. You can use them together with the Vel Window Bottom parameters, described below, to combine tracks in a velocity-switch or velocity-layer arrangement.

For example, you might set the Vel Window Top parameter for one track to **100**, and the Vel Window Bottom parameter for another to **101**. The two tracks would play different programs—muted and picked guitar sounds, for example—but both would use the same MIDI channel (set by the Channel parameter described above.)

The first track would record all the data, playing only low-velocity notes, while the second track would play the rest. The overall effect would be one of a guitarist switching between muted and open playing styles.

You can also overlap velocity windows to create layered effects. For example, you might set one track to play a string sound at all times, and another to add a touch of brass at higher velocities only.

☞ **Set these parameters from the keyboard**

You can set the velocity window parameters by playing notes at the desired velocities on the *i2/i3* keyboard while holding down the cursor key for the corresponding track.

Vel Window Bottom [1…127]

These parameters set the lowest velocity at which the corresponding tracks will play note data. You can use them in combination with the Vel Window Top parameters, described above.

Key Window Top [C–1…G9]

These parameters set the highest notes at which the corresponding tracks will play note data. You can use them together with the Key Window Bottom parameters, described below, to record and play data with keyboard-switched program changes.

The technique for using these parameters is similar to that described for the Vel Window Top parameters, above.

```
BSEQ0 3:E.TRK PARAM 2 ▶Key Window Bottom
E                                    ETR6   ETR7   ETR8
                                     07     08     09
                                     127    127    127
                                     001    001    001
   G9    C7    B0    B2    B4    B6    G9     G9
   C-1   C2    C-1   C1    C3    C5    C-1    C4
```

```
  A     B     C     D     E     F     G     H
```

When you edit these parameters, the *i2/i3* will display a graphic of the key window for each track. To cancel this display, move the cursor to a different parameter.

☞ **Set these parameters from the keyboard**

You can set the key window parameters by playing the desired notes on the *i2/i3* keyboard while holding down the cursor key for the corresponding track.

Key Window Bottom [C–1…G9]

These parameters set the lowest notes at which the corresponding tracks will play note data. You can use them in combination with the Key Window Top parameters, described above.

EDIT TRACK

The fourth page of Backing Sequence mode lets you record data in steps rather than in real time, and edit individual events within the backing sequence data you have recorded. This page also contains utilities that you can use to erase, merge, or copy tracks, or erase an entire backing sequence.
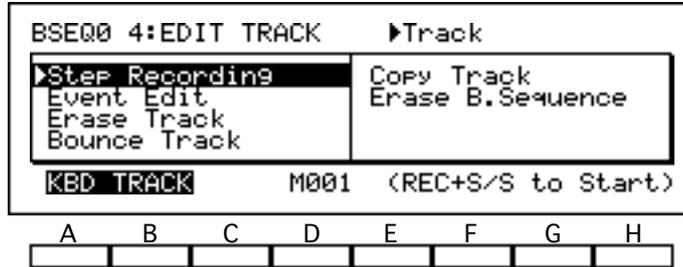
```
BSEQ0 4:EDIT TRACK     ▶Track
┌─────────────────────┬────────────────┐
│▶Step Recording      │Copy Track      │
│ Event Edit          │Erase B.Sequence│
│ Erase Track         │                │
│ Bounce Track        │                │
└─────────────────────┴────────────────┘
 KBD TRACK       M001   (REC+S/S to Start)
```

A	B	C	D	E	F	G	H

Many of the functions on this page allow you to erase or change large sections of backing sequence data. Since you can undo these changes using the COMPARE key, the *i2/i3* will normally not ask for confirmation before carrying them out. (It will ask for confirmation if there is not enough memory to save the old data, however.)

## Step Recording   *function*

The Step Recording function lets you enter note, control, or chord data one step at a time. If you use this method to record any measures that already contain data, the old data will be replaced by the data you record.

To use this function, first select a track to record above cursor key A, and the measure where you want to start recording above key D. Then press REC/WRITE, followed by START/STOP. The *i2/i3* will switch to one of the displays shown below.

Keyboard (or extra) track
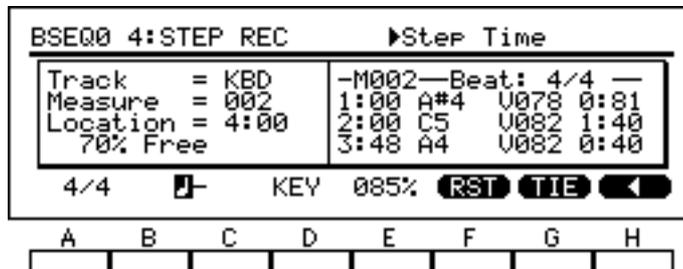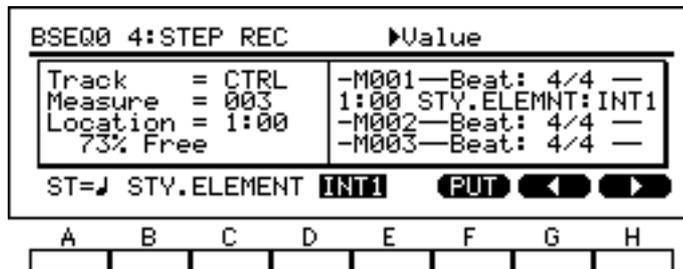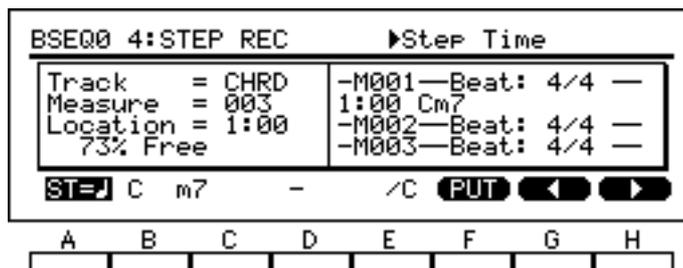
```
BSEQ0 4:STEP REC       ▶Step Time
┌─────────────────────┬────────────────────┐
│Track    = KBD       │─M002──Beat: 4/4 ──  │
│Measure  = 002       │1:00 A#4   V078 0:81 │
│Location = 4:00      │2:00 C5    V082 1:40 │
│  70% Free           │3:48 A4    V082 0:40 │
└─────────────────────┴────────────────────┘
  4/4    ♩-      KEY   085%  RST  TIE  ◀
```

A	B	C	D	E	F	G	H

Control track

```
BSEQ0 4:STEP REC       ▶Value
┌─────────────────────┬────────────────────┐
│Track    = CTRL      │─M001──Beat: 4/4 ──  │
│Measure  = 003       │1:00 STY.ELEMNT:INT1 │
│Location = 1:00      │─M002──Beat: 4/4 ──  │
│  73% Free           │─M003──Beat: 4/4 ──  │
└─────────────────────┴────────────────────┘
 ST=♩ STY.ELEMENT INT1   PUT  ◀  ▶
```

A	B	C	D	E	F	G	H

Chord track

```
BSEQ0 4:STEP REC       ▶Step Time
┌─────────────────────┬────────────────────┐
│Track    = CHRD      │─M001──Beat: 4/4 ──  │
│Measure  = 003       │1:00 Cm7             │
│Location = 1:00      │─M002──Beat: 4/4 ──  │
│  73% Free           │─M003──Beat: 4/4 ──  │
└─────────────────────┴────────────────────┘
 ST=♩ C   m7      ─    /C  PUT  ◀  ▶
```

A	B	C	D	E	F	G	H

You can use this display to record data in step time. When you are done recording, press the START/STOP key again to exit the Step Recording function.

Detailed instructions for the use of the Step Recording function may be found on page 92 of the Player's Guide.

Event Edit   *function*

This function lets you modify the characteristics of individual musical events, such as notes or MIDI control changes. You can also use it to insert or delete events.

To use this function, select the track you want to edit above cursor key B. Then press the REC/WRITE key. If you are editing the keyboard track or one of the extra tracks, the *i2/i3* will switch to an Event Filter display, which lets you select the types of events you will edit.

```
BSEQ0 4:EDIT TRACK    ▶Note Data
  Step Recording      Copy Track
▶Ev                                 e
 Er          Event Filter
 Bo    NOTE CTRL AFTT BEND PROG PAFT
       ENA  ENA  ENA  ENA  ENA  ENA
```
```
   A    B    C    D    E    F    G    H
```

When you are satisfied with your filter settings, press START/STOP to begin editing. The *i2/i3* will switch to the display shown below. Use this display to edit the events you have selected.

```
BSEQ0 4:EVENT EDIT    ▶Measure
M001 #000 ═══ BAR Beat: 4/4
M001 #001 2:75 PROG   AB:004
M001 #002 2:75 A4     V062    TIE
M001 #003 2:75 F4     V060    TIE
M001 #004 2:76 C5     V060    TIE
M002 #000 ═══ BAR Beat: 4/4   INS  DEL
```
```
   A    B    C    D    E    F    G    H
```
Keyboard or extra track

```
BSEQ1 4:EVENT EDIT    ▶Measure
M001 ══════ BAR Beat: 4/4
M001 1:00 ARRANGEMENT :12
M001 1:00 STY.ELEMENT :INT1
M002 ══════ BAR Beat: 4/4
M002 1:00 ACC3 MUTE   :MUTE
M002 1:00 DRUM MAP    :1
```
```
   A    B    C    D    E    F    G    H
```
Control track
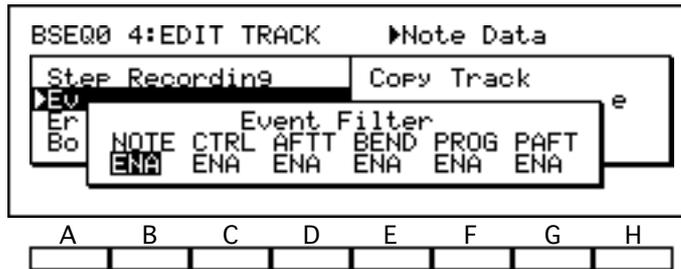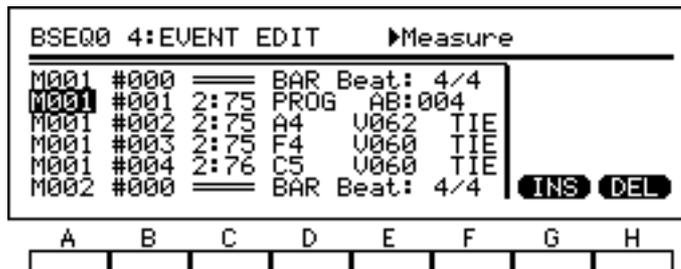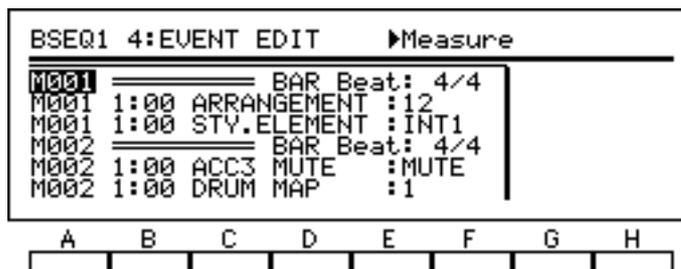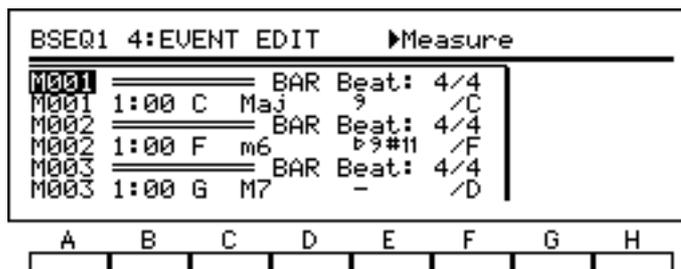
```
BSEQ1 4:EVENT EDIT    ▶Measure
M001 ══════ BAR Beat: 4/4
M001 1:00 C  Maj    9      /C
M002 ══════ BAR Beat: 4/4
M002 1:00 F  m6    ♭9#11   /F
M003 ══════ BAR Beat: 4/4
M003 1:00 G  M7     -      /D
```
```
   A    B    C    D    E    F    G    H
```
Chord track

When you are done editing, press the START/STOP key again to exit the Event Edit function.

Detailed instructions for the use of the Event Edit function may be found on page 83 of the Player's Guide.

Erase Track *function*

This function erases all backing sequence data from an entire track.
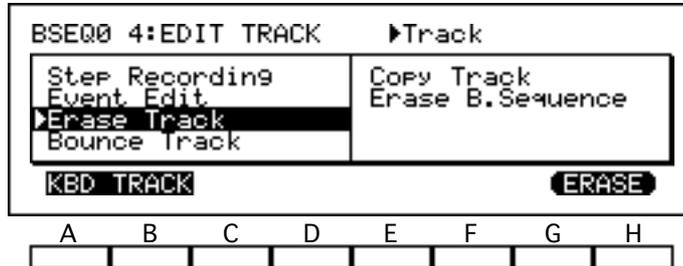
```
BSEQ0 4:EDIT TRACK    ▶Track
┌─────────────────────────┬──────────────────────┐
│ Step Recording          │ Copy Track           │
│ Event Edit              │ Erase B.Sequence     │
│▶Erase Track             │                      │
│ Bounce Track            │                      │
├─────────────────────────┴──────────────────────┤
│ KBD TRACK                            ERASE      │
└─────────────────────────────────────────────────┘
  A    B    C    D    E    F    G    H
```

To use this function, select the track you want to erase above cursor key B. Then select [ERASE]. The *i2/i3* will erase the track without asking for confirmation.

Bounce Track *function*

This function merges the backing sequence data for one track with that of another. The resulting combined track will use the program assignment, MIDI channel, and other track settings for the destination track. All backing sequence data will be erased from the source track.

If both tracks contain pitch bends, damper changes, or other control change data, these data may create unexpected results when combined. You may want to use the Erase Measure function, described on page 70, to delete all control change data from one track or the other before combining them.
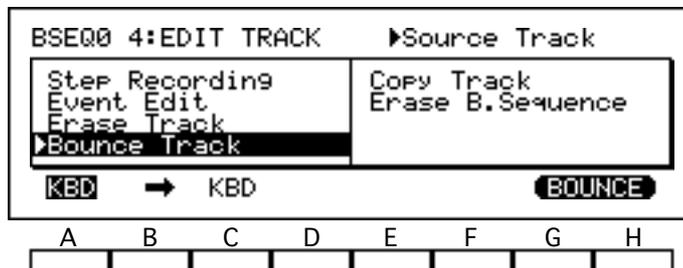
```
BSEQ0 4:EDIT TRACK    ▶Source Track
┌─────────────────────────┬──────────────────────┐
│ Step Recording          │ Copy Track           │
│ Event Edit              │ Erase B.Sequence     │
│ Erase Track             │                      │
│▶Bounce Track            │                      │
├─────────────────────────┴──────────────────────┤
│ KBD  ➡  KBD                          BOUNCE     │
└─────────────────────────────────────────────────┘
  A    B    C    D    E    F    G    H
```

To use this function, select the source track above cursor key A, and the destination track above key C. (You can select only the keyboard track or one of the extra tracks for both of these parameters.) When you have made your choices, select [BOUNCE]. The *i2/i3* will combine the two tracks without asking for confirmation.

Copy Track *function*

This operation copies backing sequence data from one track to another.

If the track you select as the destination already contains backing sequence data, the *i2/i3* will replace this data with that from the source track. The data in the source track will be unaffected.

```
BSEQ0 4:EDIT TRACK      ►Source Track
  Step Recording      ►Copy Track
  Event Edit           Erase B.Sequence
  Erase Track
  Bounce Track
  KBD    ➡   KBD                  COPY
```

A	B	C	D	E	F	G	H
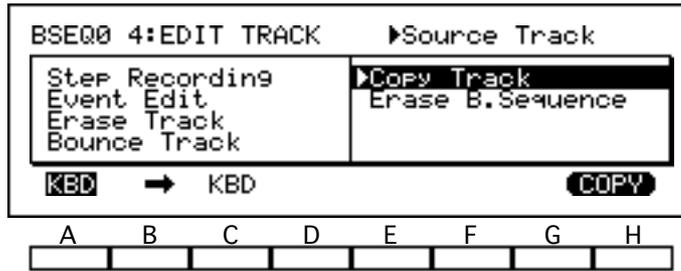
To use this function, select the track you want to copy above cursor key A, and the destination track above cursor key C. (You can select only the keyboard track or one of the extra tracks for both of these parameters.) When you have made your choices, select [COPY]. The *i2/i3* will copy the track without asking for confirmation.

☞ **A quicker way to copy tracks**

The Copy Track function is most useful when you will edit the duplicate track to create a variation, such as a harmony part. If you simply want two instruments to play the same data in unison, however, you don't have to copy the track. You can achieve the same effect at a smaller memory cost by adjusting the Channel parameter of an empty track to the same value as that of the track whose data you want it to play (see page 61).

Erase Backing Sequence   *function*

This operation erases all data from the currently selected backing sequence.

```
BSEQ0 4:EDIT TRACK
  Step Recording       Copy Track
  Event Edit          ►Erase B.Sequence
  Erase Track
  Bounce Track
  BSEQ0                           ERASE
```

A	B	C	D	E	F	G	H
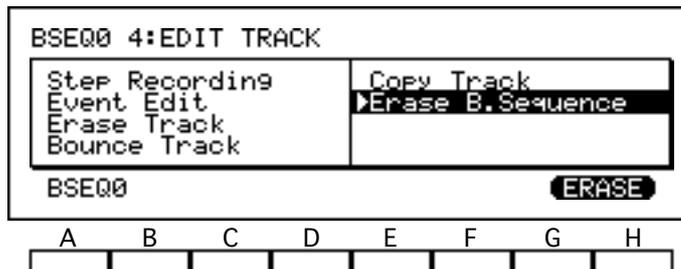
To use this function, just select [ERASE]. The *i2/i3* will erase the backing sequence without asking for confirmation.

EDIT MEASURE

Page 5 of the Backing Sequence display lets you modify track data within a specified range of measures. You can correct the timing of recorded data, shift notes, or transpose music to a different key. There are also functions that you can use to erase, copy, or insert track data in units of one or more measures
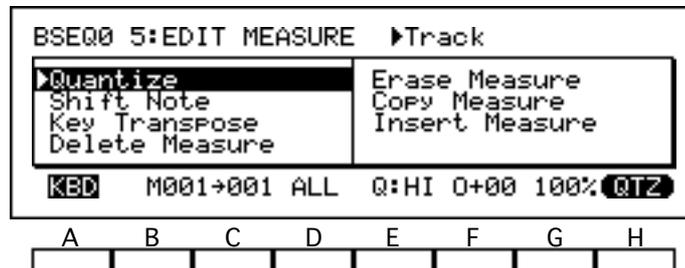
```
BSEQ0 5:EDIT MEASURE   ▶Track
┌──────────────────┬─────────────────┐
│▶Quantize         │Erase Measure    │
│ Shift Note       │Copy Measure     │
│ Key Transpose    │Insert Measure   │
│ Delete Measure   │                 │
└──────────────────┴─────────────────┘
 KBD    M001→001 ALL   Q:HI 0+00 100% QTZ
```

A	B	C	D	E	F	G	H

Many of the functions on this page allow you to change large sections of backing sequence data at once. Since you can undo these changes using the COMPARE key, the *i2/i3* will normally not ask for confirmation before carrying them out. (It will ask for confirmation if there is not enough memory to save the old data, however.)

Quantize   *function*

You can use the Quantize function to adjust the timing of data you have already recorded.

This function is more flexible than the Quantize parameter on Page 1 of Backing Sequence mode (see page 55) in that it lets you select a range of measures or a data type to quantize, leaving other measures or data types unaffected. You can also use the COMPARE key to undo the quantization if you are dissatisfied with the results.

To use this function, first set the track to be quantized above cursor key A. (Select **CHRD**, **CTRL**, or **TEMPO** to quantize the chord, control, or tempo tracks, respectively.) Then set the first and last measures to be quantized above keys B and C.

If you have selected any track other than the chord, control, or tempo tracks, you can specify the type of data to be quantized above key D. The table below lists your options.

Setting	Data quantized
ALL	All data
NOTE	All note data
CTRL	All control change messages
AFTT	All channel and polyphonic aftertouch messages
BEND	All pitch bend messages
PROG	All program change messages

Finally, set the Quantize, Offset, and Intensity parameters above keys E, F, and G. The Quantize parameter is the same as that used in realtime recording. (See page 55 for details.)

The Offset parameter shifts the quantizing grid away from the note value specified by the resolution. You can set this parameter from **–96** to **+96**, to move the grid either backward or forward by so many pulses per quarter note. Hence, a setting of +96 will shift the grid forward one whole quarter note.

Original

Quantize Resolution = ♪
Offset = +24, Intensity = 100%

100%   100%   100%

+24   +24   +24

The Intensity parameter sets the effectiveness of the quantize function as a percentage. It is normally set to **100**, to move events all the way to the quantizing grid. You could set this parameter to **50**, for example, to move each event only halfway from its recorded position to the grid. Setting it to **0** will disable the Quantize function.


Original

Quantize Resolution = ♪
Offset = 0, Intensity = 50%

50%   50%

When you are sure of your choices, select [QTZ]. The *i2/i3* will quantize the data you have specified without asking for confirmation.

Shift Note   *function*

This operation shifts notes up or down. You can use it to transpose either a specified range of notes, or all notes.


```
BSEQ0 5:EDIT MEASURE   ▶Track

 Quantize            Erase Measure
▶Shift Note          Copy Measure
 Key Transpose       Insert Measure
 Delete Measure

 KBD    M001→001 C-1 →G9   Shift=+00 SFT
```

A   B   C   D   E   F   G   H

To use this function, first set the track whose notes you want to shift above cursor key A. (You can select the keyboard track or any of the extra tracks.) Then set the first and last measures to be affected above keys B and C.

Next, use the Note Range Bottom and Top parameters above keys D and E to specify the range of notes to be shifted. Normally these parameters are set to **C–1** and **G9**, respectively, to shift all notes. You can change both parameters within this range to shift only a limited set of notes.

(You can set these parameters by playing the desired notes on the *i2/i3* keyboard while holding down the cursor key for each.)

Finally, set the number of semitones by which the notes will be shifted above key G. You can shift notes up or down a maximum of two octaves.

When you have made your choices, select [SFT]. The *i2/i3* will shift the notes without asking for confirmation.

Key Transpose   *function*

This operation transposes the key of the music data in a specified range of measures.

```
BSEQ0 5:EDIT MEASURE    ▶Track

 Quantize                Erase Measure
 Shift Note              Copy Measure
▶Key Transpose           Insert Measure
 Delete Measure

 KBD    M001→001 Cmaj  ➡Cmaj   TRANSPOSE

    A    B    C    D    E    F    G    H
```

To use this function, first set the track whose key you want to transpose above cursor key A. (You can select the keyboard track or one of the extra tracks.) Then set the first and last measures to be affected above keys B and C.

Next, set the current key of the music in the selected measures above cursor key D, and the key you want to transpose it to above key E. You can select any major or minor key for both of these parameters.

(You can set the note portion of the key name for these parameters by playing the desired notes on the *i2/i3* keyboard while holding down the cursor key for each.)

When you have made your choices, select [TRANSPOSE]. The *i2/i3* will transpose the music without asking for confirmation.

Delete Measure   *function*

This operation cuts one or more measures from the track you specify.

To use this function, first select a track above cursor key A. Choose **ALL** to cut measures from all tracks, including the chord, control, and tempo tracks.

Next, select the first and last measures to be deleted above keys B and C, respectively. (Set the same number for both to delete only one measure.)

```
BSEQ0 5:EDIT MEASURE    ▶Track

 Quantize                Erase Measure
 Shift Note              Copy Measure
 Key Transpose           Insert Measure
▶Delete Measure

 KBD    M001→001                 DELETE

    A    B    C    D    E    F    G    H
```

When you are sure of your choices, select [DELETE]. The *i2/i3* will delete the measures without asking for confirmation.

☞ **If the backing sequence includes changes in time signature**

Any measures following the deleted measures will of course be moved forward. If you delete measures from one track only, the measures that are moved forward will use the same time signature as the corresponding measures of other tracks.

The renumbered measures may thus be truncated or expanded as a result of the deletion. (See the explanation of the Beat parameter for details.)

Erase Measure *function*

This operation erases some or all data from one or more measures.

To use this function, first select a track above cursor key A. Choose **ALL** to erase all tracks, including the chord, control, and tempo tracks. (If you want to erase data from the tempo track alone, use the Event Edit function described on page 64.)

```
BSEQ0 5:EDIT MEASURE  ▶Track
┌─────────────────┬─────────────────┐
│ Quantize        │▶Erase Measure   │
│ Shift Note      │ Copy Measure    │
│ Key Transpose   │ Insert Measure  │
│ Delete Measure  │                 │
└─────────────────┴─────────────────┘
 KBD   M001→001 ALL   C-1 →G9    (ERASE)
```

| A | B | C | D | E | F | G | H |
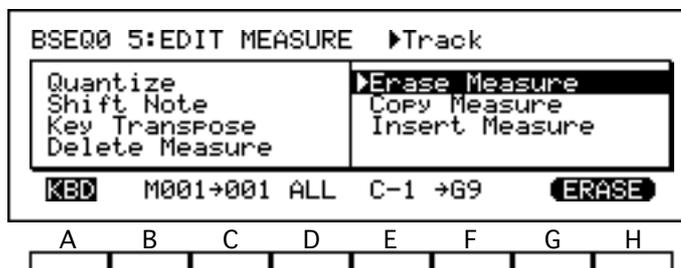
Next, set the first and last measures to be erased above keys B and C, respectively. (Set the same number for both to erase data from only one measure.)

Finally, set the type of data to erase above key D. The table below lists your options.

Setting	Data erased
ALL	All data, including specified note range
NOTE	Note range specified above cursor keys E and F
CTRL	All control change messages
AFTT	All channel and polyphonic aftertouch messages
BEND	All pitch bend messages
PROG	All program change messages

If you select **ALL** or **NOTE**, you can use the Note Bottom and Note Top parameters above cursor keys E and F to specify a note range to be erased. Normally these parameters are set to **C–1** and **G9**, respectively, to erase all notes. You can change both parameters within this range to erase only a limited set of notes.

When you are sure of your choices, select [ERASE]. The *i2/i3* will erase the specified data from the measures you selected without asking for confirmation.

☞ **Erasing control changes**

Some control changes—such as damper changes or pitch bends—may "stick" if you erase the messages that turn them off. If this happens, you should either erase the messages that are sticking, or use the Event Edit function (see page 64) to correct the data.

Copy Measure *function*

This operation copies one or more measures, either within a track or between tracks.

To use this function, first specify the track containing the measures you want to copy above cursor key A. Choose **ALL** to copy the data from all tracks, including the chord, control, and tempo tracks. Then select the first and last measures to be copied above keys B, and C. (Set the same number for both to copy data from only one measure.)

```
BSEQ0 5:EDIT MEASURE   ▶Track

 ┌─────────────────┬──────────────────┐
 │ Quantize        │ Erase Measure    │
 │ Shift Note      │▶Copy Measure     │
 │ Key Transpose   │ Insert Measure   │
 │ Delete Measure  │                  │
 └─────────────────┴──────────────────┘
  KBD  M001→001    ➡   KBD   M001   COPY
```

```
    A     B     C     D     E     F     G     H
  ┌───┐ ┌───┐ ┌───┐ ┌───┐ ┌───┐ ┌───┐ ┌───┐ ┌───┐
```
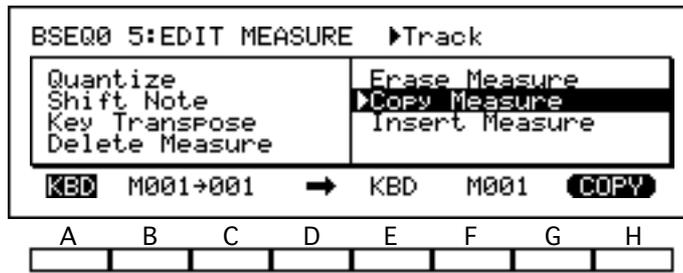
Next, select the destination track above key E. (The *i2/i3* will select the **ALL** setting automatically if you have selected **ALL** above cursor key A, and likewise for settings of **CTRL** and **CHRD**. If you want to copy data between the keyboard track and one of the extra tracks, first select the extra track. Then select the keyboard track by pressing DATA ENTRY key **0** while holding the appropriate cursor key.) Finally, enter the number of the measure where the *i2/i3* should place the first of the duplicate measures above key F.

When you are sure of your choices, select [COPY]. The *i2/i3* will copy the data without asking for confirmation. If the destination measures already contain data, this data will be replaced by the copied measures.

☞ **If the backing sequence includes changes in time signature**

If tracks other than the destination track contain data for measures corresponding to the destination measures, the copied measures will use the same time signature as the other tracks.

ETrk1

1 (4/4)	2 (4/4)	3 (4/4)	4 (7/8)	5 (7/8)

ETrk2

1 (4/4)	2 (4/4)	3 (4/4)	4 (7/8)	5 (7/8)
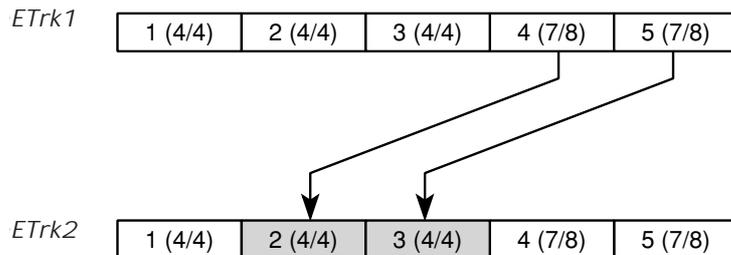
The copied measures may thus be truncated or expanded as a result of the copy operation. (See the explanation of the Beat parameter for details.)

Insert Measure   *function*

This operation lets you insert one or more measures into a track at a specified location.

To use this function, first select the track to receive the new measures above cursor key A. Choose **ALL** to insert measures in all of the tracks, including the chord, control, and tempo tracks.
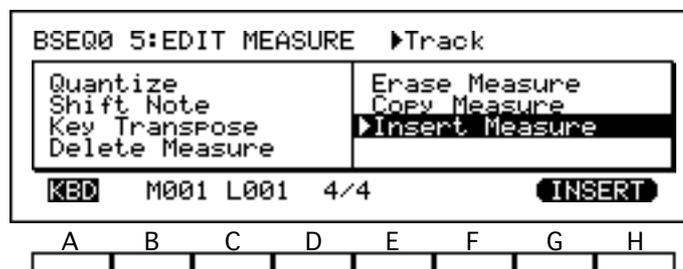
```
BSEQ0 5:EDIT MEASURE   ▶Track

 ┌─────────────────┬──────────────────┐
 │ Quantize        │ Erase Measure    │
 │ Shift Note      │ Copy Measure     │
 │ Key Transpose   │▶Insert Measure   │
 │ Delete Measure  │                  │
 └─────────────────┴──────────────────┘
  KBD  M001 L001   4/4            INSERT
```

```
    A     B     C     D     E     F     G     H
  ┌───┐ ┌───┐ ┌───┐ ┌───┐ ┌───┐ ┌───┐ ┌───┐ ┌───┐
```

Next, specify the number of the measure *before* which you want to insert the new measures above key B, and the number of new measures to insert above key C. You can also specify a time signature for the new measures above cursor key D—but see the note below.

When you have made your choices, select [INSERT]. The *i2/i3* will insert the new measures without asking for confirmation.

☞ **If the backing sequence includes changes in time signature**

If you select a new time signature above cursor key D, the corresponding measures of all tracks will be truncated or expanded to match this time signature.

Time signature = 7/8 *(above cursor key D)*

Otherwise, the *i2/i3* will show ****/**** for this parameter, and the new measures will use the same time signature as the corresponding measures of other tracks that already contain data, or of the following measures if all other tracks are empty.

Time signature = **/** *(above cursor key D)*

Whether you select a new time signature or not, any measures following the inserted measures will be pushed back. If you insert measures to one track only, the measures that are pushed back will use the same time signature as the corresponding measures of other tracks, as shown in the illustrations above.

The renumbered measures may thus be truncated or expanded as a result of the insertion. (See the explanation of the Beat parameter for details.)

EFFECT

Page 6 of the Backing Sequence mode display lets you use two digital signal processors to apply effects to each backing sequence you create. Since both processors can apply two effects simultaneously, you can apply a variety of different effects to the programs playing the backing sequence.

```
BSEQ0 6:EFFECT        ▶Effect Type

FX1 01:Hall         :ON  Mod:NONE   I+00
  2.0 P060 E62  HD31      L-03 H-01 →FX

FX2 19:Chorus 1     :ON  Mod:NONE   I+00
  T026 S0.33 M99  TRI     L+04 H+04 →FX
 [PARALLEL3] FX1:L4   R4   FX2:L4    R4
```

A	B	C	D	E	F	G	H

All of the programs played by your backing sequence will use the effect settings you make on this page. Be aware, however, that the effect settings you select in Backing Sequence mode may differ from those assigned to the programs in Edit Program mode or Arrangement Play mode. Hence, if you audition programs in one of these modes before using them in a backing sequence, you may find that they will fail to produce the sound you expect when the backing sequence plays.

The simplest way around this would be to audition programs in Backing Sequence mode, after first selecting the backing sequence's effects. If you find this limiting, however, you may want to try a more involved approach. You could audition the sounds in Program mode, then try to create an effect setup—using dual effects, if necessary—that reproduces as many of the programs' individual effects as possible.

As a third alternative, you could take a course similar to that followed by many recording engineers. First, audition the programs without any effects at all, selecting them for their raw sound qualities. Then, with the signal processors still turned off, go ahead and record the backing sequence. Finally, when all the tracks are ready, add the effects in gradually to create a customized effects setup that brings out the best features of each program.

Because the EFFECT page in Backing Sequence mode presents you with the same effect options as the Arrangement Play, Song, and Edit Program modes, the contents of this page are described in their own chapter. Please refer to Chapter 7 for details on the effect settings.

You can call up the EFFECT page to edit effect parameters while a backing sequence is playing by pressing the PAGE+ key.

UTILITY

The final page of the Backing Sequence mode display contains utility functions that let you name your backing sequence and change other special backing sequence parameters. Also, two effect-related functions make it easy to copy or swap effect settings.

```
BSEQ0 7:UTILITY
▶Next B.Sequence          Copy/Swap FX
 Rename B.Sequence
 Metronome
 Copy All Effects
 Next:OFF                 Auto Start: OFF
```
```
  A    B    C    D    E    F    G    H
```
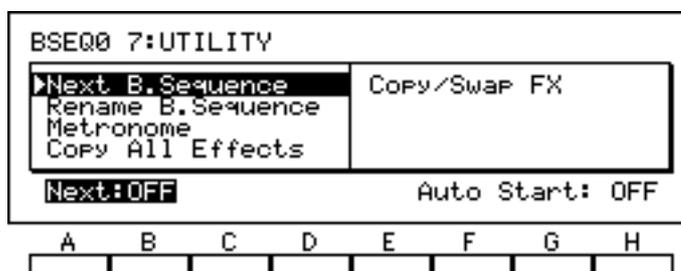
There is no need to "execute" the Next Backing Sequence, Rename Backing Sequence, or Metronome functions, as these functions are actually nothing more than special parameters. The *i2/i3* will record their settings, together with all backing sequence data and the parameters on the other pages of the Backing Sequence mode display, when you save the backing sequence to disk using the Save All Data or Save All B. Sequenc functions in Disk mode (see page 240 and 241).

Next Backing Sequence   *function*

This function lets you specify a backing sequence to be selected—and played—when the currently selected backing sequence ends.

This function is actually a pair of parameters. The Next parameter (cursor keys A through E) identifies the number of the backing sequence—**BSEQ0** through **BSEQ9**—that you want the *i2/i3* to select when it's done playing the current backing sequence. (The name of each backing sequence will be displayed next to its number.) If you set this parameter to **OFF**, the current backing sequence will remain selected.

The Auto Start parameter (keys F, G, or H) tells the *i2/i3* whether it should start playing the specified backing sequence when the current backing sequence ends. If you set this parameter to **OFF**, the *i2/i3* will select the next backing sequence, but it will not play it back. If you set it to **ON**, the *i2/i3* will begin playback automatically (unless the Next parameter is turned off, in which case it will simply end playback).

This function lets you set a *chain* of backing sequences that will play automatically. To create a continuous *loop* of backing sequences, just set the last backing sequence's Next parameter to the number of the first backing sequence in the chain, and turn the Auto Start parameter **ON** for all the backing sequences. For example, if you want the loop to repeat backing sequences 0 through 9, set backing sequence 9's Next parameter to **BSEQ0**.

Rename Backing Sequence   *function*

You can use this function—which is actually a special parameter—to change the name of the backing sequence you're editing. The backing sequence name can consist of up to ten characters.

```
BSEQ0 7:UTILITY
 Next B.Sequence          Copy/Swap FX
▶Rename B.Sequence
 Metronome
 Copy All Effects
 BSEQ0 BSequence0    (INS)(DEL)( ◀ )( ▶ )
```
```
  A    B    C    D    E    F    G    H
```
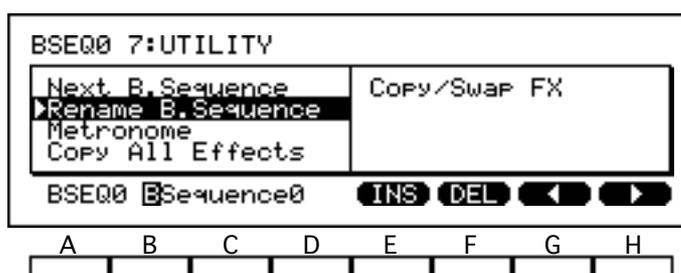
When you select the Rename Backing Sequence function, the current backing sequence name will appear on the bottom line of the display, above cursor keys B and C. Change this to the desired name as described on page 33 of the Player's Guide.

Metronome   *function*

This function contains four parameters that let you specify how the metronome will perform while recording and playing the backing sequence you are editing.

The Switch parameter (cursor key A or B) determines when the metronome will sound. You will never hear it when you select **OFF** for this parameter. If you switch it to **REC**, the metronome will sound during recording but not during playback. It will sound during both recording and playback when you use the **ON** setting.

The Lead-In parameter (cursor key C or D) sets the number of measures the metronome will count off before the *i2/i3* starts recording whenever you record in realtime. You can specify a lead-in of **0**, **1**, or **2** measures.

The Level parameter (cursor key E or F) lets you set the volume of the metronome sound. Setting this parameter to **0** will make the metronome inaudible (although it will still use up one note of the *i2/i3* polyphonic capacity). The highest setting of **99** will raise its volume to maximum.

Finally, the Pan parameter (cursor key G or H) lets you select the channels that will output the metronome. The first three settings (**L**, **CNT**, and **R**) let you pan the metronome to the left, center, or right on the stereo channels (A and B). The second three settings (**C**, **C+D**, and **D**) do the same for effect send channels C and D. If you select **ALL**, the *i2/i3* will output the metronome through all four channels.

Copy All Effects   *function*

This function copies all the effect parameters from a program, an arrangement, a song, or another backing sequence, into the backing sequence you are editing.

To use this function, first select the type of data from whose effect parameters you want to copy. Then press E and select the number of the arrangement, backing sequence, song, or program in question.
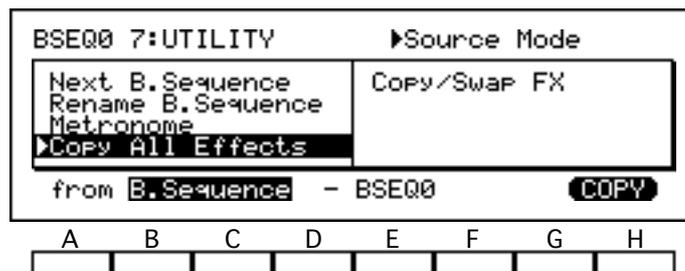
When you have made your choices, select [COPY]. The *i2/i3* will copy the data you selected to the current backing sequence after asking for confirmation.

Copy/Swap FX   *function*

This function copies or exchanges the parameter values of the two effect selections for the backing sequence you're editing.

To use this function, first select the direction in which you will be copying effect data. A one-headed arrow pointing in either direction will result in two effects with exactly the same settings. When the arrow points in both directions, the function will swap the data for Effect 1 with that for Effect 2.

```
BSEQ0 7:UTILITY        ▶Direction
 ┌─────────────────────┬─────────────────────┐
 │ Next B.Sequence     │▶Copy/Swap FX        │
 │ Rename B.Sequence   │                     │
 │ Metronome           │                     │
 │ Copy All Effects    │                     │
 └─────────────────────┴─────────────────────┘
   FX1 ━━▶ FX2                      (COPY)
```

A	B	C	D	E	F	G	H
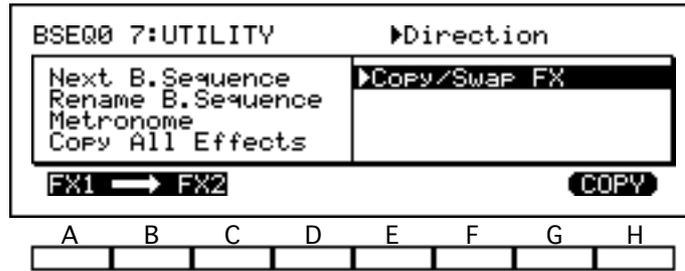
When you are sure of your choice, select [COPY] or [SWAP]. The *i2/i3* will copy or swap the data after asking for confirmation.

Chapter 4
Song Mode

The *i2/i3* Song mode lets you record songs consisting of up to 16 independent tracks, each of which can play a different *i2/i3* program in response to note information it receives from its own MIDI channel. If you have a leftover track and polyphonic capacity to spare, you can assign the *i2/i3* keyboard to that track and play along with the finished song.

The *i2/i3* lets you choose from five *realtime* recording methods to record music as you play. It can also record music as individual steps of data using the *step recording* method. As a third option, you can record as many as 100 *patterns* of up to 99 measures each, then assign them to tracks. *Pattern recording*, as this is known, helps you save memory when recording short phrases that are repeated often in a song.

The Song mode divides its parameters and functions among eleven display pages, which are summarized on the following page of this manual. You can switch through these pages using the PAGE+ and PAGE– keys, or by pressing the DATA ENTRY key bearing the number of the desired page while holding down the SONG key. (Use the DATA ENTRY "–" key to select Page 11.)

The general procedures for editing parameters and using utility functions are outlined in Chapter 3 of the Player's Guide. Procedures for recording, playing back, and editing songs are covered in Chapter 7 of that manual.

The *i2/i3* sequence memory can hold as many as ten songs, up to a total of 40,000 steps of data. This memory is used by all songs and patterns, as well as any backing sequences you record in Backing Sequence mode. Each track or pattern is limited to 16,000 steps.

The contents of the sequence memory will be lost when you turn off your *i2/i3*. After every programming session, you should be sure to save your sequence data to disk using one of the Save functions described in Chapter 9. (It is also a good idea to save the song periodically during the session, to prevent accidental loss in case of a power failure.)

While recording and editing songs, you can press the COMPARE key at any time to undo the last change you made, be it a newly recorded track or a minor adjustment made with an editing function. Pressing this key a second time will restore the change. You can thus use the COMPARE key to double-check the results of any change you make.

The Compare function may be limited in some cases by the amount of available memory. When there is not enough memory for the *i2/i3* to let you compare data after making a major change, it will warn you of this fact beforehand. You may want to save the data to disk before going ahead with the change, so you will have the old data handy in case you're not satisfied with the results of the change.

Functions in Song Mode

The table below shows the layout of the *i2/i3* Song mode. For each display page we list the page title, a brief outline of the page's contents, and the numbers of the pages in this manual where you will find these contents described.

Page	Title	Contents	Description
1	REALTIME	Track parameters and activity bars	80–81
		Song pointers, beat, and record mode	82–84
		Tempo and recording controls	85–86
2	TRACK 1–8	Track status, protect, and pitch control	87–88
3	TRACK 9–16		
4	CH/WINDOW 1–8	MIDI channel and data windows	89–90
5	CH/WINDOW 9–16		
6	EDIT SONG	Step Recording	91
		Event Edit	91
		Erase Track	92
		Bounce Track	92
		Copy Track	93
		Erase Song	93
		Append Song	94
7	EDIT MEASURE	Delete Measure	95
		Erase Measure	96
		Copy Measure	98
		Insert Measure	99
		Put/Copy Pattern	100
8	MODIFY MEASURE	Quantize	103
		Shift Note	104
		Key Transpose	105
		Modify Velocity	105
		Modify Gate Time	106
		Modify Contrl Data	107
9	PATTERN	Realtime Recording	108
		Step Recording	109
		Event Edit	109
		Pattern Parameters	110
		Erase Pattern	110
		Get From Track	111
		Bounce Pattern	112
		Copy Pattern	112

Page	Title	Contents	Description
10	EFFECT	Effect parameters and placement	Chapter 7
11	UTILITY	Next Song	114
		Rename Song	114
		Metronome	115
		Copy All Effects	115
		Copy/Swap FX	115
		Base Resolution	116

REALTIME

The first page of Song mode contains the essential settings for most realtime recording and playback operations. The first four lines of the display let you change the basic parameters for each of the song's sixteen tracks. They also contain the track activity bars, which let you check (and change) the recording and playback status of each track.

Song number and name   Program number and name

Track data field
Track activity bar

```
SONG0 New Song        ▶A13:HammerPno
A11   A12   ▊A13▊ A14   A15   A16   A17   A18
A21   A22   A23   A24   A25   A26   A27   A28
SNG0 Tr01 M001  4/4  OVDB
♩=120:AUT Q:HI M:OFF PROGRAM
   A    B    C    D    E    F    G    H
```

Song pointers, beat, and record mode
Tempo and recording controls

Parameter
Select
setting
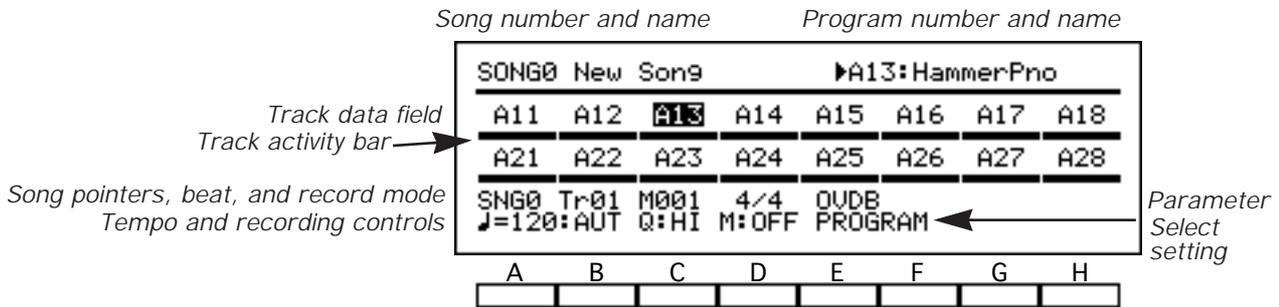
The parameter fields on the first and third lines let you set the program, volume, panning, and effect send levels for each track. You can edit these parameters while recording to insert program and control change data into a track. Use the Parameter Select setting on the bottom line of the display to select the parameter you will edit. (See page 86 for details.)

The name of the parameters currently shown by these fields will not appear in the upper right corner of the display, however. (The number and name of the program assigned to the track you've selected will appear there instead.) You can check the name of the currently displayed parameters by referring to the Parameter Select setting.

The bottom two lines of this display page contain the song location pointers and a number of other important settings that you will use when recording songs in real time. These settings are all described in the next sections.

Program   [A11…Dr8]

When Parameter Select is set to **PROGRAM**, these fields let you select the program to be played by each track.

You can change the current program selection using either the VALUE controls or the PROGRAM keys, as described on page 27 and 28 of the Player's Guide.

Volume (V)   [0…127]

When Parameter Select is set to **VOLUME**, these fields set the volume of each track.

Setting a track's volume to **0** will make it inaudible (although it will still use up some of the *i2/i3*'s polyphonic capacity). The highest setting of **127** will raise the volume to the maximum level set by the selected program's Level parameters (see page 124 and 126).

Panpot   [OFF, L15…L1, CNT, R1…R15, PRG]

When Parameter Select is set to **PANPOT**, these fields set the stereo position of each track. They do this by adjusting the levels of the signals input to the effects system via channels A and B. (For an explanation of these channels and their relationship to the effects system, see pages 206 through 208 of this manual.)

The **CNT** setting centers the track. Settings preceded by an **L** move it to the left, whereas those preceded by an **R** move it to the right. The sound moves farther from the center as the numerical value of the setting increases.

The **OFF** setting lets you turn off the track's output to channels A and B altogether. Finally, a **PRG** setting tells the *i2/i3* to use the panning specified by the program's Panpot parameters (see page 125 and 126).

Effect Send Level C, D   [0…9, P]

When Parameter Select is set to **C LEVEL** or **D LEVEL**, these fields determine the levels of the track signals that are sent to the effects system via channels **C** or **D**.

You can set a level from **0** (no signal) to **9** (maximum) for each channel. If you set these parameters to **P**, the *i2/i3* will use the effect send levels specified by the program's parameters (see page 125 and 127).

The nature of these effect send channels and their relationship to the stereo channels (A and B) are described in detail on pages 206 through 208.

Track activity   [—, REC, PLAY, MUTE, SOLO]

The bar under each track data field tells you whether that track is prepared to record or play song data.
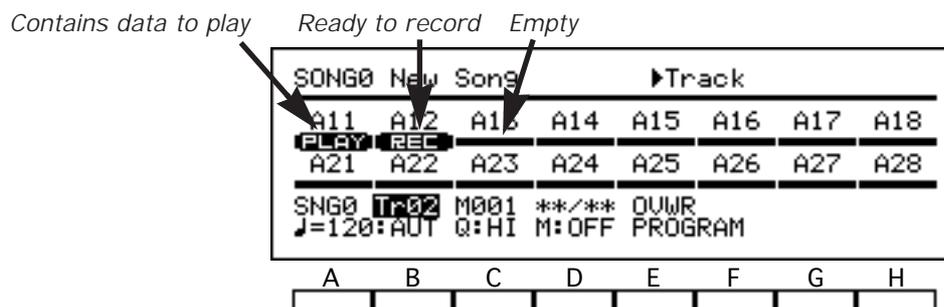
Contains data to play   Ready to record   Empty

When a track is empty, this setting will appear as an empty bar. The word **PLAY** will appear in the bars for all tracks containing data—even if this data consists of nothing but empty measures.

When you press the REC/WRITE key to record a track, the letters **REC** will appear in the bar for that track. The track will begin recording data—using the recording mode specified by the Record Mode setting described in the next section—as soon as you press START/STOP.

You can record several tracks at once by selecting **MULT** for the Track parameter, then making sure that the **REC** setting appears in the track activity bars for all tracks you want to record. (See the description of the Track parameter, in the next section, for details.)

☞ **Muting and soloing tracks**

You can also use the track activity bars to mute or solo tracks during playback (or while recording new tracks).

To mute a track, press the ARRANGEMENT/STYLE key corresponding to the track you want to mute (that is, one of the upper-row keys for tracks 1 through 8, or one of the lower-row keys for tracks 9 through 16). The word **MUTE** will appear in the bar for that track, and it will not play during playback.

To solo a track, press the same key a second time. The word **SOLO** will appear in the bar for that track, and all other tracks will be muted during playback. If you solo two or more tracks at once, you will hear the soloed tracks, but not any of the others.

To return a muted or soloed track to the normal **PLAY** status, press the ARRANGEMENT/STYLE key either two times or one time, respectively.
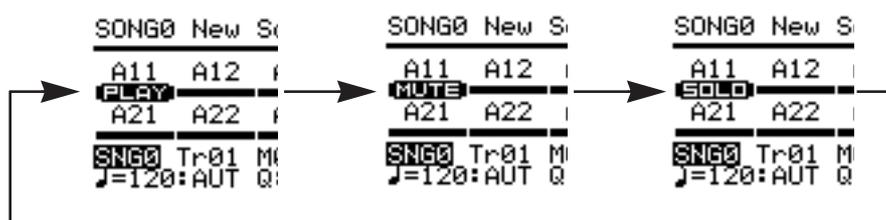
Song Pointers, Beat, and Record Mode

The parameters on the fifth line of the Song mode display let you change the current song and track selections, the current measure (also known as the *song location pointer*), the beat (or time signature), and the realtime recording method you will use to record new song data.

```
SONG0 New Song         ▶Record Mode

 A11   A12   A13   A14   A15   A16   A17   A18

 A21   A22   A23   A24   A25   A26   A27   A28

SNG0 Tr01 M001    4/4    AUTP:001→001
♩=120:MAN  Q:HI  M:OFF  PROGRAM

     A    B    C    D    E    F    G    H
```

Song, Track, and Measure → (label pointing to SNG0 Tr01 M001 line)

Beat (label pointing to D)
Record Mode (label pointing to E) · *Start Measure, End Measure* (labels pointing to F, G)
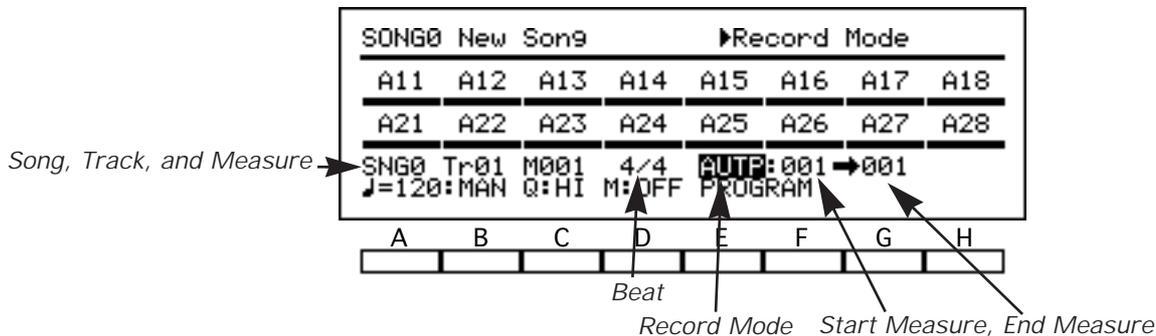
If you select autopunch or loop recording as the recording method, the *i2/i3* will display a pair of parameters that let you set the start and end points of the segment to be recorded. These parameters will appear at the end of the fifth display line.

Song   [0…9]

This setting selects the song to be played or recorded.

The number and name of the current song also appear in the upper left corner of the display. You can change the song's name using the Rename Song function described on page 114.

Track   [Tr1…Tr16, MULT]

This setting specifies the track to be recorded.

You should set this parameter to the number of a specific track when preparing to record from the keyboard. The keyboard will then play the program assigned to that track by the Program parameter described above. (If you have used the Channel parameter described on page 89 to assign other tracks to the same MIDI channel as the selected track, the keyboard will play their programs as well.)

You can set this parameter to **MULT** to record several tracks at once. The *i2/i3* will record incoming data for all tracks whose track activity bars are set to **REC**. The keyboard will play any tracks you have assigned to the Global channel using the Channel parameters described on page 89.

This technique is commonly used to record multiple tracks of sequence data transmitted from another MIDI sequencer.

Measure   [1…999]

This indicates the location at which recording or playback is set to begin. Each track can contain a maximum of 999 measures.

You can reset the measure pointer to **1** by pressing the RESET key. The *i2/i3* will reset this pointer automatically whenever it plays a song all the way to the end.

Beat   [1/4…16/16]

This setting sets the time signature for the currently selected measure.

Each time you begin recording a new song, the Beat parameter will reset to its default value of 4/4. When you press the REC/WRITE key to ready the *i2/i3* for recording, the digits of the time signature will be replaced by asterisks.

```
SONG0 New Song          ▶Song

A11  A12  A13  A14  A15  A16  A17  A18
REC
A21  A22  A23  A24  A25  A26  A27  A28

SNG0 Tr01 M001 **/** OVWR
♩=120:AUT Q:HI M:OFF PROGRAM


   A    B    C    D    E    F    G    H
```
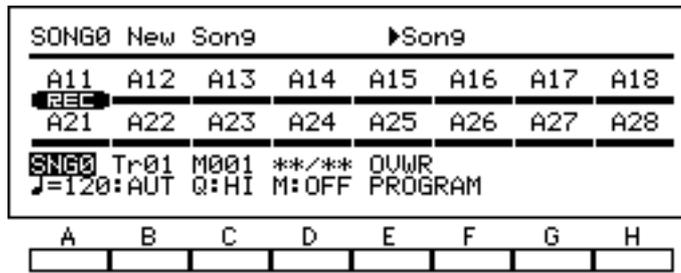
You can select a different time signature from the list below *before* you press START/STOP to begin recording. If you do not, the *i2/i3* will record in 4/4 time.

Base Resolution	Beat		
LOW (♩/48)	1/4 to 9/4	1/8 to 16/8	1/16 to 16/16
HIGH (♩/96)	1/4 to 5/4	1/8 to 10/8	

As this table shows, a wider selection of time signatures is available when you set the song's Base Resolution to **LOW (♩/48)**. See page 116 for details regarding the Base Resolution parameter.

☞ **Changing the time signature in a track**

If you want to change the time signature in the middle of a track, you must stop recording and adjust the Beat parameter as described above before you start again. The new time signature will take effect beginning with the measure where you start recording.

When you are adding tracks to a song, the *i2/i3* will record the new data using the same time signature as the existing tracks unless you change it before you begin recording. If the existing tracks change their time signature during the song, the new track will do so as well.

Be aware, however, that any changes in time signature will apply to *all* tracks that contain data. If you change the Beat parameter for one track, the *i2/i3* will truncate or expand each measure of data in the other tracks to match the new time signature, as shown below.

Rest inserted

Not played
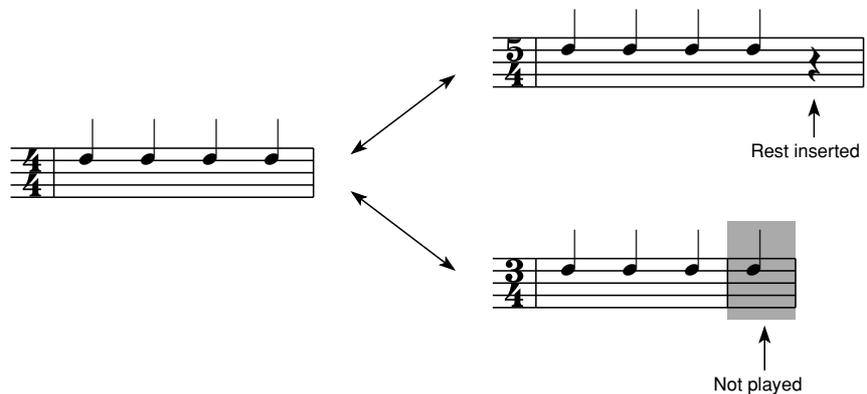
If you should accidentally truncate any measures by changing the beat parameter, don't worry: the *i2/i3* still has the data for the ends of those measures. Just re-record the new track using the old time signature—or change the time signature using the Event Edit function described on page 91—and the other tracks should return to normal.

It is not possible to change the Beat setting during playback.

Record Mode   [OVWR, OVDB, AUTP, MANP, LOOP]

This setting selects the realtime recording method you will use to record new song data. The *i2/i3* gives you five ways to record musical data in real time.

First, there are two straightforward recording methods. You can select the **OVWR** setting to overwrite previous track data, or use the **OVDB** setting to overdub new data on top of the old.

If you need to re-record one or more measures in the middle of a song, you can choose from one of two punch-in recording methods. Use **AUTP** if you want the *i2/i3* to punch in and out of record mode automatically, or **MANP** if you would prefer to do it manually.

Finally, you can use the **LOOP** setting to record one or more measures in a repeating loop, so you can add new note or control data each time.

Detailed procedures for the use of these recording methods may be found in Chapter 7 of the Player's Guide.

Start Measure   [0…999]

This setting is displayed only when you set the Record Mode setting to **AUTP** or **LOOP**. When you use autopunch or loop recording, the *i2/i3* will begin recording at the start of the measure you select here.

End Measure   [0…999]

This setting is displayed only when you set the Record Mode setting to **AUTP** or **LOOP**. When you use autopunch or loop recording, the *i2/i3* will stop recording at the end of the measure you select here.

To record only one measure, set this parameter to the same value as the Start Measure parameter.

Tempo and Recording Controls

The first two settings on the bottom line of Song mode Page 1 let you change the tempo, and record your tempo changes to a tempo track. You can use the remaining settings to change the quantize value used during realtime recording, turn the metronome on and off, and switch between the parameters displayed in the first four lines of the display.

Quantize value Metronome mode

```
SONG0 New Song        ▶ 99% Free

  A11  A12  A13  A14  A15  A16  A17  A18
  REC
  A21  A22  A23  A24  A25  A26  A27  A28

SNG0 Tr01 M001  4/4  LOOP:001→001
♩=120:AUT Q:HI M:OFF PROGRAM  [ADD] ERA

    A    B    C    D    E    F    G    H
```

Tempo   Tempo Track   Parameter Select   Buttons
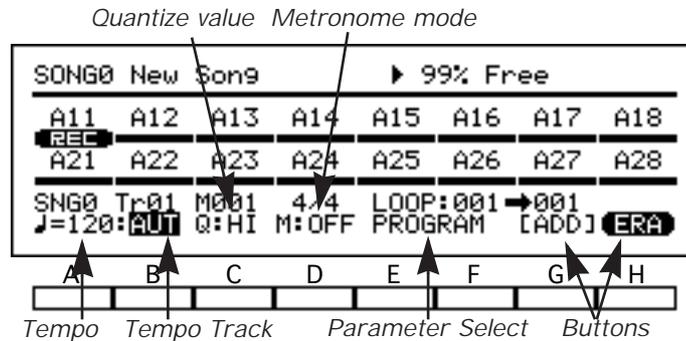
If you select the loop recording method using the Record Mode setting (see the preceding section), the *i2/i3* will display a pair of function buttons in the lower right corner of the display. These buttons, which let you erase notes from the range of measures being recorded, are explained in the description of the pattern recording method on page 77 of the Player's Guide.

Tempo   [40…240]

This adjusts the song's recording and playback tempo. You can set the tempo to any value between 40 and 240 beats per minute.

You may find it helpful to slow down the tempo while recording, then speed it up for playback. You can change the tempo as desired while recording. The *i2/i3* will not record tempo changes unless the Tempo Track parameter, described below, is set to **REC**.

☞ **External clock control**

The letters **EXT** will appear in place of a tempo when the Global mode Clock Source parameter is set to **EXT** (see page 212). This indicates that the *i2/i3* tempo is being controlled by MIDI clock messages from an external sequencer. You will not be able to change the tempo setting from the front panel while these letters are displayed.

Tempo Track   [MAN, AUT, REC]

This setting lets you create a tempo track to automatically control the song's tempo during playback. The tempo track is a seventeenth track of data, which exists independently of the sixteen tracks that we discussed in the preceding section.

To record tempo control data, begin by recording some or all of the tracks of your song. Then select an empty track for recording, being sure to set the Tempo Track parameter to **REC**, then move the cursor to the tempo parameter before you press the START/STOP key.

Use the VALUE dial to adjust the tempo as the song plays. The *i2/i3* will record any tempo changes you make to the tempo track. When you're done, you can use the Erase Track function described on page 92 to delete the empty track you "recorded" while creating the tempo track, to free any memory it occupies.

If you want the tempo track to control the tempo while you play back the song (or record new tracks), set this parameter to **AUT**.

If you want to adjust the tempo manually during playback or further recording, switch this parameter to **MAN**. The song will play at the tempo you set, ignoring any changes recorded by the tempo track.

You can edit the contents of the tempo track directly using the Event Edit function described on page 91.

Quantize [HI, ♪₃…♩]

The Quantize parameter sets the degree of accuracy to which the *i2/i3* will adjust the timing of data as you record it.

You should select **HI** for this setting when you want your recorded data to reproduce precisely the timing of the original performance. When you use this setting, the *i2/i3* will record data using the resolution specified by the Base Resolution parameter described on page 116.

Other settings will adjust the timing of all recorded data to the nearest interval specified by the setting. Thus, if you set this parameter to ♩, all of the notes you play will be recorded as quarter notes.

If you record pitch bends or other constantly changing control data with a rough quantization such as ♪ or ♩, the control change will produce an unnatural stepped sound when played back. To avoid this, record the data at the highest quantization, then use the Quantize function on Page 8 of the Song mode display to correct the timing of the note data alone. (See page 103 for details on the Quantize function.)

Metronome [OFF, ON, REC]

This setting determines when the *i2/i3* metronome will sound.

You can turn the metronome off by setting **OFF** for this parameter. If you switch it to **REC**, the metronome will sound during recording but not during playback. It will sound during both recording and playback when you use the **ON** setting.

☞ **More about the metronome**

The metronome decreases the simultaneous note capacity of the *i2/i3* by one note while it is playing.

You can set the metronome's volume and panning—as well as the number of lead-in measures it plays before the *i2/i3* begins recording—using the Metronome function (see page 115 of this manual for details).

Parameter Select

This setting selects the contents of the track data fields in the first and third lines of the display. You can change this setting using either the VALUE controls or the STYLE key to switch between the five parameters listed below. See pages 80 and 81 of this manual for a description of each setting.

Setting	Parameter	MIDI message
PROGRAM	Program	Program change
VOLUME	Volume	Control change 7
PANPOT	Panpot	Control change 10
C LEVEL	Effect Send Level C	Control change 91
D LEVEL	Effect Send Level D	Control change 93

If you edit these parameters while recording, the *i2/i3* will insert your changes in the currently selected track as the MIDI messages listed in the table above.

TRACK

Pages 2 and 3 of the Song mode display contain several track-related parameters. They let you select the output destination for track data and protect the track's contents. You can also transpose or detune each track, or adjust its pitch bend range.

Track Status
Track Protect
Transpose
Detune
Pitch Bend Range

```
SONG0 2:TRACK 1-8     ▶Track Status
TRK1 TRK2 TRK3 TRK4  TRK5 TRK6 TRK7 TRK8
BOTH BOTH BOTH BOTH  BOTH BOTH BOTH BOTH
OFF  OFF  OFF  OFF   OFF  OFF  OFF  OFF
T+00 T+00 T+00 T+00  T+00 T+00 T+00 T+00
D+00 D+00 D+00 D+00  D+00 D+00 D+00 D+00
PROG PROG PROG PROG  PROG PROG PROG PROG
  A    B    C    D    E    F    G    H
```

The settings for tracks 1 through 8 are found on Page 2, while those for tracks 9 through 16 are on Page 3. The contents of these two display pages are otherwise the same.

Track Status   [OFF, INT, EXT, BOTH]

These parameters determine whether the *i2/i3* will play or transmit data for the corresponding tracks during song playback.

When you set one of these parameters to **OFF**, the *i2/i3* will not play back the corresponding track at all. When you select **INT**, it will send the track's data to the internal tone generator, but it will not transmit it from the MIDI OUT jack.

You can select **EXT** when you want the *i2/i3* to transmit a track's data to an external tone generator without playing the data itself. Finally, the **BOTH** setting lets you send track data to both destinations. This is the normal setting for each track.

This setting also affects the transmission of notes you play on the *i2/i3* keyboard. When you select a track set to **OFF** or **INT**, the *i2/i3* will not transmit data for such notes from the MIDI OUT jack. If you select a track set to **EXT**, the *i2/i3* internal tone generator will not respond to keyboard control.

Track Protect   [OFF, ON]

These parameters let you protect your recorded track data.

When you turn one of them **ON**, the *i2/i3* will not let you record new note data, program changes, or volume changes to the corresponding track. Neither will it let you edit the track's current data using the Event Edit function described on page 91.

You will be able to adjust the track parameters on Page 1 of the Song mode display. However, because the *i2/i3* will not write these changes to memory, you can return the settings to their original values at any time by simply pressing the RESET key. The **ON** setting is thus useful when you want to try out program, volume, or panning changes before you actually record them.

This parameter is normally turned **OFF** to enable the recording and editing of song data.

Transpose (T)   [–24…+24]

These parameters let you transpose tracks up or down in steps of one semi-tone, to a maximum of two octaves. A setting of **0** produces the standard pitch for the selected program.

The relationship of these parameters to the Global mode Scale settings (see page 222), and their effect on data transmitted from the MIDI OUT jack, are determined by the Xpose Pos parameter (see page 211).

☞ **If a track won't play high notes…**

Since every multisound has an upper limit to its pitch range, some tracks may produce no sound if you transpose them up and play notes in the higher reaches of the keyboard.

Detune (D) [–50…+50]

These parameters adjust the pitch of corresponding tracks in one-cent steps, to a maximum of 50 cents (one-half semitone). They are most effectively used to detune two tracks playing in unison, for a thicker sound.

To achieve this effect, set the Channel parameter for two tracks to the same value, but record data on only one of these tracks (see page 89). Then adjust the Detune parameters for both tracks, raising one and lowering the other by the same amount. (If you detune only one track, the pair of tracks will produce an off-key sound.)

Pitch Bend Range (B) [–12…+12, PROG]

These parameters set the ranges in which the corresponding tracks will play or record pitch bend data.

The maximum setting of **12** will let you bend the pitch up or down one octave. Positive settings will cause the pitch to rise when you move the joystick to the right, and drop when you move it to the left. Negative settings will have the opposite effect.

These parameters are usually set to **PROG**, so that each track will use the pitch bend range settings for the selected program.

CH/WINDOW

Pages 4 and 5 of the Song mode display contain MIDI-related parameters for each track. The first of these selects the MIDI channel used by each track. The others are filters that let you combine two or more programs in a velocity-switch or split-keyboard setup.

Channel
Vel Window Top
Vel Window Bottom
Key Window Top
Key Window Bottom

```
SONG0 4:CH/WINDOW 1-8 ▶Channel
TRK1  TRK2  TRK3  TRK4  TRK5  TRK6  TRK7  TRK8
01    02    03    04    05    06    07    08
127   127   127   127   127   127   127   127
001   001   001   001   001   001   001   001
G9    G9    G9    G9    G9    G9    G9    G9
C-1   C-1   C-1   C-1   C-1   C-1   C-1   C-1

   A     B     C     D     E     F     G     H
```

The settings for tracks 1 through 8 are found on Page 4, while those for tracks 9 through 16 are on Page 5. The contents of these two display pages are otherwise the same.

Channel   [1…16]

These parameters set the MIDI channels for each track. The track will use this channel to receive MIDI data from the keyboard and the MIDI IN jack. It will transmit data on this channel as long as its Track Status parameter (see page 87) has been set to **EXT** or **BOTH**.

You can set two or more tracks to use a single MIDI channel. The tone generator will play, in unison, the programs assigned to all tracks set to this channel whenever you select one of the tracks for the Track parameter described on page 82. (It will also play all of the programs when it receives data for that channel via the MIDI IN jack.)

When you set the Track parameter to **MULT** for multichannel recording, the *i2/i3* will play the programs for all tracks assigned to the global channel. (A letter **G** will appear after the channel number for any such tracks. See page 213 for details on the global channel.)

You can also set two or more tracks to use the same MIDI channel, then divide your performance data between the tracks. You might find it convenient, for example, to record note data in one track, and control data such as volume changes and pitch bends in another.

Vel Window Top   [1…127]

These parameters set the highest velocities at which the corresponding tracks will play note data. You can use them together with the Vel Window Bottom parameters, described below, to combine tracks in a velocity-switch or velocity-layer arrangement.

For example, you might set the Vel Window Top parameter for one track to **100**, and the Vel Window Bottom parameter for another to **101**. The two tracks would play different programs—muted and picked guitar sounds, for example—but both would use the same MIDI channel (set by the Channel parameter described above.)

The first track would record all the data, playing only low-velocity notes, while the second would play the rest. The overall effect would be one of a guitarist switching between muted and open playing styles.

You can also overlap velocity windows to create layered effects. For example, you might set one track to play a string sound at all times, and another to add a touch of brass at higher velocities only.

☞ **Set these parameters from the keyboard**

You can set the velocity window parameters by playing notes at the desired velocities on the *i2/i3* keyboard while holding down the cursor key for the corresponding track.

Vel Window Bottom   [1…127]

These parameters set the lowest velocity at which the corresponding tracks will play note data. You can use them in combination with the Vel Window Top parameters, described above.

Key Window Top   [C–1…G9]

These parameters set the highest notes at which the corresponding tracks will play note data. You can use them together with the Key Window Bottom parameters, described below, to record and play data with keyboard-switched program changes.

The technique for using these parameters is similar to that described for the Vel Window Top parameters, above.

When you edit these parameters, the *i2/i3* will display a graphic of the key window for each track. To cancel this display, move the cursor to a different parameter.

☞ **Set these parameters from the keyboard**

You can set the key window parameters by playing the desired notes on the *i2/i3* keyboard while holding down the cursor key for the corresponding track.

Key Window Bottom   [C–1…G9]

These parameters set the lowest notes at which the corresponding tracks will play note data. You can use them in combination with the Key Window Top parameters, described above.

EDIT SONG

The sixth page of the Song mode display lets you record data in steps rather than in real time, and edit individual events within the song data you have recorded. This page also contains several utilities that you can use to erase, merge, or copy tracks, erase an entire song, or append one song to the end of another.

```
SONG0 6:EDIT SONG
▶Step Recording    Copy Track
 Event Edit        Erase Song
 Erase Track       Append Song
 Bounce Track
 Track01  Meas001  (REC + S/S to Start)
```
```
 A    B    C    D    E    F    G    H
```

Many of the functions on this page allow you to erase or change large sections of song data. Since you can undo these changes using the COMPARE key, the *i2/i3* will normally not ask for confirmation before carrying them out. (It will ask for confirmation if there is not enough memory to save the old data, however.)

Step Recording   *function*

The Step Recording function lets you enter note data one step at a time, specifying the length and velocity of each note. If you use this method to record any measures that already contain data, the old data will be replaced by the data you record.

To use this function, first select a track to record above cursor key A, and the measure where you want to start recording above key C. Then press REC/WRITE, followed by START/STOP. The *i2/i3* will switch to the display shown below.

```
SONG0 6:STEP REC      ▶Beat
 Track    = 5
 Measure  = 001
 Location = 1:00
   99% Free        —M001—Beat: 4/4 —
 4/4     ♩—   V064 085% RST         ◀
```
```
 A    B    C    D    E    F    G    H
```

You can use this display to record data in step time. When you are done recording, press the START/STOP key again to exit the Step Recording function.

Detailed instructions for the use of the Step Recording function may be found in Chapter 7 of the Player's Guide.

Event Edit   *function*

This function lets you modify the characteristics of individual musical events, such as notes or MIDI control changes. You can also use it to insert or delete events.

To use this function, select the track you want to edit above cursor key B. Then press the REC/WRITE key. The *i2/i3* will switch to an Event Filter display, which lets you select the types of events you will edit.

```
SONG0 6:EDIT SONG      ▶Note Data
 Step Recording     │ Copy Track
▶EV
 Er      Event Filter
 Bo  NOTE CTRL AFTT BEND PROG PAFT
     ENA  ENA  ENA  ENA  ENA  ENA
```

     A   B   C   D   E   F   G   H

When you are satisfied with your filter settings, press START/STOP to begin editing. The *i2/i3* will switch to the display shown below. Use this display to edit the events you have selected.

```
SONG0 TRACK06 EVENTS   ▶Measure

M001 #000 ===  BAR Beat: 4/4
M001 #001 1:03 E5   V114 1:01
M001 #002 2:00 AFTT 061
M001 #003 2:49 BEND +8191
M001 #004 3:12 PROG 000:004
M001 #005 4:04 CTRL C007 098
```

     A   B   C   D   E   F   G   H

When you are done editing, press the START/STOP key again to exit the Event Edit function.

Detailed instructions for the use of the Event Edit function may be found on page 83 of the Player's Guide.

Erase Track   *function*

This function erases all song data from an entire track.

```
SONG0 6:EDIT SONG

 Step Recording     │ Copy Track
 Event Edit         │ Erase Song
▶Erase Track        │ Append Song
 Bounce Track

 Track01                    (ERASE)
```

     A   B   C   D   E   F   G   H
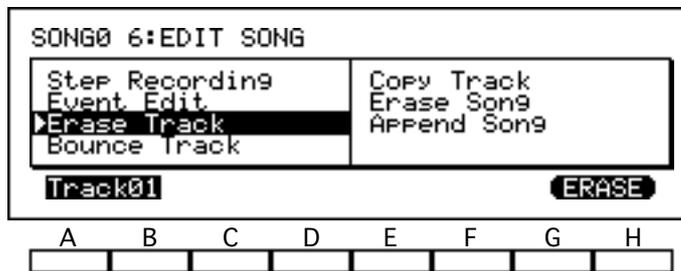
To use this function, select the number of the track you want to erase above cursor key B. Then select [ERASE]. The *i2/i3* will erase the track without asking for confirmation.

Bounce Track   *function*

This function merges the song data for one track with that of another. The resulting combined track will use the program assignment, MIDI channel, and other track settings for the destination track. All song data will be erased from the source track.

If both tracks contain pitch bends, damper changes, or other control change data, these data may create unexpected results when combined. You may want to use the Erase Measure function, described on page 96, to delete all control change data from one track or the other before combining them.

```
SONG0 6:EDIT SONG      ▶Source

 Step Recording    Copy Track
 Event Edit        Erase Song
 Erase Track       Append Song
▶Bounce Track

 Track02  ➡️  Track01        BOUNCE
```

	A	B	C	D	E	F	G	H
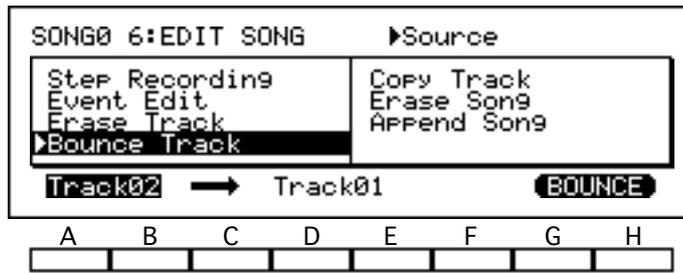
To use this function, select the source track above cursor key B, and the desti-
nation track above key D. When you have made your choices, select
[BOUNCE]. The *i2/i3* will combine the two tracks without asking for confirma-
tion.

☞ **Pattern assignments and the Bounce Track function**

If the *i2/i3* finds any pattern assignments in either track, it will ask for permis-
sion to expand the patterns into track data. If you refuse, it will display an er-
ror message and cancel the Bounce Track operation.

See the description of the Put/Copy Pattern function on page 100 for an expla-
nation of pattern assignments.

Copy Track   *function*

This operation copies song data from one track to another.

If the track you select as the destination already contains song data, the *i2/i3*
will replace this data with that from the source track. The data in the source
track will be unaffected.

```
SONG0 6:EDIT SONG      ▶Source

 Step Recording   ▶Copy Track
 Event Edit        Erase Song
 Erase Track       Append Song
 Bounce Track

 Track02  ➡️  Track01        COPY
```

	A	B	C	D	E	F	G	H
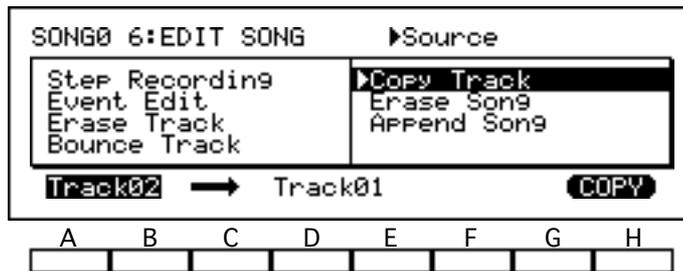
To use this function, select the track you want to copy above cursor key B, and
the destination track above cursor key D. When you have made your choices,
select [COPY]. The *i2/i3* will copy the track without asking for confirmation.

☞ **A quicker way to copy tracks**

The Copy Track function is most useful when you will edit the duplicate track
to create a variation, such as a harmony part. If you simply want two instru-
ments to play the same data in unison, however, you don't have to copy the
track. You can achieve the same effect at a smaller memory cost by adjusting
the Channel parameter of an empty track to the same value as that of the track
whose data you want it to play (see page 89).

Erase Song   *function*

This operation erases all data from the currently selected song. It does not
erase the data from any patterns assigned to this song, however.

```
SONG0 6:EDIT SONG
┌─────────────────────┬──────────────────┐
│ Step Recording      │ Copy Track       │
│ Event Edit          │▶Erase Song       │
│ Erase Track         │ Append Song      │
│ Bounce Track        │                  │
└─────────────────────┴──────────────────┘
 SONG0                            ⊂ERASE⊃
```
```
   A     B     C     D     E     F     G     H
 ┌────┬────┬────┬────┬────┬────┬────┬────┐
 └────┴────┴────┴────┴────┴────┴────┴────┘
```
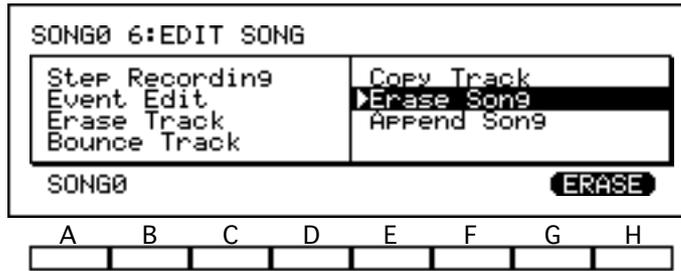
To use this function, just select [ERASE]. The *i2/i3* will erase the song without asking for confirmation.

Append Song *function*

This operation appends the data from a song you specify to the end of the currently selected song.

The resulting combined song will retain the current song's settings for the track parameters on Pages 2 through 5 of the Song mode display. The source song you select will be unaffected by this operation.

Before you use this function, you may want to make sure in advance that the currently selected song does not have any unneeded blank space at the end. If it does, you can remove it using the Delete Measure function (see page 95).

```
SONG0 6:EDIT SONG
┌─────────────────────┬──────────────────┐
│ Step Recording      │ Copy Track       │
│ Event Edit          │ Erase Song       │
│ Erase Track         │▶Append Song      │
│ Bounce Track        │                  │
└─────────────────────┴──────────────────┘
 ▐SONG0▌                         ⊂APPEND⊃
```
```
   A     B     C     D     E     F     G     H
 ┌────┬────┬────┬────┬────┬────┬────┬────┐
 └────┴────┴────┴────┴────┴────┴────┴────┘
```

When the song you're editing is ready to receive the new data, select the song you want to append above cursor key A. Then select [APPEND]. The *i2/i3* will append the song without asking for confirmation.

☞ **Base resolution mismatches**

It is not possible to append songs with different base resolutions. See page 116 for details on the Base Resolution parameter.

EDIT MEASURE

The functions on Page 7 of the Song mode display let you erase, insert, or copy track data in units of one or more measures. This page also contains the Put/Copy Pattern function, which lets you assign patterns for playing by one or more of your song's tracks.
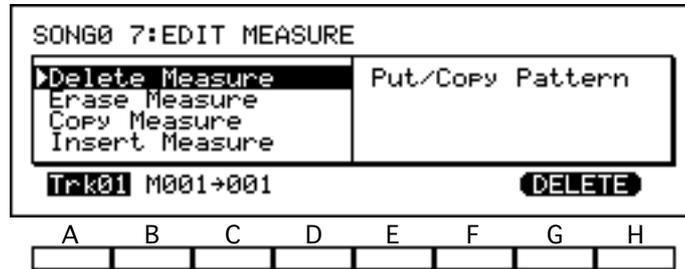
```
SONG0 7:EDIT MEASURE
▶Delete Measure        Put/Copy Pattern
 Erase Measure
 Copy Measure
 Insert Measure
 Trk01 M001→001              ▐DELETE▌
```

	A	B	C	D	E	F	G	H

When you select the range of measures to be affected by one of these functions, the *i2/i3* will display a graphic indicating the status of each track for 16 measures beginning with the first measure in the series.
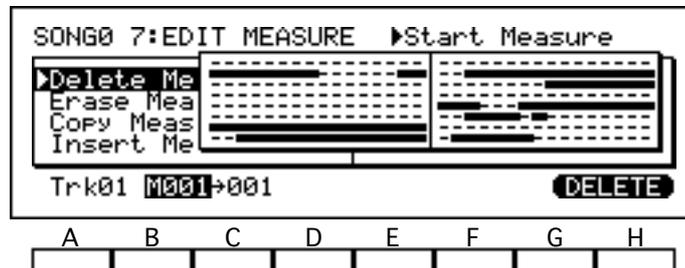
```
SONG0 7:EDIT MEASURE  ▶Start Measure
▶Delete Me
 Erase Mea
 Copy Meas
 Insert Me
 Trk01 M001→001              ▐DELETE▌
```

	A	B	C	D	E	F	G	H

The left half of this graphic shows tracks 1 through 8; the right half shows tracks 9 through 16. Measures that contain track data appear as black boxes, whereas those with pattern assignments are shown as white boxes. Empty measures appear as dashes.

If any of the measures you select contains a pattern assignment, the *i2/i3* may ask for permission to expand the pattern to track data so that it can apply the change to those measures as well. If you refuse permission, it will either apply the changes only to measures containing track data (ignoring those with pattern assignments), or cancel the operation altogether.

Many of the functions on this page allow you to erase or change large sections of song data. Since you can undo these changes using the COMPARE key, the *i2/i3* will normally not ask for confirmation before carrying them out. (It will ask for confirmation if there is not enough memory to save the old data, however.)

Delete Measure   *function*

This operation cuts one or more measures from the track you specify.

To use this function, first select a track above cursor key A. Choose **ALL** to cut measures from all tracks, including the tempo track.

Next, select the first and last measures to be deleted above keys B and C, respectively. (Set the same number for both to delete only one measure.) The *i2/i3* will show the status of each track for 16 measures beginning with whichever measure number is highlighted (above cursor key B or C).
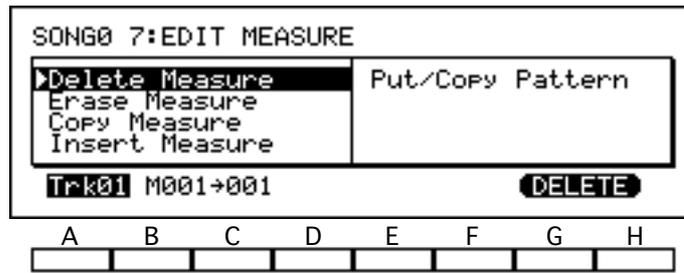
```
SONG0 7:EDIT MEASURE
▶Delete Measure        Put/Copy Pattern
 Erase Measure
 Copy Measure
 Insert Measure
 Trk01 M001→001                 DELETE
```

A	B	C	D	E	F	G	H

When you are sure of your choices, select [DELETE]. The *i2/i3* will delete the measures without asking for confirmation.

☞ **Pattern assignments and the Delete Measure function**

If the last measure to be deleted falls within a pattern assignment that continues in the next measure, the *i2/i3* will ask for permission to expand the patterns into track data. If you refuse, it will cancel the Delete Measure operation and display an error message.

Range of measures to edit

See the description of the Put/Copy Pattern function on page 100 for an explanation of pattern assignments.

☞ **If the song includes changes in time signature**

Any measures following the deleted measures will of course be moved forward. If you delete measures from one track only, the measures that are moved forward will use the same time signature as the corresponding measures of other tracks.

The renumbered measures may thus be truncated or expanded as a result of the deletion. (See the explanation of the Beat parameter for details.)

Erase Measure *function*

This operation erases some or all data from one or more measures.

To use this function, first select a track above cursor key A. Choose **ALL** to erase all tracks, including the tempo track. (If you want to erase data from the tempo track alone, use the Event Edit function described on page 91, or the Modify Contrl Data function described on page 107.)
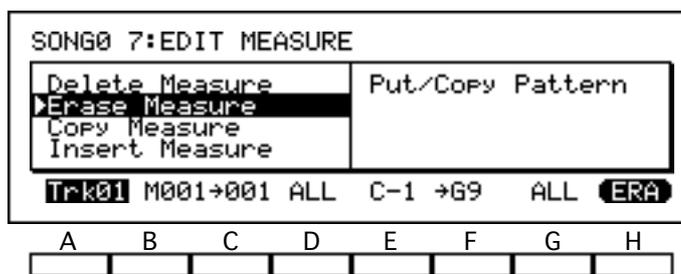
```
┌─────────────────────────────────────────────┐
│  SONG0 7:EDIT MEASURE                         │
│  ┌──────────────────────┬──────────────────┐ │
│  │ Delete Measure       │ Put/Copy Pattern │ │
│  │▶Erase Measure        │                  │ │
│  │ Copy Measure         │                  │ │
│  │ Insert Measure       │                  │ │
│  └──────────────────────┴──────────────────┘ │
│  ┌────┐                                  ┌───┐│
│  │Trk01│ M001→001 ALL  C-1 →G9   ALL  │ERA││
│  └────┘                                  └───┘│
└─────────────────────────────────────────────┘
        A    B    C    D    E    F    G    H
```

Next, set the first and last measures to be erased above keys B and C, respectively. (Set the same number for both to erase data from only one measure.) The *i2/i3* will show the status of each track for 16 measures beginning with whichever measure number is highlighted (above key B or C).

Finally, set the type of data to erase above key D. The table below lists your options.

Setting	Data erased
ALL	All data, including specified note range and control changes
NOTE	Note range specified above cursor keys E and F
CTRL	Control change messages specified above cursor key G
AFTT	All channel and polyphonic aftertouch messages
BEND	All pitch bend messages
PROG	All program change messages

If you select **ALL** or **NOTE**, you can use the Note Bottom and Note Top parameters above cursor keys E and F to specify a note range to be erased. Normally these parameters are set to **C–1** and **G9**, respectively, to erase all notes. You can change both parameters within this range to erase only a limited set of notes.

If you select **ALL** or **CTRL** above cursor key D, you can use the Control Number parameter above cursor key G to set the control change message type to be erased. Normally this parameter is set to **ALL** to erase all control changes. You can select a number from **0** to **127** to erase only messages with that number, leaving other control change messages intact. (See the table on page 88 of the Player's Guide for a list of control change numbers and their meanings.)

When you are sure of your choices, select [ERASE]. The *i2/i3* will erase the specified data from the measures you selected without asking for confirmation.

☞ **Pattern assignments and the Erase Measure function**

If the last measure to be erased falls within a pattern assignment that continues in the next measure, and you have selected **ALL** as the type of data to erase, the *i2/i3* will ask for permission to expand the pattern into track data. If you refuse, it will cancel the Erase Measure operation and display an error message.

Range of measures to edit

```
      ⌜────────────────────────⌝
┌──────┬──────┬──────┬──────┬──────┬──────┐
│      │      │   P a t│t e r n   │      │      │
└──────┴──────┴──────┴──────┴──────┴──────┘
```
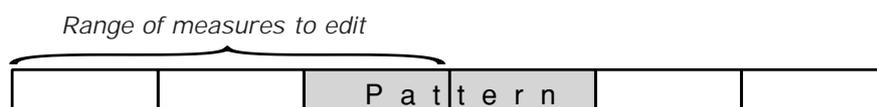
If the range of measures to be erased contains any pattern assignments, and you are trying to erase a data type other than **ALL**, the *i2/i3* will ask for permission to expand the pattern into track data. If you refuse, it will erase the specified data from all measures except those containing pattern assignments.
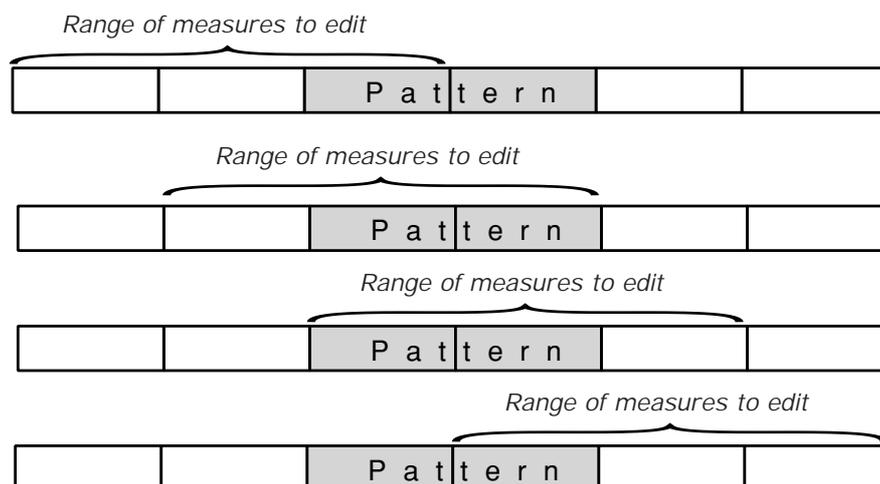
Range of measures to edit

		P a t	t e r n		

Range of measures to edit

		P a t	t e r n		

Range of measures to edit

		P a t	t e r n		

Range of measures to edit

		P a t	t e r n		

See the description of the Put/Copy Pattern function on page 100 for an explanation of pattern assignments.

☞ **Erasing control changes**

Some control changes—such as damper changes or pitch bends—may "stick" if you erase the messages that turn them off. If this happens, you should either erase the messages that are sticking, or use the Event Edit function (see page 91) to correct the data.

Copy Measure   *function*

This operation copies one or more measures, either within a track or between tracks.

To use this function, first specify the track containing the measures you want to copy above cursor key A. Choose **ALL** to copy the data from all tracks, including the tempo track. Then select the first and last measures to be copied above keys B, and C. (Set the same number for both to copy data from only one measure.)

```
SONG0 7:EDIT MEASURE   ▶Source

 Delete Measure      Put/Copy Pattern
 Erase Measure
▶Copy Measure
 Insert Measure

 Trk01 M001→001  ➡  Trk01 M001      (COPY)
```

A   B   C   D   E   F   G   H
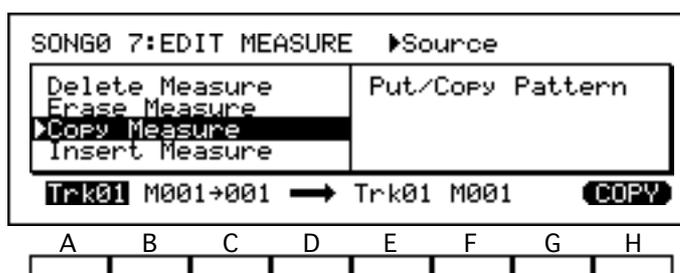
Next, select the destination track above key E. (The *i2/i3* will select the **ALL** setting automatically if you have selected **ALL** above cursor key A.) Finally, enter the number of the measure where the *i2/i3* should place the first of the duplicate measures above key F.

When you are sure of your choices, select [COPY]. The *i2/i3* will copy the data without asking for confirmation. If the destination measures already contain data, this data will be replaced by the copied measures.

☞ **Pattern assignments and the Copy Measure function**

If the first source measure continues a pattern assignment from the previous measure, or if the last destination measure already contains a pattern assignment that continues in the next measure, the *i2/i3* will ask for permission to expand the patterns into track data. If you refuse, it will cancel the Copy Measure operation and display an error message.

First source measure

		Pattern		

Last destination measure

		Pattern		

See the description of the Put/Copy Pattern function on page 100 for an explanation of pattern assignments.

☞ **If the song includes changes in time signature**

If tracks other than the destination track contain data for measures corresponding to the destination measures, the copied measures will use the same time signature as the other tracks.

Track 1

1 (4/4)	2 (4/4)	3 (4/4)	4 (7/8)	5 (7/8)

Track 2

1 (4/4)	2 (4/4)	3 (4/4)	4 (7/8)	5 (7/8)

The copied measures may thus be truncated or expanded as a result of the copy operation. (See the explanation of the Beat parameter for details.)

Insert Measure *function*

This operation lets you insert one or more measures into a track at a specified location.

To use this function, first select the track to receive the new measures above cursor key A. Choose **ALL** to insert measures in all tracks, including the tempo track.
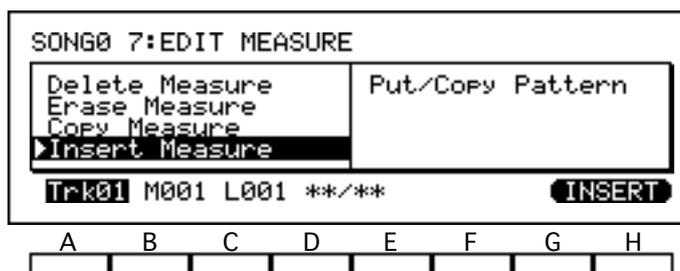
```
SONG0 7:EDIT MEASURE

 Delete Measure        Put/Copy Pattern
 Erase Measure
 Copy Measure
▶Insert Measure

 Trk01 M001 L001 **/**         ❪INSERT❫
```

A	B	C	D	E	F	G	H

Next, specify the number of the measure *before* which you want to insert the new measures above key B, and the number of new measures to insert above key C. You can also specify a time signature for the new measures above cursor key D—but see the note below.

When you have made your choices, select [INSERT]. The *i2/i3* will insert the new measures without asking for confirmation.

☞ **Pattern assignments and the Insert Measure function**

If you attempt to insert new measures between two measures which share a pattern assignment, the *i2/i3* will ask for permission to expand the pattern into track data. If you refuse, it will cancel the Insert Measure operation and display an error message.

Insert measure

		P a t	t e r n		

See the description of the Put/Copy Pattern function below, for an explanation of pattern assignments.

☞ **If the song includes changes in time signature**

If you select a new time signature above cursor key D, the corresponding measures of all tracks will be truncated or expanded to match this time signature.

Time signature = 7/8   *(above cursor key D)*

Track 2 before

1 (4/4)	2 (2/4)	3 (2/4)

Two new measures

Track 2 after

1 (4/4)	2 (7/8)	3 (7/8)	4 (4/4)	5 (3/4)

Track 1

1 (4/4)	2 (7/8)	3 (7/8)	4 (4/4)	5 (3/4)

Otherwise, the *i2/i3* will show ****/**** for this parameter, and the new measures will use the same time signature as the corresponding measures of other tracks that already contain data, or of the following measures if all other tracks are empty.

Time signature = **/**   *(above cursor key D)*

Track 2 before

1 (4/4)	2 (2/4)	3 (2/4)

Two new measures

Track 2 after

1 (4/4)	2 (2/4)	3 (2/4)	4 (4/4)	5 (3/4)

Track 1

1 (4/4)	2 (2/4)	3 (2/4)	4 (4/4)	5 (3/4)

Whether you select a new time signature or not, any measures following the inserted measures will be pushed back. If you insert measures to one track only, the measures that are pushed back will use the same time signature as the corresponding measures of other tracks, as shown in the illustrations above.

The renumbered measures may thus be truncated or expanded as a result of the insertion. (See the explanation of the Beat parameter for details.)

Put/Copy Pattern *function*

Once you have recorded a pattern using the functions on Page 9 of the Song mode display (see pages 108 through 112), you must use Put/Copy Pattern to either assign it or copy its data to a track.

When you *put* a pattern in a track, the track will contain no song data per se, only an instruction to play the assigned pattern. This instruction is known as a

pattern assignment. You may want to record oft-repeated phrases as patterns and then assign them to tracks to cut down on the amount of memory the song occupies.
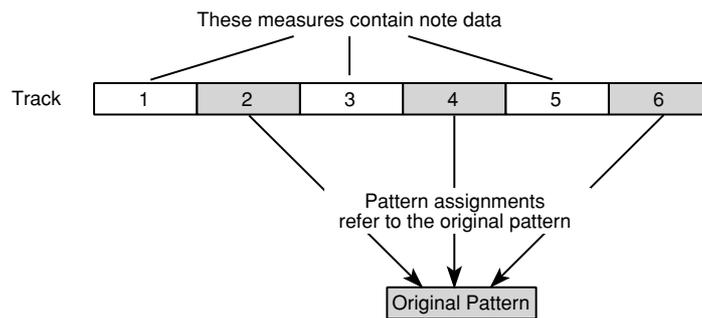
You should *copy* a pattern's data to a track only when you intend to edit the copied data to create a variation on the pattern. An example of this is given on page 78 of the Player's Guide.
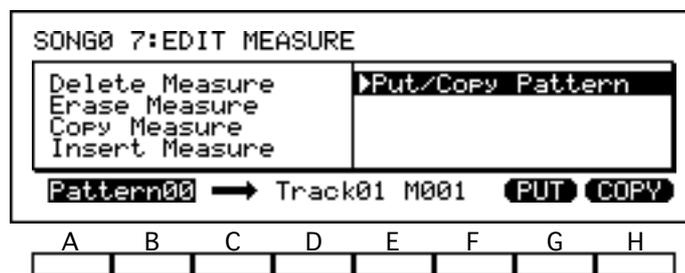
To use this function, first select the pattern that you want to put or copy above cursor keys A and B. Then set the destination track above key D. Finally, select the measure where the pattern will begin playing above key E.

When you are sure of your settings, select either [PUT] or [COPY]. The *i2/i3* will assign the pattern—or copy its data—without asking for confirmation. The measure setting above cursor key E will then advance by the number of measures in the pattern, so you can put or copy another pattern immediately after the first one.

☞ **Pattern assignments and the Put/Copy Pattern function**

You can replace old pattern assignments with this function as long as the old pattern assignment ends within the range of patterns to be occupied by the new pattern (or its data).

If the new pattern will end somewhere in the middle of an existing pattern assignment, however, the *i2/i3* will ask for permission to expand the old pattern into track data. If you refuse, it will cancel the Put/Copy Pattern operation and display an error message.
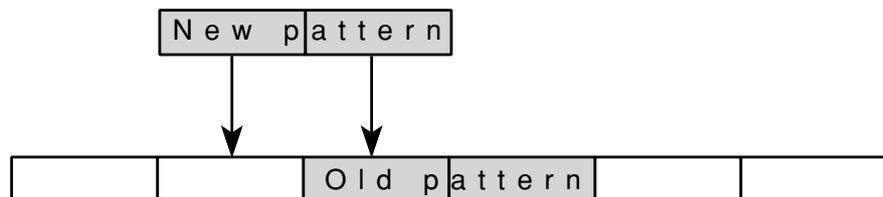
☞ **When the destination measures already contain data**

If you assign or copy a pattern to measures that already contain track data (or another pattern assignment), the old data for these measures will be replaced by the new data. The number of measures thus replaced will of course depend

on the length of the new pattern (see the Pattern Parameters function on page 110).

This operation will also erase all control changes—such as volume or panning messages—in the destination measures. If you want such control changes to affect the patterns, you should record them to another track and assign that track to the same MIDI channel as those playing the patterns.

☞ **Base resolution mismatches**

In principle, you should record patterns at the same base resolution as the songs that will play them. You can assign or copy patterns to a song with a different base resolution; keep in mind, however, that the *i2/i3* will modify the pattern data to match the song's base resolution.

See page 110 and 116 for details on the Base Resolution parameters for patterns and songs, respectively.

MODIFY MEASURE

Page 8 of the Song mode display lets you modify track data within a specified range of measures. You can correct the timing of recorded data, shift notes, transpose music to a different key, adjust note velocity and gate time, or add control changes, all in one quick operation.
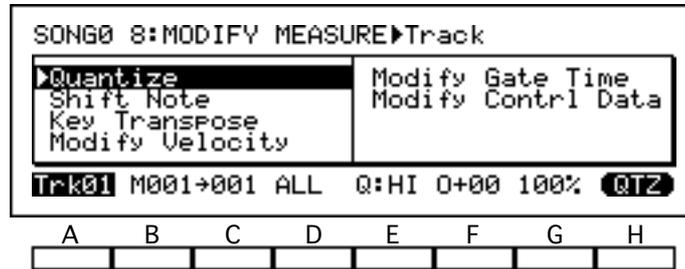
```
SONG0 8:MODIFY MEASURE▶Track
▶Quantize            Modify Gate Time
 Shift Note          Modify Contrl Data
 Key Transpose
 Modify Velocity
 Trk01 M001→001 ALL  Q:HI 0+00 100% QTZ
```

A	B	C	D	E	F	G	H

When you select the range of measures to be affected by one of these functions, the *i2/i3* will display a graphic indicating the status of each track for 16 measures starting with the first measure in the series.
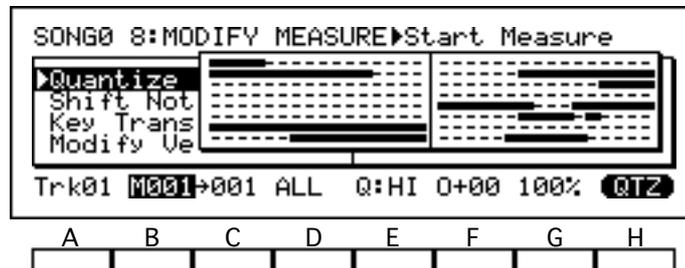
```
SONG0 8:MODIFY MEASURE▶Start Measure
▶Quantize
 Shift Not
 Key Trans
 Modify Ve
 Trk01 M001→001 ALL  Q:HI 0+00 100% QTZ
```

A	B	C	D	E	F	G	H

The left half of this graphic shows tracks 1 through 8; the right half shows tracks 9 through 16. Measures that contain track data appear as black boxes, whereas those with pattern assignments are shown as white boxes. Empty measures appear as dashes.

If any of the measures you select contain a pattern assignment, the *i2/i3* may ask for permission to expand the pattern to track data so that it can apply the change to those measures as well. If you refuse permission, it will apply the changes only to measures containing track data, ignoring those with pattern assignments.

Many of the functions on this page allow you to change large sections of song data at once. Since you can undo these changes using the COMPARE key, the *i2/i3* will normally not ask for confirmation before carrying them out. (It will ask for confirmation if there is not enough memory to save the old data, however.)

Quantize   *function*

You can use the Quantize function to adjust the timing of data you have already recorded.

This function is more flexible than the Quantize parameter on Page 1 of Song mode (see page 86) in that it lets you select a range of measures or a data type to quantize, leaving other measures or data types unaffected. You can also use the COMPARE key to undo the quantization if you are dissatisfied with the results.

To use this function, first set the track to be quantized above cursor key A. (Select **TEMP** to quantize the tempo track.) Then set the first and last measures to be quantized above keys B and C.

If you have selected any track other than the tempo track, you can specify the type of data to be quantized above key D. The table below lists your options.

Setting	Data quantized
ALL	All data
NOTE	All notes
CTRL	All control change messages
AFTT	All channel and polyphonic aftertouch messages
BEND	All pitch bend messages
PROG	All program change messages

Finally, set the Quantize, Offset, and Intensity parameters above keys E, F, and G. The Quantize parameter is the same as that used in realtime recording. (See page 86 for details.)

The Offset parameter shifts the quantizing grid away from the note value specified by the resolution. You can set this parameter from **–96** to **+96**, to move the grid either backward or forward by so many pulses per quarter note. Hence, a setting of +96 will shift the grid forward one whole quarter note. (The same range of values is used for a song whose Base Resolution parameter [see page 116] is set to **LOW (♩/48)**.)

The Intensity parameter sets the effectiveness of the quantize function as a percentage. It is normally set to **100**, to move events all the way to the quantizing grid. You could set this parameter to **50**, for example, to move each event only halfway from its recorded position to the grid. Setting it to **0** will disable the Quantize function.

When you are sure of your choices, select [QTZ]. The *i2/i3* will quantize the data you have specified without asking for confirmation.

Shift Note   function

This operation shifts notes up or down. You can use it to transpose either a specified range of notes, or all notes.

```
SONG0 8:MODIFY MEASURE

 Quantize               Modify Gate Time
▶Shift Note             Modify Contrl Data
 Key Transpose
 Modify Velocity

Trk01 M001→001   C-1 →G9    Shift=+00 SFT
```

A	B	C	D	E	F	G	H

To use this function, first set the track whose notes you want to shift above cursor key A. Then set the first and last measures to be affected above keys B and C.

Next, use the Note Range Bottom and Top parameters above keys D and E to specify the range of notes to be shifted. Normally these parameters are set to **C–1** and **G9**, respectively, to shift all notes. You can change both parameters within this range to shift only a limited set of notes.

(You can set these parameters by playing the desired notes on the *i2/i3* keyboard while holding down the cursor key for each.)

Finally, set the number of semitones by which the notes will be shifted above key G. You can shift notes up or down a maximum of two octaves.

When you have made your choices, select [SFT]. The *i2/i3* will shift the notes without asking for confirmation.

Key Transpose   *function*

This operation transposes the key of the music data in a specified range of measures.

```
SONG0 8:MODIFY MEASURE

 Quantize               Modify Gate Time
 Shift Note             Modify Contrl Data
▶Key Transpose
 Modify Velocity

Trk01 M001→001  Cmaj →Cmaj    TRANSPOSE
```

A	B	C	D	E	F	G	H

To use this function, first set the track whose key you want to transpose above cursor key A. Then set the first and last measures to be affected above keys B and C.

Next, set the current key of the music in the selected measures above cursor key D, and the key you want to transpose it to above key E. You can select any major or minor key for both of these parameters.

(You can set the note portion of the key name for these parameters by playing the desired notes on the *i2/i3* keyboard while holding down the cursor key for each.)

When you have made your choices, select [TRANSPOSE]. The *i2/i3* will transpose the music without asking for confirmation.

Modify Velocity   *function*

This operation modifies the velocity of notes in a specified range of measures by adjusting them to a curve that specifies how note velocity will change over time during those measures.

```
SONG0 8:MODIFY MEASURE

 Quantize          Modify Gate Time
 Shift Note        Modify Contrl Data
 Key Transpose
▶Modify Velocity

Trk01 M001→001 V=002→126 100% Cv1   MDF
```

A	B	C	D	E	F	G	H
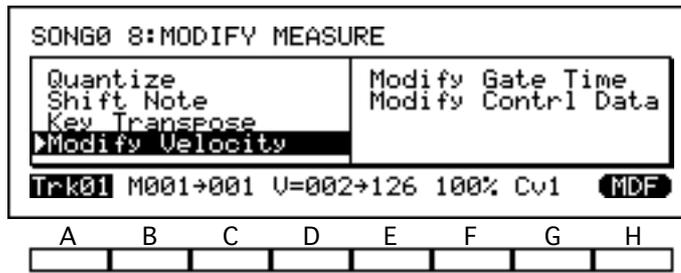
To use this function, first set the track whose velocities you want to modify above cursor key A. Then set the first and last measures to be affected above keys B and C.

Next, set a target velocity for the first measure above key D, and one for the last measure above key E. (You can set these parameters by playing notes at the desired velocities on the *i2/i3* keyboard while holding down the cursor key for each.)

Select a curve to connect these two velocities above cursor key G.

Finally, set the intensity of the velocity modification above key F. This percentage setting determines how closely the current velocities will be modified toward the curve. When the Intensity parameter is set to **100**, the velocities will be fit precisely along the curve. When the Intensity is **0**, the *i2/i3* will not modify the current velocities.

When you have made your choices, select [MDF]. The *i2/i3* will modify the velocities without asking for confirmation.

Modify Gate Time   *function*

This operation modifies the gate times of notes in a specified range of measures.

```
SONG0 8:MODIFY MEASURE

 Quantize          ▶Modify Gate Time
 Shift Note         Modify Contrl Data
 Key Transpose
 Modify Velocity

 Trk01 M001→001 EXPAND  150%    (MODIFY)
```

```
   A     B     C     D     E     F     G     H
```
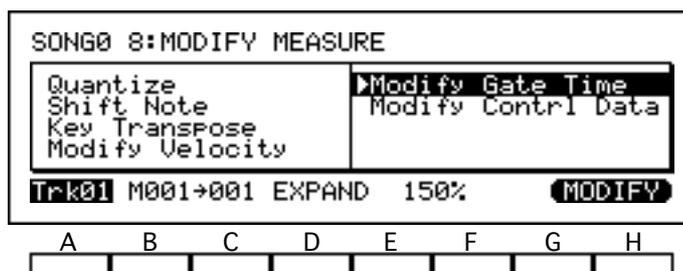
To use this function, first set the track whose gate times you want to modify above cursor key A. Then set the first and last measures to be affected above keys B and C.

Next, set the Expand/Slur parameter above key D to determine how the gate times will be affected. If you select **EXPAND**, the *i2/i3* will expand or contract notes to a percentage of their current length. You can set the intensity of expansion from **1%** to **200%** above cursor key E.

If you select **SLUR** above key D, the *i2/i3* will expand the gate times of each note in the selected range of measures so that it continues playing until the next note starts.

When you have made your choices, select [MODIFY]. The *i2/i3* will modify the gate times without asking for confirmation.

Modify Contrl Data   *function*

This operation creates, erases, or modifies a specified control change within a specified range of measures. You can use it to add pitch bends, crescendos and decrescendos, and other control effects to music you have already recorded

```
SONG0 8:MODIFY MEASURE▶Track

 Quantize           Modify Gate Time
 Shift Note         ▶Modify Contrl Data
 Key Transpose
 Modify Velocity

 Trk01 M001 1:00→M001 1:00 C000=000 (MDF)
```

```
   A     B     C     D     E     F     G     H
```
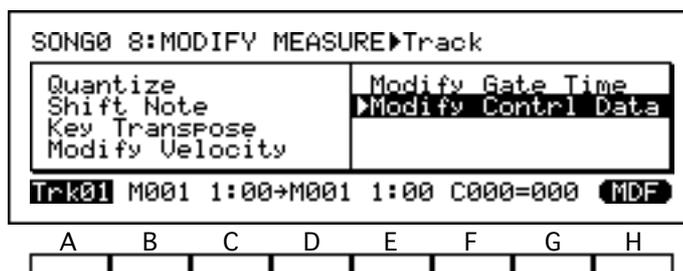
To use this function, first set the track you want to modify above cursor key A. (Select **TEMPO** to modify the tempo track.) Then set the measure and location where the change will begin above keys B and C, and those where it will end above keys D and E. (The location in each case consists of numbers representing the beat and pulse, separated by a colon.)

Next, set the type of control change you want to modify above key F. Select **BEND** for pitch bends, **AFTT** for aftertouch, or a control change number from **0** to **102** for other control changes.

Finally, set the end value for the change above cursor key G. When you execute the change, the *i2/i3* will add data so that the controller will change gradually from the level at the start location (keys B and C) to this level at the end location (keys D and E). These levels will appear in the upper right corner of the display, in place of a parameter name.

If you have selected **BEND** above key F, you can set an end value from **–8192** to **+8191**. If you have selected **AFTT** or any other control number, you can set an end value between **0** and **127**. If you selected the tempo track above key A, you can set a tempo between **40** and **240**.

You can also set the end value for any controller to **ERA**. This will cause the *i2/i3* to erase all control changes of the selected type between the start and end points.

When you have made your choices, select [MDF]. The *i2/i3* will modify the control data without asking for confirmation.

PATTERN

The *i2/i3* helps you save song memory by letting you record oft-repeated phrases just once, as patterns, and then place them into song tracks. The functions on Page 9 of the Song mode display let you record and edit patterns. You can put the patterns you create here in song tracks using the Put/Copy Pattern function described on page 100.

```
SONG0 9:PATTERN

▶Realtime Recording   Erase Pattern
 Step Recording       Get From Track
 Event Edit           Bounce Pattern
 Pattern Parameters   Copy Pattern

Pattern00 ♩=120 M-- Q:HI M:OFF
```

```
   A    B    C    D    E    F    G    H
```
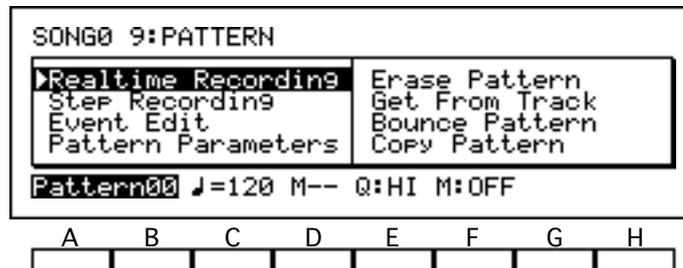
The *i2/i3* can hold up to 100 patterns, each as many as 99 measures long. The patterns occupy the same 40,000 steps' worth of sequence memory as the songs and backing sequences you record, and so are limited by available memory in the same way. This is not much of an inconvenience, however, as judicious use of patterns can drastically reduce the amount of memory your songs require.

Realtime Recording

The Realtime Recording function on this display page lets you record patterns in real time, using the pattern recording method.

Before you create a new pattern, you should be sure to set its length and time signature using the Pattern Parameters function described on page 110.

If you use this method to record to a pattern that already contains data, the new data will be added to the old. If you want to replace the old data, you should use the Erase Pattern function described on page 110 to remove its contents before you begin.

To use this function, first select the pattern you want to record above cursor keys A and B. Then set the tempo, the input quantizing resolution, and the metronome mode above keys C, E, and F. The details of these parameters are the same as described for the realtime recording function on Page 1 of Song mode (see page 85 and 86).

When you are ready to start recording, press REC/WRITE, followed by START/STOP. As the *i2/i3* records, it will display the number of the current measure above cursor key D. It will play the pattern data you record using the program assigned to the track currently selected on Page 1 of the Song mode display. (See the description of the Track parameter on page 82).

When you are done recording, you can exit the Realtime Recording function by pressing the START/STOP key again.

Detailed instructions for the use of the pattern recording method may be found on page 76 of the Player's Guide.

☞ **Control data in patterns**

You can record control changes such as pitch bend or damper pedal data in a pattern. However, be careful to return the controllers to their normal position before the end of the pattern, to prevent them from "sticking" when the pattern ends.

Also, remember that overdubbing the same control change repeatedly over several passes can result in unnatural effects.

Step Recording

The Step Recording function on this display page lets you enter pattern data one step at a time, specifying the length and velocity of each note. In a sense, it combines the track data Step Recording function described on page 91 with the overdub recording method described on page 84.

Before you create a new pattern, you should set its length and time signature using the Pattern Parameters function described on page 110. If you use this method to record a pattern that already contains data, the new data will be added to the old. (You will not be able to hear the old data, however.)

To use this function, first select the pattern you want to record above cursor keys A and B. Then press REC/WRITE, followed by START/STOP. The *i2/i3* will switch to the display shown below.

```
SONG0 9:STEP REC      ▶Beat

 Pattern  = 00
 Measure  = 01
 Location = 1:00
   99% Free          —M001—Beat: 4/4 —

   4/4     ♩-      V064 085%  RST          ◀
```
```
     A     B     C     D     E     F     G     H
```

You can use this display to record in step time. The *i2/i3* will play the notes you hit using the program assigned to the track currently selected on Page 1 of the Song mode display. (See the description of the Track parameter on page 82.)

When you reach the end of the pattern, the *i2/i3* will return to the first measure and continue recording, much as described for the pattern recording method. The data of each pass will be overdubbed on top of the previous data.

When you are done recording, you can exit the Step Recording function by pressing the START/STOP key again.

Detailed instructions for the use of the Step Recording function may be found on page 92 of the Player's Guide.

Event Edit   *function*

This function lets you modify the characteristics of a pattern's musical events, such as notes or MIDI control changes. You can also use it to insert or delete events.

To use this function, select the pattern you want to edit above cursor keys A and B. Then press the REC/WRITE key. The *i2/i3* will switch to an Event Filter display, which lets you select the types of events you will edit.

```
SONG0 9:PATTERN       ▶Note Data

 Realtime Recording │ Erase Pattern
 St
▶EV        Event Filter
 Pa  NOTE  CTRL  AFTT  BEND  PROG  PAFT
     ENA   ENA   ENA   ENA   ENA   ENA
```
```
     A     B     C     D     E     F     G     H
```

When you are satisfied with your filter settings, press START/STOP to begin editing. The *i2/i3* will switch to the display shown below. Use this display to edit the events you have selected.

```
┌─────────────────────────────────────────┐
│ PATTERN00 EVENTS      ▶Measure          │
│─────────────────────────────────────────│
│ M001 #000 ═══  BAR Beat: 4/4            │
│ M001 #001 1:48 G3    V112 0:22          │
│ M001 #002 1:72 D4    V112 0:18          │
│ M001 #003 2:00 D#4   V112 0:16          │
│ M001 #004 2:24 C4    V112 2:72          │
│ M001 #005 2:72 CTRL C011 127            │
└─────────────────────────────────────────┘
    A    B    C    D    E    F    G    H
  ┌────┬────┬────┬────┬────┬────┬────┬────┐
  └────┴────┴────┴────┴────┴────┴────┴────┘
```

When you are done editing, press the START/STOP key again to exit the Event Edit function.

Detailed instructions for the use of the Event Edit function may be found on page 83 of the Player's Guide.

Pattern Parameters   *function*

This function is actually a collection of parameters that determine the time signature, base resolution, and length of a pattern.

To use this function, first select the pattern whose parameters you want to edit above cursor keys A and B. You can then set that pattern's time signature above key C, its base resolution above keys D and E, and its length in measures above keys F and G.

The details of the time signature setting are the same as described for the Beat parameter on Page 1 of Song mode (see page 82), with one exception: you cannot change the time signature while recording in the middle of a pattern, because the pattern's measure counter will reset when you stop recording. If you want a pattern to contain time signature changes, you must insert them using the Event Edit function described above.

The Base Resolution parameter corresponds to that which you set for songs on Page 11 of this mode (see page 116).

☞ **Editing patterns that have already been assigned**

If you select a pattern that has already been assigned to a track, the *i2/i3* will inform you of this fact.

```
┌─────────────────────────────────────────┐
│ SONG0 9:PATTERN                          │
│─────────────────────────────────────────│
│ Realtime Recordin│Pattern00 used in:    │
│ Step Recording   │S0 T1..4.....I0...... │
│ Event Edit       │                      │
│▶Pattern Parameter│                      │
│─────────────────────────────────────────│
│ Pattern00  4/4  Reso:HIGH Length01 SET  │
└─────────────────────────────────────────┘
    A    B    C    D    E    F    G    H
  ┌────┬────┬────┬────┬────┬────┬────┬────┐
  └────┴────┴────┴────┴────┴────┴────┴────┘
```
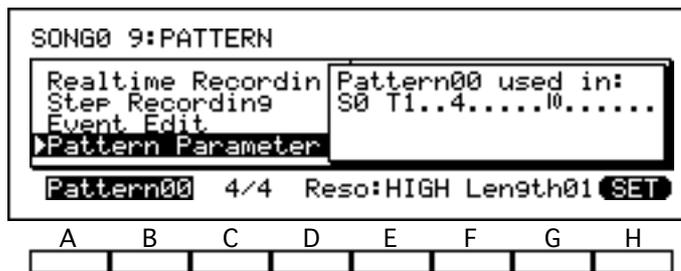
You can edit the pattern's parameters, if you wish—but remember that any tracks that use the pattern may not play back correctly.

☞ **Base resolution mismatches**

In principle, you should record patterns at the same base resolution as the songs that will play them. You can record patterns at a resolution other than that of the song that will use them, if you wish; keep in mind, however, that the *i2/i3* will modify the pattern data to match the song's base resolution.

Erase Pattern   *function*

This function erases all data from a selected pattern. It does not change the pattern settings made with the Pattern Parameters function, described above.

```
SONG0 9:PATTERN
  ┌─────────────────────────────────────────────┐
  │ Realtime Recording │▶Erase Pattern           │
  │ Step Recording     │ Get From Track          │
  │ Event Edit         │ Bounce Pattern          │
  │ Pattern Parameters │ Copy Pattern            │
  │ Pattern00                         ⟨ERASE⟩    │
  └─────────────────────────────────────────────┘
     A    B    C    D    E    F    G    H
```
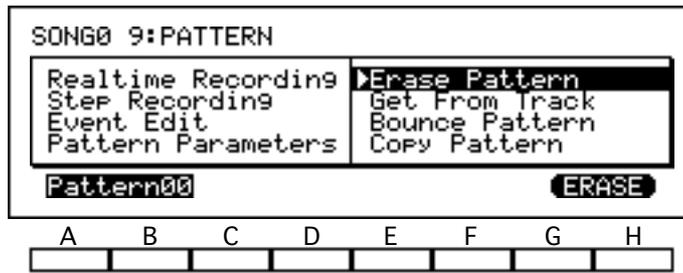
To use this function, select the number of the pattern you want to erase above
cursor keys A and B. Then select [ERASE]. The *i2/i3* will erase the pattern with-
out asking for confirmation.

☞ **Editing patterns that have already been assigned**

If you select a pattern that has already been assigned to a track, the *i2/i3* will
inform you of this fact.

```
SONG0 9:PATTERN
  ┌───────────────────────┬─────────────────────┐
  │ Pattern00 used in:    │ rase Pattern        │
  │ S0 T1..4.....10......  │ et From Track       │
  │                       │ ounce Pattern       │
  │                       │ opy Pattern         │
  │ Pattern00                         ⟨ERASE⟩    │
  └─────────────────────────────────────────────┘
     A    B    C    D    E    F    G    H
```
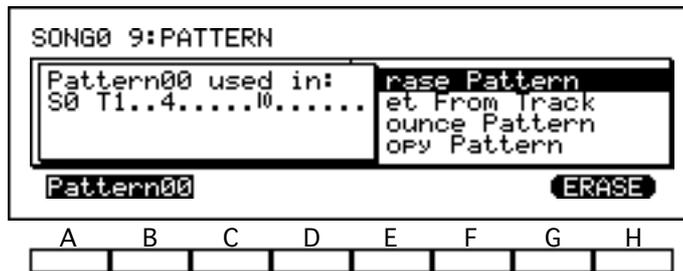
If you erase the pattern, the tracks that use it may not play back correctly.

Get From Track   *function*

This operation copies data from a track into a pattern, so you can assign this
data to other measures in a song.

This function also makes it possible to edit patterns using functions such as
Quantize, Key Transpose, and Modify Contrl Data, that are not normally
available for them. Just copy a pattern's data to an empty track using the
Put/Copy Pattern function described on page 100, then edit the data, and copy
the data back to a pattern using Get From Track.

Before you use this function to create a new pattern, you should be sure to set
its length using the Pattern Parameters function described on page 110. The
pattern will copy this many measures from the song. (It will adopt the time sig-
nature and base resolution of the source track, however.)

If you use this method to copy to a pattern that already contains data, the old
data will be replaced by the data you copy from the track.

```
SONG0 9:PATTERN          ▶S0 AKI
  ┌─────────────────────────────────────────────┐
  │ Realtime Recording │ Erase Pattern           │
  │ Step Recording     │▶Get From Track          │
  │ Event Edit         │ Bounce Pattern          │
  │ Pattern Parameters │ Copy Pattern            │
  │ Song0 Trk10 M001 ➡ Pattern00      ⟨GET⟩      │
  └─────────────────────────────────────────────┘
     A    B    C    D    E    F    G    H
```
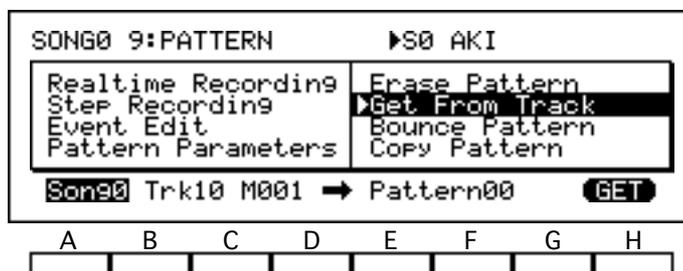
To use this function, first select the numbers of the song and track whose data
you want to copy above cursor keys A and B. Then set the first measure to be
copied above key C. Finally, select the pattern to receive the track data above
cursor keys E and F.

When you are sure of your choices, select [GET]. The *i2/i3* will copy the track
data to a pattern without asking for confirmation.

☞ **Pattern assignments and the Get From Track function**

If the *i2/i3* finds any pattern assignments in the track measures selected for copying, it will ask for permission to expand the patterns into track data. If you refuse, it will display an error message and cancel the Get From Track operation.

See the description of the Put/Copy Pattern function on page 100 for an explanation of pattern assignments.

Bounce Pattern   *function*

This function merges the data of one pattern with that of another. The resulting combined pattern will retain the time signature, resolution, and length set for the destination pattern by the Pattern Parameters function (see page 110). All data will be erased from the source pattern.

If both patterns contain pitch bends, damper changes, or other control change data, these data may create unexpected results when combined. You may want to use the Event Edit function, described above, to delete control change data from one pattern or the other before combining them.

```
SONG0 9:PATTERN

Realtime Recording  │ Erase Pattern
Step Recording      │ Get From Track
Event Edit          │▶Bounce Pattern
Pattern Parameters  │ Copy Pattern

 Pattern01  ➡ Pattern00            (BOUNCE)
```

```
  A    B    C    D    E    F    G    H
┌────┬────┬────┬────┬────┬────┬────┬────┐
└────┴────┴────┴────┴────┴────┴────┴────┘
```
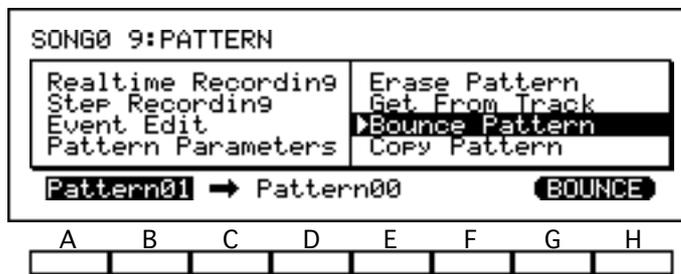
To use this function, select the source pattern above cursor keys A and B, and the destination pattern above keys D and E. When you have made your choices, select [BOUNCE]. The *i2/i3* will combine the two patterns without asking for confirmation.

Copy Pattern   *function*

This operation copies data from one pattern to another. If the pattern you select as the destination already contains data, the *i2/i3* will replace this data with that from the source pattern.

The copied pattern will have the same time signature, base resolution, and length as those you set for the source pattern using the Pattern Parameters function described above (see page 110).

```
SONG0 9:PATTERN

Realtime Recording  │ Erase Pattern
Step Recording      │ Get From Track
Event Edit          │ Bounce Pattern
Pattern Parameters  │▶Copy Pattern

 Pattern01  ➡ Pattern00            (COPY)
```

```
  A    B    C    D    E    F    G    H
┌────┬────┬────┬────┬────┬────┬────┬────┐
└────┴────┴────┴────┴────┴────┴────┴────┘
```
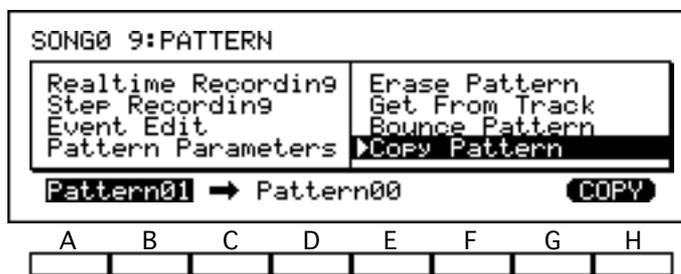
To use this function, select the pattern you want to copy above cursor keys A and B, and the destination pattern above cursor keys C and D. When you have made your choices, select [COPY]. The *i2/i3* will copy the track without asking for confirmation.

EFFECT

Page 10 of the Song mode display lets you use two digital signal processors to apply effects to each song you create. Since both processors can apply two effects simultaneously, you can apply a variety of different effects to the programs playing the song.

```
SONG0 10:EFFECT       ▶Effect Type

FX1 19:Chorus 1      :OFF Mod:NONE    I+00
 D010 S0.30 M60   TRI     L+00 H+00 →60:40

FX2 01:Hall          :OFF Mod:NONE    I+00
 3.2 D060 E62   HD30      L-04 H+00 →75:25
[PARALLEL3] FX1:L5    R5    FX2:L5      R5
```

```
  A    B    C    D    E    F    G    H
```

All of the programs played by your song will use the effect settings you make on this page. You should be aware, however, that the effect settings you select in Song mode may differ from those assigned to the programs in Edit Program mode. Hence, if you use Program mode to audition programs before using them in a song, you may find that some of them—those that use less common effect settings—will fail to produce the sound you expect when the song plays.

The simplest way around this would be to audition programs in Song mode, after first selecting the song's effects. If you find this limiting, however, you may want to try a more involved approach. You could audition the sounds in Program mode, then try to create an effect setup— using dual effects, if necessary—that reproduces as many of the programs' individual effects as possible.

As a third alternative, you could take a course similar to that followed by many recording engineers. First, audition the programs without any effects at all, selecting them for their raw sound qualities. Then, with the signal processors still turned off, go ahead and record the song. Finally, when all the tracks are ready, add the effects in gradually to create a customized effects setup that brings out the best features of each program.

Because the EFFECT page in Song mode presents you with the same effect options as the Arrangement Play, Backing Sequence, and Edit Program modes, the contents of this page are described in their own chapter. Please refer to Chapter 7 for details on the effect settings.

You can call up the EFFECT page to edit effect parameters while a song is playing by pressing the PAGE+ key.

UTILITY

The final page of the Song mode display contains utility functions that let you name your song and change other special song parameters. Also, two effect-related functions make it easy to copy or swap effect settings.

```
SONG0 11:UTILITY
▸Next Song          Copy/Swap FX
 Rename Song        Base Resolution
 Metronome
 Copy All Effects

 Next:OFF                Auto Start:ON
```

A	B	C	D	E	F	G	H
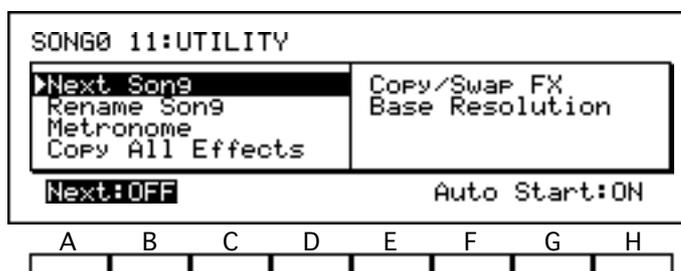
There is no need to "execute" the Next Song, Rename Song, or Metronome functions, as these functions are actually nothing more than special parameters. The *i2/i3* will record their settings, together with all song data and the parameters on the other pages of the Song mode display, when you save the song to disk using the Save All Data or Save All Song functions in Disk mode (see page 240).

Next Song   *function*

This function lets you specify a song to be selected—and played—when the currently selected song ends.

This function is actually a pair of parameters. The Next parameter (cursor keys A through E) identifies the number of the song—**S0** through **S9**—that you want the *i2/i3* to select when it's done playing the current song. (The name of each song will be displayed next to its number.) If you set this parameter to **OFF**, the current song will remain selected.

The Auto Start parameter (keys F, G, or H) tells the *i2/i3* whether it should start playing the specified song when the current song ends. If you set this parameter to **OFF**, the *i2/i3* will select the next song, but it will not play it back. If you set it to **ON**, the *i2/i3* will begin playback automatically (unless the Next parameter is turned off, in which case it will simply end playback).

This function lets you set a *chain* of songs that will play automatically. To create a continuous *loop* of songs, just set the last song's Next parameter to the number of the first song in the chain, and turn the Auto Start parameter **ON** for all the songs. For example, if you want the loop to repeat songs 0 through 9, set song 9's Next parameter to **S0**.

Rename Song   *function*

You can use this function—which is actually a special parameter—to change the name of the song you're editing. The song name can consist of up to ten characters.

```
SONG0 11:UTILITY
 Next Song          Copy/Swap FX
▸Rename Song        Base Resolution
 Metronome
 Copy All Effects

 SONG0 New Song      INS  DEL  ◂  ▸
```

A	B	C	D	E	F	G	H
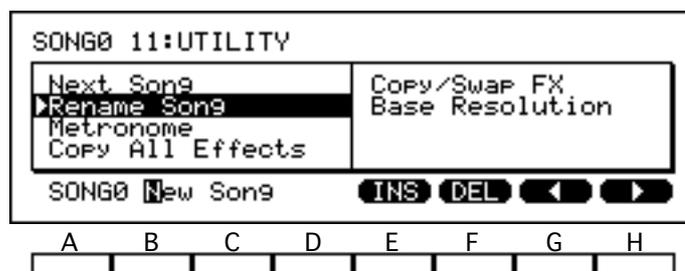
When you select the Rename Song function, the current song name will appear on the bottom line of the display, above cursor keys B and C. Change this to the desired song name as described on page 33 of the Player's Guide.

Metronome ⸻ *function*

This function contains three parameters that let you specify how the metronome will perform while recording and playing the song you are editing.

The Lead-In parameter (cursor key A or B) sets the number of measures the metronome will count off before the *i2/i3* starts recording whenever you record in realtime. You can specify a lead-in of **0**, **1**, or **2** measures.

The Level parameter (cursor key C or D) lets you set the volume of the metronome sound. Setting this parameter to **0** will make the metronome inaudible (although it will still use up one note of the *i2/i3*'s polyphonic capacity). The highest setting of **99** will raise the volume to maximum.

The Pan parameter (cursor key E or F) lets you select the channels that will output the metronome. The first three settings (**L**, **CNT**, and **R**) let you pan the metronome to the left, center, or right on the stereo channels (A and B). The second three settings (**C**, **C+D**, and **D**) do the same for effect send channels C and D. If you select **ALL**, the *i2/i3* will output the metronome through all four channels.

The metronome will be affected by the *i2/i3* signal processors in the manner specified by your EFFECTS page settings. If your effect selections make the metronome difficult to hear, you can use the Pan parameter to select an unprocessed channel for metronome output. (See Chapter 7 for details on signal routing and other effects parameters.)

☞ **More about the metronome**

The metronome decreases the simultaneous note capacity of the *i2/i3* by one note while it is playing. You can specify when the metronome should play using the Metronome parameter on Page 1 of the Song mode display (see page 86 for details).

Copy All Effects ⸻ *function*

This function copies all the effect parameters from a program, an arrangement, a backing sequence, or another song, into the song you are editing.

To use this function, first select the type of data from whose effect parameters you want to copy. Then press E and select the number of the arrangement, backing sequence, song, or program in question.
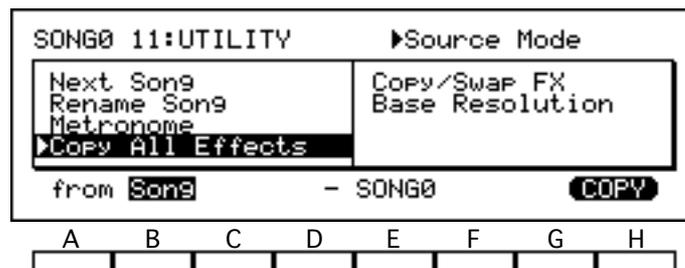
When you have made your choices, select [COPY]. The *i2/i3* will copy the data you selected to the current song after asking for confirmation.

Copy/Swap FX ⸻ *function*

This function copies or exchanges the parameter values of the two effect selections for the song you're editing.

To use this function, first select the direction in which you will be copying effect data. A one-headed arrow pointing in either direction will result in two effects with exactly the same settings. When the arrow points in both directions, the function will swap the data for Effect 1 with that for Effect 2.

```
SONG0 11:UTILITY       ▶Direction
  Next Song           ▶Copy/Swap FX
  Rename Song           Base Resolution
  Metronome
  Copy All Effects
  FX1 ➡ FX2                   (COPY)
```

	A	B	C	D	E	F	G	H
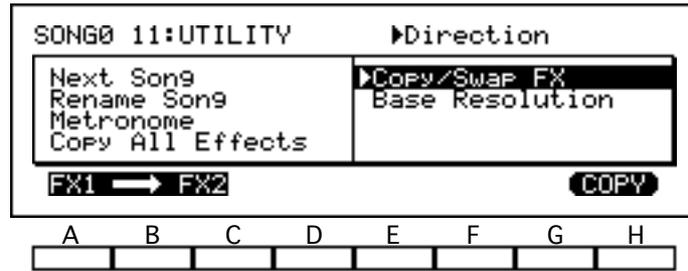
When you are sure of your choice, select [COPY] or [SWAP]. The *i2/i3* will copy or swap the data after asking for confirmation.

Base Resolution   *function*

This parameter specifies the maximum degree of precision to which the *i2/i3* can quantize musical data for the current song. You can set the *i2/i3* to use either low or high resolution.

When you set this parameter to **LOW (♩/48)**, the *i2/i3* will quantize data to a maximum resolution of 48 pulses per quarter note (PPQN). The **HIGH (♩/96)** setting doubles the resolution, for a maximum resolution of 96 PPQN.

The *i2/i3* will quantize at this resolution whenever you select **HI** as the Quantize setting for realtime recording (see page 86) or for the Quantize function (see page 103).

When you use the Event Edit function (see page 91), the *i2/i3* will advance the location setting in one-pulse steps if the base resolution is set to **HIGH (♩/96)**, but in steps of two pulses when it is set to **LOW (♩/48)**.

The **HIGH (♩/96)** setting thus gives you the advantages of the *i2/i3*'s highest resolution. However, it also reduces the time signature options available through the Beat parameter (see page 82). We recommend that you use the **HIGH (♩/96)** setting unless you need one of the time signatures made available by the lower resolution.

☞ **This setting is permanent!**

Once you have recorded data for a song, you cannot change that song's Base Resolution setting unless you erase the entire song using the Erase Song function described on page 93.

Chapter 5
Program Mode

This mode lets you select *programs* (individual sounds) to play on the *i2/i3* keyboard. The *i2/i3* internal memory contains four banks of 64 programs each, plus a fifth bank containing eight drum programs. You will find a complete listing of these programs in the Performance Notes that accompanied this manual.

You can use the TRANSPOSE and OCTAVE keys on the front panel to alter the pitch of any program you play in Program mode. Please see page 35 of the Player's Guide for details on the use of these keys.

Program mode has a *Performance Editing* function that makes it easy to change some of the more important parameters of the program you're playing. This function is described in detail on pages 119 through 120. You can also use the *Write* function, described on page 120, to save any changes you make. (To change any parameters that are not available through Performance Editing, you should edit the program using the Edit Program mode described in Chapter 6.)

Finally, Program mode has a *Recall* function that lets you recall the data for the last program you edited in Edit Program mode. This function will come in handy if you should return from Edit Program mode to Program mode and select a different program without first saving your edited data. The Recall function is described in detail on page 120.

Program Mode

A display like the one below will appear when you press the PROG key. While this display is showing, you can use the VALUE keys to select a program to play on the *i2/i3* keyboard. You must also use this display to select a program that you wish to edit in Edit Program mode.

Program ——→

```
PROG:A11 Piano              XPOSE:0

  ┼    ┼    ┼    ┼    ┼    ┼    ┼    ┼

 Oct   Fc  FcEG Atk  Rel  VDA  VelS  FX
 O+00 F+00 I+00 A+00 R+00 L+00 V+00 E+00
```
←—— *Performance Editing settings*

```
  A    B    C    D    E    F    G    H
```
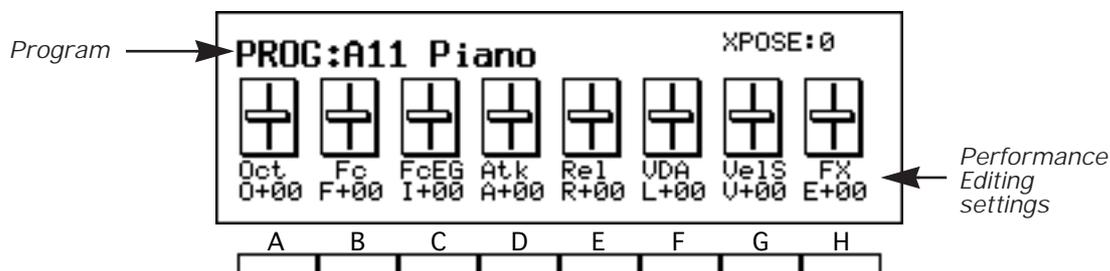
The bottom line of the Program mode display contains the *Performance Editing settings* for the selected program. You can edit any of these settings by pressing the corresponding cursor key. The Performance Editing function is described in detail in the next section.

Program   [A11…D88, Dr1…Dr8]

The number and name of the selected program appear at the top of the display. The *i2/i3* internal memory contains the five program banks shown in the table below.

Bank	Programs	Comments
A	64	General MIDI programs 1–64 (ROM)
B	64	General MIDI programs 65–128 (ROM)
C	64	Preset *i2/i3* programs (ROM)
D	64	User programs (RAM)
Dr	8	Drum programs (1–6 ROM, 7–8 RAM)

Press the bank keys to switch between program banks. Use the VALUE controls to select the next or previous program within a bank, or enter the number of a desired program using the PROGRAM keys.

☞ **Other ways to select programs…**

You can change the program selection using a footswitch, one of the pedals on an EC5 External Controller, or MIDI program change messages. All of these program change methods are enabled by Global mode settings.

To use a footswitch, set the Assignable Pedal parameter for the jack you will use to either **PROGRAM UP** or **PROGRAM DOWN** (see page 215). If you have an EC5, select one of the same settings for the appropriate Switch parameter (see page 220).

If you want the *i2/i3* to recognize MIDI program change messages, be sure the MIDI Filter Program Change parameter is set to **ENA** (see page 214).

Performance Editing

The *i2/i3* Performance Editing feature lets you adjust some of the more important program parameters without leaving Program mode. The ability to change program parameters quickly and easily can come in handy during practice sessions and live performances.

Program parameters

Performance Editing settings
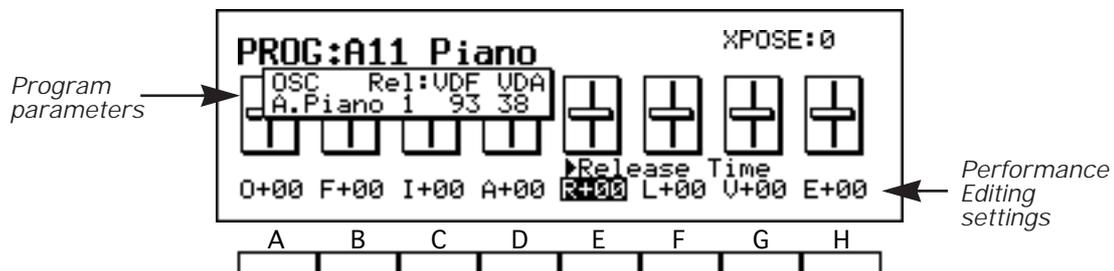
The *i2/i3* shows the Performance Editing settings both graphically, as sliders, and as values from –10 to +10. Each setting changes one or more parameters for both oscillators (except for the Dry:FX Balance setting, which is not oscillator-specific). The names and current values of the affected parameters will appear in the display as soon as you select a setting.

To use the Performance Editing function, press the cursor key under the setting you wish to adjust. Then use the VALUE dial or the VALUE keys to move the slider for this setting up or down. Press the ▲ or ▼ key to return to the Program mode display when you're done.

You may move a Performance Editing slider to its minimum or maximum position and find that you would like to raise or lower it still further. If this happens, press the EDIT PROG key followed the PROG key. This will reset the Performance Editing sliders to their center positions without affecting your earlier adjustments, giving you an additional ten steps' range. Just select the setting again and continue moving the slider up or down.

Octave (Oct)

This setting changes the octave in which the program plays by adjusting the Octave parameters (see page 124 and 126) for both oscillators. It raises or lowers the program one octave with each step. (The name of the multisound played by each oscillator is also displayed for reference.)

VDF Cutoff (Fc)

This adjusts the program's tone by changing the VDF Cutoff parameters (see page 130) for both oscillators. It raises or lowers the values of these parameters five points with each step. (The VDF EG Intensity parameters are also displayed, for reference.)

VDF EG Intensity (FcEG)

This setting adjusts how the program's tone changes over time by changing the VDF EG Intensity parameters (see page 130) for both oscillators. It raises or lowers the values of these parameters three points with each step. (The VDF Cutoff parameters are also displayed, for reference.)

Attack Time (Atk)

This adjusts the length of the program's attack by changing the VDA Attack Time parameters (see page 142) for both oscillators. It raises or lowers the values of these parameters five points with each step.

Release Time (Rel)

This adjusts the program's release rate by raising the VDF and VDA Release Time parameters (see page 135 and 143) for both oscillators. It raises or lowers the values of these parameters five points with each step.

VDA Level (VDA)

This setting adjusts the program's overall volume by changing the VDA Level parameters (see page 124 and 126) for both oscillators. It raises or lowers the values of these parameters by five points with each step.

Velocity Sensitivity (VelS)

This setting adjusts the degree to which the program's sound will be affected by note velocity. It does so by changing the VDF and VDA Velocity Sensitivity parameters (see page 133 and 140) for both oscillators. It raises or lowers the values of these parameters five points with each step.

Dry:FX Balance (FX)

This setting adjusts the balance between the program's unprocessed (dry) and processed (wet) sounds by changing the Balance parameters (see Chapter 7) for both effects. It raises or lowers the values of these parameters by five points with each step.

Write *function*

Once you have changed a program's parameters using the Performance Editing feature, you may want to store your changes for future use. To do so, press the REC/WRITE key. The *i2/i3* will prompt you to confirm the Write operation. Press E or F to store your changes, or G or H if you change your mind.

☞ **User programs only!**

You can only use this function to store user programs (that is, the programs in bank D or drum programs 7 and 8). If you edit a ROM program, or if you want to store your changes in a different location to preserve the original data, then you should enter Edit Program mode and store them to a RAM program number using the Write Program function described on page 152.

☞ **When the program memory is protected…**

This function will not work if the Program Protect parameter in Global mode has been set to ON. See page 219 for details on the Program Protect parameter.

Recall *function*

You can press the COMPARE key while in Program mode to recall the data for a program you have created in Edit Program mode. This will not change the current program selection; the data you edited will replace that of the program number you have selected.

Let us say, for example, that you have just created a piano sound in Edit Program mode, then switched to Program mode and selected a program number containing a brass sound. If you press the COMPARE key at this point, the piano sound will replace the brass sound as the data for the program number you selected.

☞ **Be sure to save recalled data!**

Any data that you recall in this way will be lost as soon as you select a new program number, unless you first store it using either the Write function described above, or the Write Program function described on page 152. Also, the Recall function works just once: when you press the COMPARE key to recall edited data, the edit buffer is cleared and the data cannot be recalled again.

Chapter 6
Edit Program Mode

This is the mode you will use to change program parameters such as waveform selections and EG settings. To edit a program, you must first select it in Program mode. (You can also use Program mode's Performance Editing feature, described on page 119, to quickly change some of a program's more important parameters without leaving Program mode.)

The Edit Program mode has a total of nine display pages, whose functions are summarized in the table on the following page of this manual. You can switch through these pages using the PAGE+ and PAGE– keys, or by pressing the DATA ENTRY key corresponding to the number of the desired page while holding down the EDIT PROG key.

The general procedures for editing parameters and using utility functions are outlined in Chapter 3 of the Player's Guide. Specific applications for some of the functions in this mode may be found in Chapters 5 and 6 of that manual.

While editing, you can press the COMPARE key to hear the original program as it sounded before you made any changes. You can then begin editing the program from scratch once again, or press COMPARE a second time—without editing—to return to the data you've already edited.

When you've finished editing your program, you should use the *Write Program* function described on page 152 to store your changes in the *i2/i3* memory. (If you are editing a user program in bank D, you can save your changes to the current program number by simply pressing the REC/WRITE key.)

If you return to Program mode and select another program before storing the one you've edited, you can use the *Recall* function, described on page 120, to retrieve your edited data. Once you switch back to Edit Program mode and begin editing the newly selected program, however, all of your previously edited data will be lost.

Functions in Edit Program Mode

The table below shows the layout of the *i2/i3* Edit Program mode. For each display page we list the page title, a brief outline of the page's contents, and the numbers of the pages in this manual where you will find these contents described.

Page	Title	Contents	Description
1	OSCILLATOR	Program type and mode settings	123
		Basic parameters for OSC1	124–125
		Basic parameters for OSC2	126–127
		Pitch EG parameters	128–129
2	VDF1	Basic filter settings for OSC1	130
		VDF1 keyboard tracking	131–132
		VDF1 velocity sensitivity	133–134
		VDF1 EG parameters	135–136
3	VDF2	Basic filter settings for OSC2	Same as above (VDF1)
		VDF2 keyboard tracking	
		VDF2 velocity sensitivity	
		VDF2 EG parameters	
4	VDA1	Amplifier settings for OSC1	137
		VDA1 keyboard tracking	138–139
		VDA1 velocity sensitivity	140–141
		VDA1 EG parameters	142–143
5	VDA2	Amplifier settings for OSC2	Same as above (VDA1)
		VDA2 keyboard tracking	
		VDA2 velocity sensitivity	
		VDA2 EG parameters	
6	PITCH MG	Pitch modulation parameters	144–145
7	VDF MG/JS	Filter modulation parameters	147–148
		Joystick and aftertouch parameters	149
8	EFFECTS	Effect parameters and placement	Chapter 7
9	UTILITY	Write Program	152
		Rename Program	152
		Copy All Effects	153
		Copy/Swap FX	153
		Copy/Swap OSC	153
		Initialize Program	154

Please note that parameters for OSC2, VDF2, and VDA2 are only available for double-oscillator programs. The *i2/i3* will not display OSC2-related parameters, nor will it let you select the VDF2 and VDA2 display pages, when editing a single-oscillator or drum program.

OSCILLATOR

Page 1 of the Edit Program display lets you select a basic program type—that is, whether the program will use a single oscillator, two oscillators, or a drum kit. In addition, you can specify whether the program will hold notes even after note off messages are received, and whether it will play monophonically or polyphonically.

Program settings — PROG C11 1:OSCILLATOR
OSC1 parameters — Double Oscillator Hold Off Polyphonic / 000:A.Piano 1 L31 8' PEG+00 Pan=L06 / C=0 D=0
OSC2 parameters — 012:PianoPad 2 L24 8' PEG+00 Pan=R06 / Intvl=+00 Detune=-03 Delay=00 C=0 D=0
Pitch EG parameters — S+00 AT00 A+00 DT00 RT00 R+00 L+00 T+00
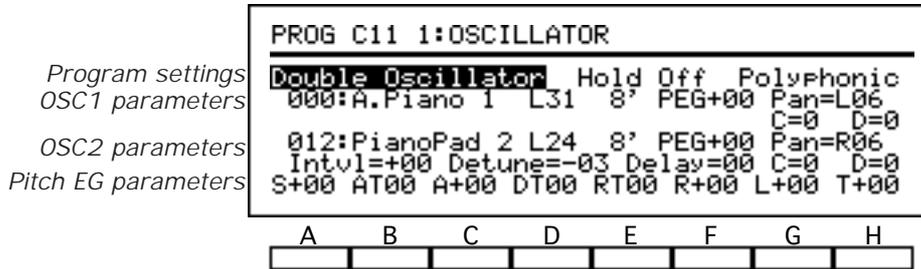
This display page also contains oscillator-specific settings. Parameters for OSC1 are described on page 124, and those for OSC2 on page 126. Finally, the bottom row of this display page contains the program's *Pitch EG* parameters, which are described on page 128.

Program Type   [Single Oscillator, Double Oscillator, Drums]

This setting determines the program's basic structure. When it is set to **Single Oscillator**, the program will use only one oscillator. You will be able to play up to 32 simultaneous notes with the program.

When **Double Oscillator** is selected, the program will use two oscillators. This allows you to create more complex sounds, but it also limits the program to a maximum of only 16 simultaneous notes. Parameters pertaining to Oscillator 2 will appear in the display only when this type is selected.

When **Drums** is selected, you will be able to assign a drum kit instead of a multisound to the program's oscillator. (See the description of the Multisound/Drum Kit parameter, below, for details.)

Hold   [On, Off]

This parameter determines whether *note off* messages (such as those generated when you release a key on the *i2/i3* keyboard) will end notes played using the program. When it is set to **Hold On**, notes will continue sounding even after the keys are released. This is useful mainly when playing drum sounds.

You should use the **Hold Off** setting for most programs. If you turn the hold parameter on and set the VDA EG Sustain Level parameter (see page 143) to any value other than **0**, the notes played by the program will never end!

Assign Mode   [Monophonic, Polyphonic]

This determines how many notes the program can play at once in response to note messages received on a single MIDI channel. When set to **Monophonic**, the program will play only one note at a time. When set to **Polyphonic**, it will play chords.

OSC1

The parameters on the second and third lines of the OSCILLATOR page let you select the waveform played by OSC1, and make other settings related to this oscillator.

OSC1 parameters

```
PROG C11 1:OSCILLATOR

Double Oscillator  Hold Off  Polyphonic
 000:A.Piano 1 L31  8'  PEG+00 Pan=L06
                              C=0   D=0
 012:PianoPad 2 L24  8'  PEG+00 Pan=R06
 Intvl=+00 Detune=-03 Delay=00 C=0  D=0
S+00 AT00 A+00 DT00 RT00 R+00 L+00 T+00
```

```
  A    B    C    D    E    F    G    H
┌────┬────┬────┬────┬────┬────┬────┬────┐
└────┴────┴────┴────┴────┴────┴────┴────┘
```

Most of these settings will be available regardless of the program type you've selected. Please note, however, that "Drum Kit" will be displayed as the name of the first parameter, and the Panpot parameter will not appear at all, if you've chosen **Drums** as the program type.

Multisound (or Drum Kit)   [variable]

This parameter selects the basic waveform played by OSC1. The name and number of the multisound will be displayed. (Multisounds whose names are accompanied by the abbreviation "NT" will always play at the same pitch for any note.)

You will find a complete list of the available multisounds in the Performance Notes that accompanied this manual.

☞ **If you are editing a drum program…**

If the Program Type parameter has been set to **Drums**, the words "Drum Kit" will appear as the name of this parameter, and you will be able to select a drum kit instead of a multisound. Drum programs use the drum sound assignments and pan settings for the selected drum kit. Other details are handled as for single-oscillator programs. (Drum kit settings are made in Global mode, as described on pages 224 through 226.)

Level (L)   [0…99]

This parameter sets the overall volume of the sound put out by the VDA for OSC1. Please note that high volume levels may distort some sounds when chords are played. If this happens, lower this setting.

The volume level of an oscillator's output can be adjusted to match the keyboard range of notes that are played, and the velocity at which they are played. Also, the volume of a single note can be varied over time using the VDA EG. See pages 138 through 143 for details.

Octave   [4', 8', 16', 32']

This sets the basic pitch for OSC1 in units of one octave. The standard octave for all multisounds is **8'**. You can lower the pitch by one or two octaves, or raise it one octave.

Be sure to set this parameter to **8'** when editing a drum program. Other settings will shift the drum kit's key assignments up or down, which could lead to confusion. (See page 225 for details.)

☞ **If your upper keys won't play OSC1…**

Please be aware that since every multisound has an upper limit to its pitch range, some multisounds may not produce any sound at the upper end of the keyboard when you set the Octave parameter to **4'**, especially if you use the OCTAVE or TRANSPOSE keys to raise the pitch of the keyboard even further.

Pitch EG Intensty (PEG) [–99…+99]

This determines how deeply the pitch of OSC1 will be affected by the pitch EG. Higher settings increase the depth of the pitch change. Negative values invert the pitch change. A setting of **0** disables the pitch EG, resulting in no pitch change at all.

The shape of the pitch EG is determined by the parameters on the bottom line of the OSCILLATOR page. See page 128 for details.

Panpot (Pan) [OFF, L15…L1, CNT, R1…R15]

This parameter sets the stereo position of OSC1. It does this by adjusting the levels of the OSC1 signals input to the effects system via channels A and B. (For details on these channels, see the Effect Placement section on pages 206 through 208 of this manual.)

The **CNT** setting centers the sound produced by OSC1. Settings preceded by an **L** move it to the left, whereas those preceded by an **R** move it to the right. The sound moves farther from the center as the numerical value of the setting increases. Finally, an **OFF** setting lets you turn off the output of OSC1 to channels A and B altogether.

☞ **Drum kits have their own pan settings!**

This parameter will not appear in the display for drum programs, as such programs use the pan settings for the individual drum kit instruments instead. (Drum kit pan settings are made in Global mode. See page 226.)

☞ **If you are using the *i2*…**

The *i2*'s special stereo piano multisound, **340:A.Piano 3**, consists of several sound samples, each of which has its own panning. When you select this multisound for an oscillator, therefore, the *i2* will not display the Panpot parameter for that oscillator.

Effect Send Level (C, D) [0…9]

These parameters determine the levels of the OSC1 output signals that are sent to the effects system via channels C and D.

The nature of these effect send channels and their relationship to the other effect channels are described in detail on pages 206 through 208.

OSC2

The parameters on the fourth and fifth lines of the OSCILLATOR page let you select the wave-form played by OSC2, and make other settings related to this oscillator.

OSC2 parameters

```
PROG C11 1:OSCILLATOR

Double Oscillator  Hold Off  Polyphonic
 000:A.Piano 1 L31  8'  PEG+00 Pan=L06
                               C=0   D=0
 012:PianoPad 2 L24  8'  PEG+00 Pan=R06
 Intvl=+00 Detune=-03 Delay=00 C=0   D=0
S+00 AT00 A+00 DT00 RT00 R+00 L+00 T+00
```

```
    A   B   C   D   E   F   G   H
  ┌───┬───┬───┬───┬───┬───┬───┬───┐
  └───┴───┴───┴───┴───┴───┴───┴───┘
```
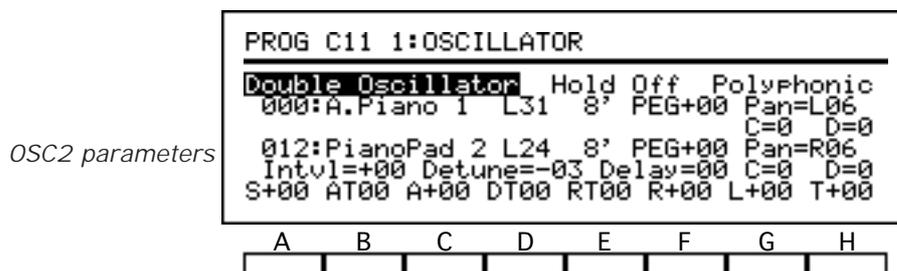
The Interval, Detune, and Delay parameters are offsets which adjust the action of OSC1 and OSC2 relative to each other. The remaining parameters function in much the same way as described for OSC1 in the preceding section. These settings are only available when you select **Double Oscillator** as the program type.

Multisound

This parameter selects the basic waveform played by OSC2. Unlike the first parameter for OSC1, it can never be used to select a drum kit.

Level (L)   [0…99]

This parameter sets the overall volume of the sound put out by the VDA for OSC2. Please note that high volume levels may distort some sounds when chords are played. If this happens, lower the setting of this parameter.

Octave   [4', 8', 16', 32']

This sets the basic pitch for OSC2 in units of one octave. The standard octave for all multisounds is **8'**. You can lower the pitch by one or two octaves, or raise it one octave.

☞ **If your upper keys won't play OSC2…**

Please be aware that since every multisound has an upper limit to its pitch range, some multisounds may not produce any sound at the upper end of the keyboard when you set the Octave parameter to **4'**, especially if you use the OCTAVE or TRANSPOSE keys to raise the pitch of the keyboard even further.

Pitch EG Intensty (PEG)   [–99…+99]

This determines how deeply the pitch of OSC2 will be affected by the pitch EG. Higher settings increase the depth of the pitch change. Negative values invert the pitch change. A setting of **0** will disable the pitch EG, resulting in no pitch change at all.

Panpot (Pan)   [OFF, L15…L1, CNT, R1…R15]

This parameter sets the stereo position of OSC2. It does this by adjusting the levels of the OSC2 signals sent to the effects system via channels A and B. (For details on these channels, see the Effect Placement section on pages 206 through 208 of this manual.)

The **CNT** setting centers the sound produced by OSC2. Settings preceded by an **L** move it to the left, whereas those preceded by an **R** move it to the right. The sound moves farther from the center as the numerical value of the setting increases. Finally, an **OFF** setting lets you turn off the output of OSC2 to channels A and B altogether.

Interval (Intvl)   [–12…+12]

This lets you raise or lower the pitch of OSC2 with respect to OSC1, so that the program will play a two-note chord. You can raise or lower OSC2 in chromatic steps, to a maximum of one octave. Positive settings raise OSC2; negative settings lower it.

Detune   [–50…+50]

This parameter lets you detune OSC1 and OSC2 with respect to each other, to create a richer sound. Positive settings raise OSC2 and lower OSC1 from the standard pitch, whereas negative settings have the opposite effect.

The numerical value of the setting indicates the pitch difference between OSC1 and OSC2 in one-cent steps. This means that one oscillator is raised and the other lowered by half the amount set, as shown in the table below.

DETUNE	OSC1 PITCH	OSC2 PITCH
+50	–25 cents	+25 cents
:	:	:
+0	0 cents	0 cents
:	:	:
–50	+25 cents	–25 cents

Delay   [0…99]

This parameter lets you delay the onset of OSC2 so that it will start playing after OSC1. You can set a value from **0** (for no delay) to **99** (for maximum delay).

Effect Send Level (C, D)   [0…9]

These parameters determine the volume levels of the OSC2 output signals that are sent to the effects system via channels C and D. The nature of these effect send channels and their relationship to the other effect channels are described in detail on pages 206 through 208.

Pitch EG

The parameters on the bottom line of the OSCILLATOR page set the shape of the pitch EG, which determines how the pitch of notes played by the program will change over time. The EG will appear as a graphic in the display when you select any of these parameters.

Pitch EG parameters

Pitch EG graphic
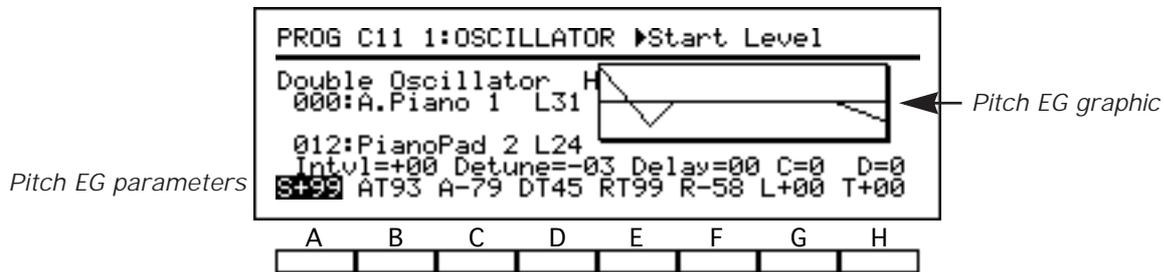
Both oscillators of a double-oscillator program will use the same pitch EG; however, you can adjust the intensity of each oscillator's EG response—and even invert the shape of the EG, if you desire—using the Pitch EG Intensity parameters described in the preceding sections.

Please note that the total of all pitch changes (i.e., all changes produced by the pitch EG, the pitch bend lever, and the pitch MG) is limited to a range of three octaves. Moreover, certain multisounds may have an even narrower pitch range in some instances.
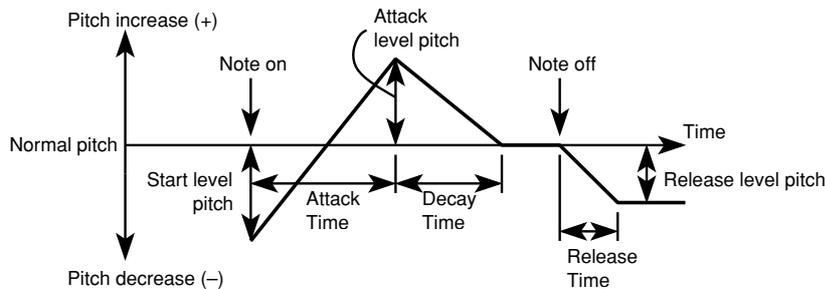
Start Level (S) [–99…+99]

This parameter sets the program's onset pitch level. Positive values raise the pitch from the standard, whereas negative values lower it. Settings of **+99** and **–99** raise and lower the pitch approximately one octave when the Pitch EG Intensity parameters are set to **+99** or **–99**. When this parameter is set to **0**, the program will start each note at its standard pitch.

Attack Time (AT) [0…99]

This parameter sets the time required for the pitch to sweep from the start level (S) to the attack level (A). A setting of **0** will result in an instantaneous change, whereas the maximum setting of **99** will produce the slowest change.

Attack Level (A) [–99…+99]

This parameter sets the pitch to which the program will sweep as the attack time (AT) elapses. It sets the pitch as described for the Start Level parameter, above.

Decay Time (DT) [0…99]

This parameter sets the time it takes the program to sweep from the attack level (A) to the standard pitch for the note. It sets time as described for the Attack Time parameter, above.

Release Time (RT) [0…99]

This parameter sets the time it takes the program to sweep from the standard pitch to the release level (R) after the note ends (i.e., the key is released). It sets time as described for the Attack Time parameter, above.

Release Level (R) [–99…+99]

This parameter sets the pitch to which the program will sweep as the release time (RT) elapses. It sets the pitch as described for the Start Level parameter, above.

Level Vel. Sense (L) [0…99]

This parameter lets you specify how the *depth* of the pitch EG will react to note velocity. Higher values will result in greater pitch changes. The pitch EG will not be affected by velocity when this parameter is set to **0**.

Pitch EG level sensitivity
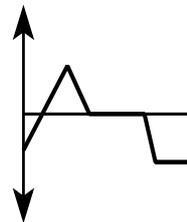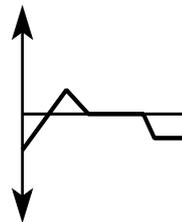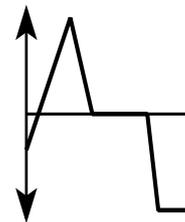
Pitch EG settings   Soft playing   Strong playing

Time Vel. Sense (T) [0…99]

This parameter lets you specify how the *speed* of the pitch EG will react to note velocity. Higher values will result in faster pitch changes. The pitch EG will not be affected by velocity when this parameter is set to **0**.

Pitch EG time sensitivity
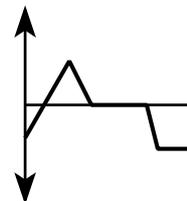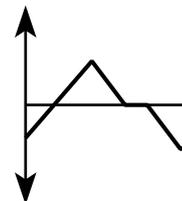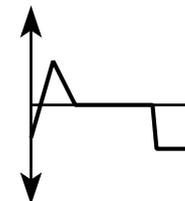
Pitch EG settings   Soft playing   Strong playing

VDF

Pages 2 and 3 of the Edit Program display contain the program's filter parameters. The variable digital filters of the *i2/i3* adjust the tone of the oscillator output by cutting out some of the high-frequency components of the multisound waveform.

VDF parameters
VDF keyboard tracking

VDF velocity sensitivity

VDF EG parameters

```
PROG C11 2:VDF 1
Cutoff=05  EG Intensity=94  Color=00
KBD Track: Amount=-53      Key=F3  ALL
           Time=05  AT:0 DT:+ ST:+ RT:0
Vel.Sense: Amount=+63        Color=+00
           Time=18  AT:0 DT:+ ST:0 RT:0
AT00 A+99 DT79 B+70 ST99 S+24 RT93 R+06
```

A	B	C	D	E	F	G	H

The settings used to filter OSC1 are found on Page 2, while those used to filter OSC2 are on Page 3. The contents of these two display pages are the same. The VDF2 page is only available with double-oscillator programs, however; pressing the 3 key while holding down the PROG key will select Page 2 when editing a single-oscillator program or a drum program.

In addition to the Cutoff Frequency and Color parameters, there are *keyboard tracking* settings that let you vary the filtering effect across the keyboard (see page 131) and *velocity sensitivity* settings that adjust the depth and speed of the filter EG in response to note velocity (see page 133). These display pages also include the *VDF EG* parameters, which are described on page 135.
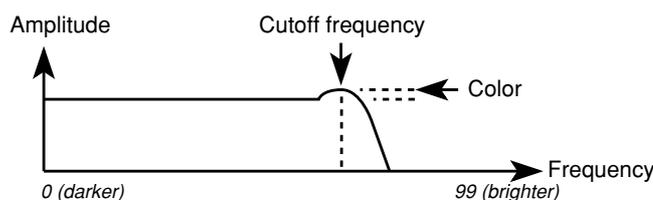
Cutoff Frequency   [0…99]

This parameter sets the frequency at which the VDF begins filtering. Lower settings will result in darker tones.

EG Intensity   [0…99]

This determines how deeply the tone of the oscillator will be affected by the VDF EG. Higher settings will produce more dramatic changes in tone. A setting of **0** will disable the VDF EG, resulting in no tone variation at all.

The shapes of the VDF EGs are set by the parameters at the bottom of the VDF pages. (See page 135 of this manual for details.)

Color   [0…99]

This parameter increases the resonance of the tone. Higher settings will emphasize the frequencies around the cutoff point, making filter changes (such as those produced by the VDF EG or VDF modulation) easier to notice.

VDF Keyboard Tracking

The keyboard tracking function adjusts the cutoff frequency to match the keyboard position of each note that is played. This lets you create more realistic simulations of many acoustic instruments, such as those that tend to produce brighter tones at higher pitches.

VDF keyboard tracking

```
PROG C11 2:VDF 1
Cutoff=05   EG Intensity=94  Color=00
KBD Track: Amount=-53     Key=F3    ALL
           Time=05   AT:0 DT:+ ST:+ RT:0
Vel.Sense: Amount=+63         Color=+00
           Time=18   AT:0 DT:+ ST:0 RT:0
AT00 A+99 DT79 B+70 ST99 S+24 RT93 R+06
```
```
 A    B    C    D    E    F    G    H
```

The effect of the tracking function is set by the Amount, Pivot Key, and Mode parameters on the second line of the VDF pages. The five parameters on the third line let keyboard tracking vary the speed of the VDF EG as well. Each of the four EG time parameters can be lengthened or shortened depending on the keyboard position of a note.

Amount   [–99…+99]

This parameter specifies how much the cutoff frequency will be changed by keyboard tracking. Higher settings make the notes above the point specified by the Pivot Key parameter progressively brighter, and the notes below it progressively darker. Negative values have the opposite effect.

When this parameter is set to **–50**, the cutoff frequency of the note specified by the Key parameter will be used as the standard cutoff for *all* notes. When this parameter is set to **0**, the cutoff frequency will change in exact proportion to the pitch of each note played. (This produces the same effect as setting the Mode parameter to **OFF**.)

Pivot Key   [C–1…G9]

This parameter sets a note which serves as the pivot point for the keyboard tracking function. The way in which this note is used depends on the Mode parameter, described below.

You can set this parameter by pressing a key on the *i2/i3* keyboard while holding down cursor key F.

Mode   [OFF, LOW, HIGH, ALL]

This parameter sets the note range that will be affected by the keyboard tracking function. Setting this parameter to **OFF** produces a proportional keyboard tracking equivalent to that set by an Amount of **0**.

When it is set to **LOW**, only notes *below* the pivot point will be affected by the keyboard tracking function. When it is set to **HIGH**, only notes *above* the pivot point will be affected. Finally, a setting of **ALL** adjusts the cutoff frequency of *all* notes, taking that of the pivot-point note as the standard.

Mode: OFF   Mode: LOW   Mode: HIGH   Mode: ALL

Time   [0…99]

This parameter determines how deeply the *speed* of the VDF EG will be affected by keyboard tracking. Higher settings will result in greater variation. The EG speed will not change at all if this parameter is set to **0**.

This parameter only sets the *intensity* of the keyboard tracking function's influence on EG speed. You can specify whether keyboard tracking *shortens* or *lengthens* each EG segment using the four parameters below.

Attack Time (AT)   [–, 0, +]

This specifies how keyboard tracking will affect the Attack Time segment. Keyboard tracking will shorten the attack duration if you use the plus **(+)** setting, or lengthen it if you use the minus **(–)** setting. The attack speed will be unaffected by keyboard tracking if you set this parameter to **0**.

Decay Time (DT)   [–, 0, +]

This parameter specifies how keyboard tracking will affect the Decay Time segment. Details are the same as described for the AT parameter above.

Slope Time (ST)   [–, 0, +]

This parameter specifies how keyboard tracking will affect the Slope Time segment. Details are the same as described for the AT parameter above.

## Release Time (RT)   [–, 0, +]

This parameter specifies how keyboard tracking will affect the Release Time segment. Details are the same as described for the AT parameter above.

VDF EG Time parameter settings (all parameters +)   Effect on low notes   Effect on high notes

VDF Velocity Sensitivity

The *i2/i3* can adjust the VDF EG to match keyboard dynamics or MIDI velocity data received with note messages from an external device. This makes it easy to simulate instruments that produce brighter tones when played louder, as pianos do. You can also create interesting effects by varying filter changes in response to velocity even when the VDA does not change.

VDF velocity sensitivity

```
PROG C11 2:VDF 1

Cutoff=05   EG Intensity=94   Color=00
KBD Track: Amount=-53       Key=F3    ALL
           Time=05  AT:0 DT:+ ST:+ RT:0
Vel.Sense: Amount=+63         Color=+00
           Time=18  AT:0 DT:+ ST:0 RT:0
AT00 A+99 DT79 B+70 ST99 S+24 RT93 R+06

  A     B     C     D     E     F     G     H
```
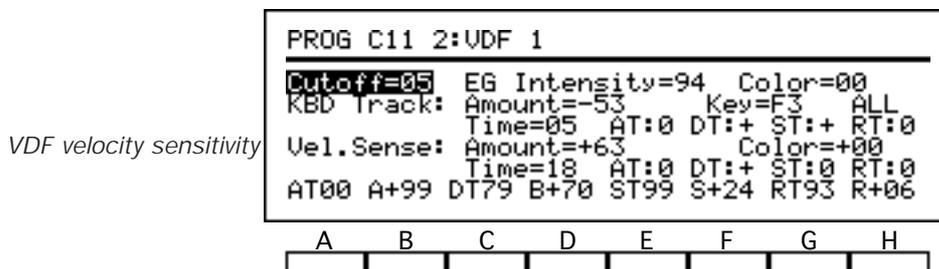
The effect of velocity on the depth of the VDF EG is set by the Amount parameter on the fourth line of the VDF pages. The five parameters on the fifth line let velocity vary the speed of the VDF EG as well. Each of the four EG segments can be lengthened or shortened in proportion to note velocity.

Amount   [–99…+99]

This lets you specify how the *depth* of the VDF EG will react to note velocity. Positive values will reduce the depth of the EG, for smaller changes in the cutoff frequency, when notes are played softly. Negative values will reduce the depth of the EG when notes are played strongly.

When this parameter is set to **0**, the VDF EG will have the depth specified by the EG Intensity parameter described on page 130.

VDF EG Velocity Sensitivity
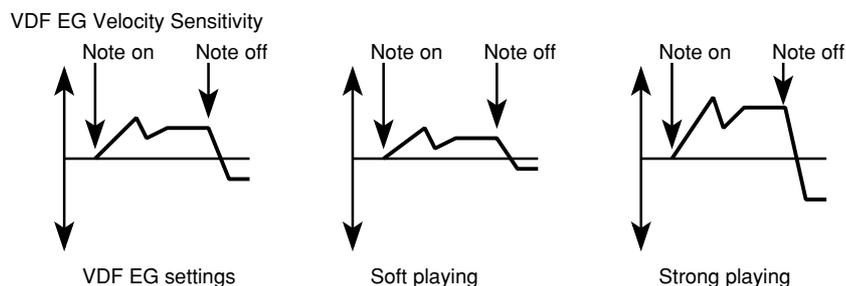
Color   [–99…+99]

This specifies how the *resonance* of the oscillator's tone will react to note velocity. Positive values will increase the resonance when notes are played strongly, and decrease it when you play softly. Negative values will have the opposite effect.

When you set this parameter to **0**, all notes will have the resonance set by the Color parameter described on page 130.

Time   [0…99]

This parameter determines how deeply the *speed* of the VDF EG will be affected by velocity. Higher settings will result in greater variation. The EG speed will not change at all if this parameter is set to **0**.

This parameter only sets the *intensity* of velocity's influence on EG speed. You can specify whether velocity *shortens* or *lengthens* each EG segment using the four parameters below.

Attack Time (AT)   [–, 0, +]

This specifies how velocity will affect the Attack Time segment. Higher veloc-
ities will shorten the attack time (making the attack faster) if you use the plus
(+) setting, or lengthen it if you use the minus **(–)** setting. The attack speed will
be unaffected by velocity if you set this parameter to **0**.

Decay Time (DT)   [–, 0, +]

This parameter specifies how velocity will affect the Decay Time segment. De-
tails are the same as described for the AT parameter above.

Slope Time (ST)   [–, 0, +]

This parameter specifies how velocity will affect the Slope Time segment. De-
tails are the same as described for the AT parameter above.

Release Time (RT)   [–, 0, +]

This parameter specifies how velocity will affect the Release Time segment.
Details are the same as described for the AT parameter above.

VDF EG Time parameter settings (all parameters +)   Soft playing   Strong playing
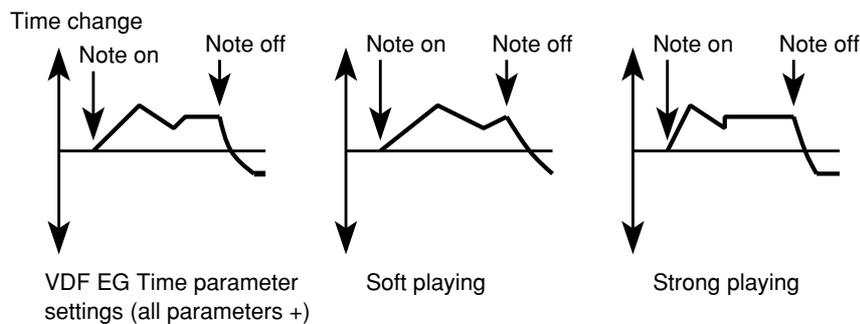
VDF EG

The parameters on the bottom line of the VDF pages set the shape of the VDF EG, which determines how the VDF's cutoff frequency will change over time. The EG will appear as a graphic in the display when you select any of these parameters.

```
PROG C11 2:VDF 1      ▸Attack Time
Cutoff=05  EG Intens│
KBD Track: Amount=-5 │
           Time=05   │
Vel.Sense: Amount=+6 │
           Time=18  AT:0 DT:+ ST:0 RT:0
AT00 A+99 DT79 B+70 ST99 S+24 RT93 R+06
```

VDF EG parameters (left label)   *VDF EG graphic* (right label, arrow)

```
A    B    C    D    E    F    G    H
```
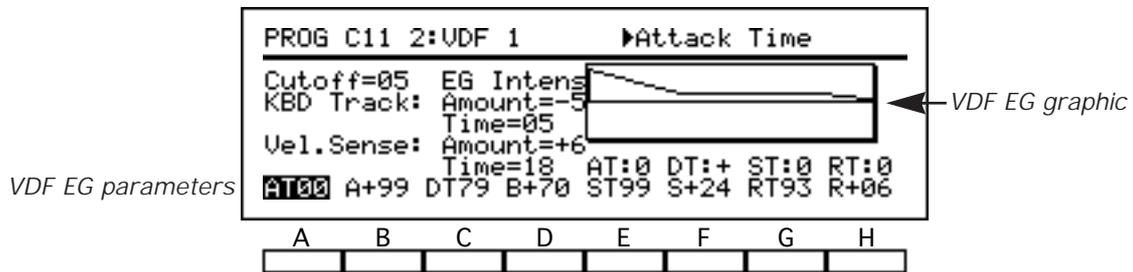
You can adjust the intensity of an oscillator's EG response using the EG Intensity parameter described on page 130. It is also possible to modify the EG automatically in response to changes in keyboard position or note velocity, using the parameters described in the preceding sections.

Attack Time (AT)   [0…99]

This parameter sets the time required for the VDF to sweep from the standard cutoff frequency to the attack level (A) when a note is played. A setting of **0** will result in an instantaneous change, whereas the maximum setting of **99** will produce the longest change.

Attack Level (A)   [–99…+99]

This parameter sets the cutoff frequency to which the VDF will sweep as the attack time (AT) elapses. Positive values raise the attack level above the standard cutoff frequency for the note in question, whereas negative values lower it.

Decay Time (DT)   [0…99]

This sets the time it takes the VDF to sweep from the attack level (A) to the break point (B). It sets time as described for the Attack Time parameter, above.

Break Point (B)   [–99…+99]

This sets the cutoff frequency to which the VDF will sweep as the decay time (DT) elapses. It sets the level as described for the Attack Level parameter, above.

Slope Time (ST)   [0…99]

This parameter sets the time it takes the VDF to sweep from the break point (B) to the sustain level (S). It sets time as described for the Attack Time parameter, described above.

Sustain Level (S)   [–99…+99]

This parameter sets the cutoff frequency to which the VDF will sweep as the slope time (ST) elapses. It sets the level as described for the Attack Level parameter, above.

Release Time (RT)   [0…99]

This parameter sets the time it takes the VDF to sweep from the sustain level (S) to the release level (R) after the note ends (i.e., the key is released). It sets time as described for the Attack Time parameter, above.

Release Level (R) [–99…+99]

This parameter sets the cutoff frequency to which the VDF will sweep as the release time (RT) elapses. It sets the level as described for the Attack Level parameter, above.
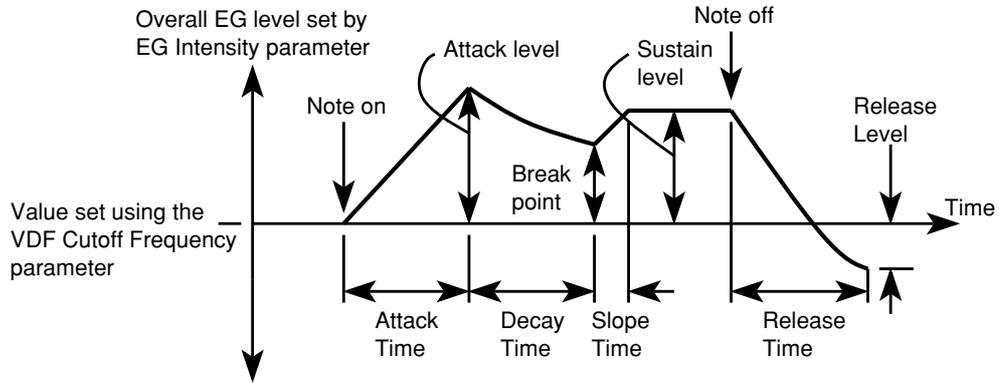
VDA

Pages 4 and 5 of the Edit Program display contain the amplifier parameters. The variable digital amplifiers of the *i2/i3* determine the volume levels at which the filtered oscillator signals are finally output.

VDA keyboard tracking

VDA velocity sensitivity

VDA EG parameters

```
PROG C11 4:VDA 1

KBD Track: Amount=+00     Key=C3   ALL
           Time=05  AT:0 DT:0 ST:+ RT:+
Vel.Sense: Amount=+68
           Time=04  AT:0 DT:0 ST:- RT:0
AT00 A+99 DT00 B+99 ST90 S+00 RT38
```

	A	B	C	D	E	F	G	H

The settings used to amplify OSC1 are found on Page 4, while those for OSC2 are on Page 5. The contents of these two display pages are the same. The OSC2 page is only available with double-oscillator programs, however; pressing the 5 key while holding down the PROG key will select Page 4 when editing a single-oscillator program or a drum program.

These displays contain no basic amplifier parameters corresponding to the Cutoff Frequency and Color parameters on the VDF pages. You can set the standard volume level for an oscillator using the appropriate Level parameter on the OSCILLATOR display page (see page 124 of this manual).

There are, however, *keyboard tracking* settings that let you vary the level across the keyboard range (see page 138) and *velocity sensitivity* settings that adjust the depth and speed of the amplifier EG in response to note velocity (see page 140). These display pages also include the *VDA EG* parameters, which are described on page 142.

VDA Keyboard Tracking

The keyboard tracking function adjusts the oscillator's level to match the keyboard position of each note that is played. This is useful in creating simulations of many acoustic instruments, such as wind instruments, which tend to be slightly louder when played at higher pitches.
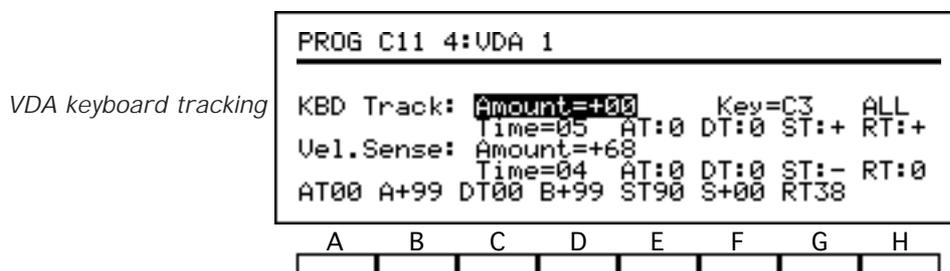
VDA keyboard tracking

```
PROG C11 4:VDA 1

KBD Track: Amount=+00      Key=C3   ALL
           Time=05  AT:0 DT:0 ST:+ RT:+
Vel.Sense: Amount=+68
           Time=04  AT:0 DT:0 ST:- RT:0
AT00 A+99 DT00 B+99 ST90 S+00 RT38
```

A	B	C	D	E	F	G	H

The effect of the tracking function is set by the Amount, Pivot Key, and Mode parameters on the first line of the VDA displays. The five parameters on the second line let keyboard tracking vary the speed of the VDA EG as well. Each of the four EG segments can be lengthened or shortened depending on the keyboard position of a note.

Amount   [–99…+99]

This parameter specifies how much the level will be changed by keyboard tracking. (See the explanation of the Mode parameter below.)

When this parameter is set to **0**, the same level will be used for all notes. (This produces the same effect as setting the Mode parameter to **OFF**.)

Pivot Key   [C–1…G9]

This parameter sets a note which serves as the pivot point for the keyboard tracking function. The way in which this note is used depends on the Mode parameter, described below.

You can set this parameter by pressing a key on the *i2/i3* keyboard while holding down cursor key F.

Mode   [OFF, LOW, HIGH, ALL]

This parameter sets the note range that will be affected by the keyboard tracking function. Setting this parameter to **OFF** disables the keyboard tracking function, so that the same level will be used for all notes.

When it is set to **LOW**, only notes *below* the pivot point will be affected by the keyboard tracking function. When it is set to **HIGH**, only notes *above* the pivot point will be affected. Finally, a setting of **ALL** adjusts the level of *all* notes, with that of the pivot-point note as the standard.

Mode: OFF   Mode: LOW   Mode: HIGH   Mode: ALL

Time   [0…99]

This parameter determines how deeply the *speed* of the VDA EG will be affected by keyboard tracking. Higher settings will result in greater variation. The

EG speed will not change at all if this parameter is set to **0**.

This parameter only sets the *intensity* of the keyboard tracking function's influence on EG speed. You can specify whether keyboard tracking *shortens* or *lengthens* each EG segment using the four parameters below.

Attack Time (AT)   [–, 0, +]

This specifies how keyboard tracking will affect the Attack Time segment. Keyboard tracking will shorten the attack duration if you use the plus **(+)** setting, or lengthen it if you use the minus **(–)** setting. The attack speed will be unaffected by keyboard tracking if you set this parameter to **0**.

Decay Time (DT)   [–, 0, +]

This parameter specifies how keyboard tracking will affect the Decay Time segment. Details are the same as described for the AT parameter above.

Slope Time (ST)   [–, 0, +]

This parameter specifies how keyboard tracking will affect the Slope Time segment. Details are the same as described for the AT parameter above.

Release Time (RT)   [–, 0, +]

This parameter specifies how keyboard tracking will affect the Release Time segment. Details are the same as described for the AT parameter above.

Note on Note off	Note on Note off	Note on Note off
VDA EG Time settings	Notes below the Pivot Key	Notes above the Pivot Key

VDA Velocity Sensitivity

The *i2/i3* can adjust the VDA EG to match keyboard dynamics or MIDI note-on velocities received from an external device. This can be used to make the attack and decay segments more noticeable when notes are played with a heavier touch.

VDA velocity sensitivity

```
PROG C11 4:VDA 1
─────────────────────────────
KBD Track: Amount=+00    Key=C3   ALL
           Time=05  AT:0 DT:0 ST:+ RT:+
Vel.Sense: Amount=+68
           Time=04  AT:0 DT:0 ST:- RT:0
AT00 A+99 DT00 B+99 ST90 S+00 RT38
```

A	B	C	D	E	F	G	H

The effect of velocity on the depth of the VDA EG is set by the Amount parameter on the third line of the VDA displays. The five parameters on the fourth line let velocity vary the speed of the VDA EG as well. Each of the four EG segments can be lengthened or shortened in proportion to note velocity.

Amount   [–99…+99]

This lets you specify how the *depth* of the VDA EG will react to note velocity. Positive values will reduce the depth of the EG, for smaller changes in level, when notes are played softly. Negative values will reduce the depth of the EG when notes are played strongly.

When this parameter is set to **0**, the VDA EG will have the depth specified by the EG parameters described in the following section.
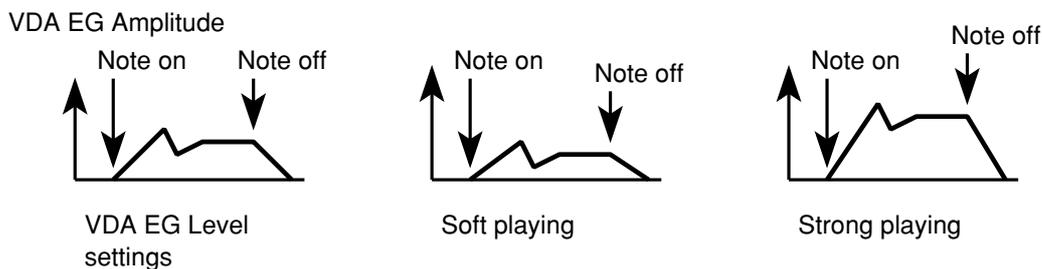
VDA EG Amplitude

VDA EG Level settings

Soft playing

Strong playing

Time   [0…99]

This parameter determines how deeply the *speed* of the VDA EG will be affected by velocity. Higher settings will result in greater variation. The EG speed will not change at all if this parameter is set to **0**.

This parameter only sets the *intensity* of velocity's influence on EG speed. You can specify whether velocity *shortens* or *lengthens* each EG segment using the four parameters below.

Attack Time (AT)   [–, 0, +]

This specifies how velocity will affect the Attack Time segment. Higher velocities will shorten the attack time if you use the plus **(+)** setting, or lengthen it if you use the minus **(–)** setting. The attack speed will be unaffected by velocity if you set this parameter to **0**.

Decay Time (DT)   [–, 0, +]

This parameter specifies how velocity will affect the Decay Time segment. Details are the same as described for the AT parameter above.

Slope Time (ST)   **[–, 0, +]**

This parameter specifies how velocity will affect the Slope Time segment. Details are the same as described for the AT parameter above.

Release Time (RT)   **[–, 0, +]**

This parameter specifies how velocity will affect the Release Time segment. Details are the same as described for the AT parameter above.

| Note on | Note off | Note on | Note off | Note on | Note off |

VDA EG Time
settings

Soft playing

Strong playing
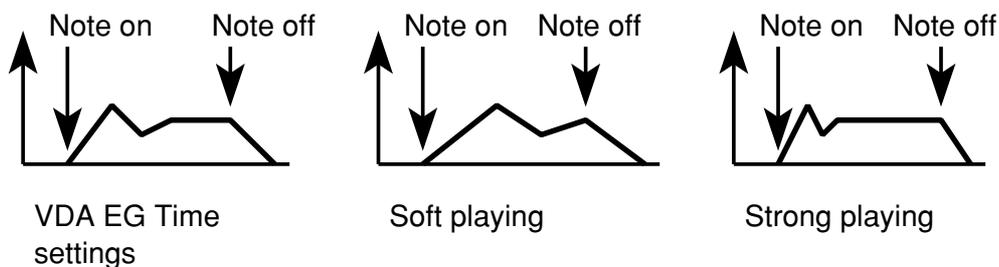
VDA EG

The parameters on the bottom line of the VDA pages set the shape of the VDA EG, which determines how the oscillator's VDA level will change over time. The EG will appear as a graphic in the display when you select any of these parameters.

VDA EG parameters / *VDA EG graphic*
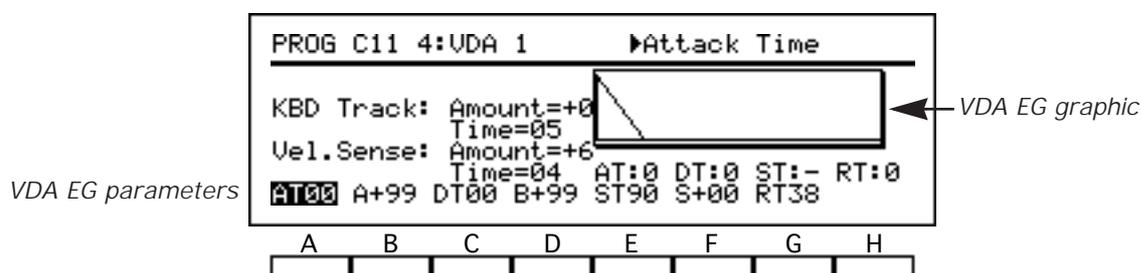
You can modify the EG automatically in response to changes in keyboard position or note velocity using the parameters described in the preceding sections.
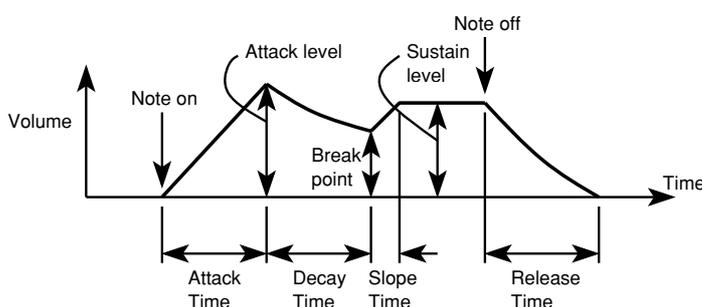
Attack Time (AT) [0…99]

This parameter sets the time required for the VDA to sweep from zero volume to the attack level (A) when a note is played. A setting of **0** will result in an instantaneous change, whereas the maximum setting of **99** will produce the longest change.

Attack Level (A) [+0…+99]

This parameter sets the level to which the VDA will sweep as the attack time (AT) elapses. Higher values raise the attack level, whereas a value of **+0** will produce no volume at all, effectively delaying the onset of the note.

Decay Time (DT) [0…99]

This parameter sets the time it takes the VDA to sweep from the attack level (A) to the break point (B). It sets time as described for the Attack Time parameter, above.

Break Point (B) [+0…+99]

This parameter sets the level to which the VDA will sweep as the decay time (DT) elapses. It sets the level as described for the Attack Level parameter, above.

Slope Time (ST) [0…99]

This parameter sets the time it takes the VDA to sweep from the break-point level (B) to the sustain level (S). It sets time as described for the Attack Time parameter, above.

Sustain Level (S) [+0…+99]

This parameter sets the level to which the VDA will sweep as the slope time (ST) elapses. It sets the level as described for the Attack Level parameter, above.

Release Time (RT) [0…99]

This parameter sets the time it takes the VDA to sweep from the sustain level (S) to zero after the note ends (i.e., the key is released). It sets time in the manner described for the Attack Time parameter, above.

PITCH MG

Page 6 of the Edit Program display contains settings which control pitch modulation. The pitch of an oscillator can be modulated using one of five waveforms. This function is commonly used to simulate the vibrato effect that can be achieved with many acoustic instruments.

```
PROG C11 6:PITCH MG    ▶Waveform
─────────────────────────────────────
PMG1 RANDOM     I:01 DL00 FI00 JS00 AT00
        Freq: F=50 KBD=+25 AT+JS=0 SYNC

PMG2 RANDOM     I:01 DL00 FI00 JS00 AT00
        Freq: F=50 KBD=+25 AT+JS=0 SYNC
```

PMG1 parameters

PMG2 parameters

```
     A    B    C    D    E    F    G    H
```
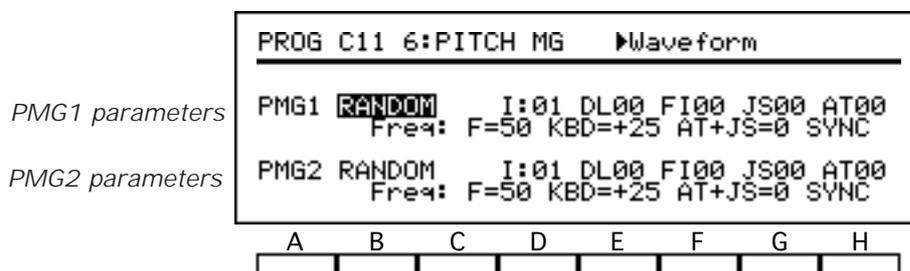
In double-oscillator programs, the pitch of each oscillator can be modulated independently of the other. The settings used to modulate OSC1 are found on the top two lines of the display, while those for OSC2 are found on the bottom two lines. The names and effects of the parameters are the same for both oscillators; however, the PMG2 parameters will only be available when editing a double-oscillator program.

Waveform

This parameter selects the waveform that will be used to modulate the oscillator's pitch. You can select from the five waveforms shown below.

Triangle

Square

Sawtooth Up

Random

Sawtooth Down
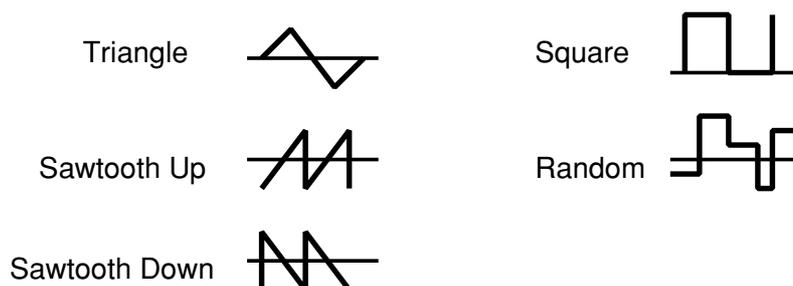
Intensity (I) [0…99]

This sets the depth of automatic pitch modulation. The maximum setting of **99** will vary the pitch across a range of one or two octaves, depending on the waveform you've selected. A setting of **0** will result in no modulation.

Delay (DL) [0…99]

This parameter lets you delay the onset of automatic pitch modulation. Higher values will delay the modulation longer. A setting of **0** will begin modulation promptly at the start of each note.

Fade In (FI) [0…99]

This parameter lets you fade in the automatic pitch modulation, so that the pitch begins modulating over a shallow depth, and gradually increases to the depth specified by the Intensity parameter. Higher settings produce a longer, more gradual fade-in; a setting of **0** will begin the modulation at full intensity with no fade-in.

Note on

Key pitch

Modulation Intensity

Time

Delay | Fade In
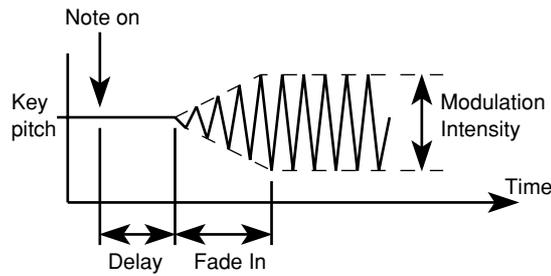
Joystick (JS)   [0…99]

This parameter sets the maximum depth of the modulation you can produce by moving the joystick upward. It is analogous to the Intensity parameter described above, except that the modulation it specifies will not begin until the joystick is moved.

Aftertouch (AT)   [0…99]

This parameter sets the maximum depth of the modulation you can produce with aftertouch. It is analogous to the Intensity parameter described above, except that the modulation it specifies will not begin until aftertouch is applied to a note.

Frequency (F)   [0…99]

This sets the rate of all pitch modulation. Higher settings produce faster modulation. A setting of **0** disables pitch modulation entirely, so no modulation—whether automatic, joystick-controlled, or aftertouch-controlled—will be possible.
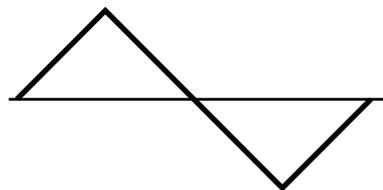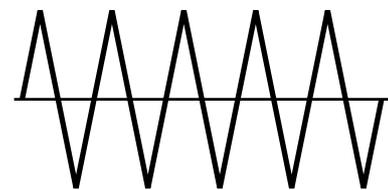
Low setting   High setting

Keyboard Tracking (KBD)   [–99…+99]

This parameter lets you scale the pitch modulation frequency to match the keyboard range of the notes you play. Higher settings will cause the pitch MG to modulate notes above C4 progressively faster, and notes below it progressively slower. Negative values will have the opposite effect.

Frequency Control (JS+AT)   [0…9]

This parameter lets you increase the modulation frequency by either moving the joystick forward or applying aftertouch to a note. Higher settings let you increase the frequency at a faster rate. A setting of **0** disables joystick and aftertouch control of modulation frequency.

Key Sync (S)   [ON, OFF]

This parameter determines whether the pitch MG is reset for each note. When it is set to **ON**, the modulation waveform will reset at the start of each note that is played. When it is set to **OFF**, the waveform will continue cycling at the standard frequency, independently of any note onsets.

☞ **Pitch modulation and chords**

If you will be playing chords, you may want to set this parameter **OFF** so that all of the notes in a chord will modulate in unison even if played with a staggered timing.

VDF MG/JS

You can also modify filter cutoff frequencies with one of five waveforms. The parameters controlling VDF modulation are found on Page 7 of Edit Program mode. Unlike pitch, the two VDFs of a double-oscillator program are modulated by a single MG.

VDF MG parameters

Pitch bend settings
Cutoff frequency control
Level control

```
PROG C11 7:VDF MG/JS  ▶Waveform

VDFMG TRIANGLE  Freq=15 DL15 I:00
      OSC:OFF           AT00 JS00 SYNC

Pitch Bend: Joystick=+00 Aftertouch=+00
     Cutoff: Joystick=+00 Aftertouch=+00
      Level: Aftertouch=+00
```

| A | B | C | D | E | F | G | H |

The VDF MG parameters are found on the first and second lines of the display. The lower half of the display contains joystick and aftertouch settings that give you direct control of pitch bending, cutoff frequency changes, and level. These settings are described in detail in the following section.

Waveform

This parameter selects the waveform that will be used to modulate the VDF cutoff frequency. You can select from the five waveforms shown below.

Triangle

Square

Sawtooth Up

Random

Sawtooth Down

Frequency (Freq)   [0…99]

This sets the rate at which the cutoff frequency is modulated. Higher settings produce faster modulation. A setting of **0** disables VDF modulation entirely.

Low setting

High setting

Delay (DL)   [0…99]

This parameter lets you delay the onset of automatic VDF modulation. Higher values will delay the modulation longer. A setting of **0** will begin modulation promptly with the start of each note.

Intensity (I) [0…99]

This sets the depth of automatic VDF modulation. A setting of **0** will result in no modulation.
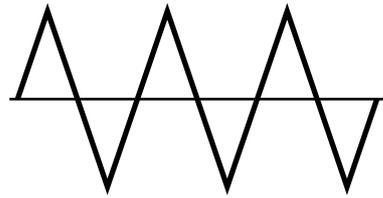
Low setting   High setting

Oscillator (OSC) [OFF, OSC1, OSC2, BOTH]

This lets you specify the oscillators to which VDF modulation is to be applied. You can modulate the cutoff frequency for OSC1, OSC2, or both oscillators. Setting this parameter to **OFF** disables the VDF MG.

Aftertouch (AT) [0…99]

This parameter sets the maximum depth of modulation you can produce with aftertouch. It is analogous to the Intensity parameter described above, except that the modulation it sets will not begin until aftertouch is applied to a note.

Joystick (JS) [0…99]

This sets the maximum depth of modulation you can produce by pulling the joystick back. It is analogous to the Intensity parameter described above, except that the modulation it sets will not begin until the joystick is moved.

Key Sync (S) [ON, OFF]

This parameter determines whether the VDF MG is reset for each note. When it is set to **ON**, the modulation waveform will reset at the start of each note that is played. When it is set to **OFF**, the waveform will continue cycling at the standard frequency, independently of any note onsets.

☞ **VDF modulation and chords**

If you will be playing chords, you may want to set this parameter **OFF** so that all of the notes in a chord will modulate in unison, even if played with a staggered timing.

Joystick and Aftertouch

The lower half of the VDF MG/JS display contains settings that let you control a program's pitch, filter cutoff frequency, and level using joystick movements and aftertouch.

```
PROG C11 7:VDF MG/JS  ▶Waveform

VDFMG TRIANGLE  Freq=15 DL15 I:00
      OSC:OFF            AT00 JS00 SYNC

Pitch Bend: Joystick=+00 Aftertouch=+00
     Cutoff: Joystick=+00 Aftertouch=+00
      Level: Aftertouch=+00
```

Pitch bend settings
Cutoff frequency control
Level control

A   B   C   D   E   F   G   H
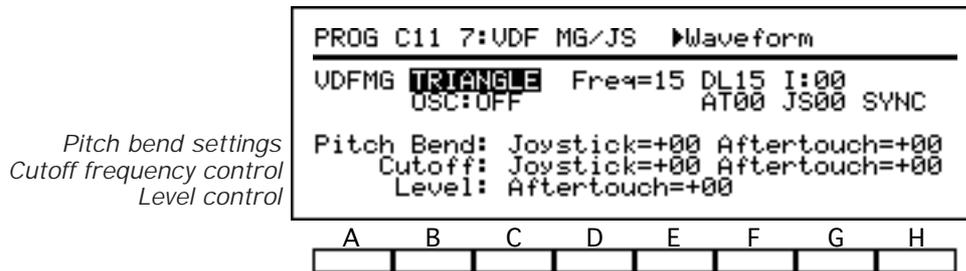
The parameters described below control direct changes of pitch, cutoff frequency, and volume. They are unlike the Joystick and Aftertouch parameters described in the Pitch MG and VDF MG sections, as the latter are concerned with the amount and speed of modulation.

Pitch Bend (Joystick)   [–12…+12]

This parameter specifies, in semitones, the range of the pitch change that will occur when you move the joystick to the left or right.

The maximum setting of **12** will let you bend the pitch up or down one octave. Positive settings will cause the pitch to rise when you move the joystick to the right, and drop when you move it to the left. Negative settings will have the opposite effect.

Pitch Bend (Aftertouch)   [–12…+12]

This parameter specifies, in semitones, the range of the pitch change that will occur when you apply aftertouch to a note.

The maximum setting of **12** will let you bend the pitch up or down one octave. Positive settings will cause the pitch to rise as you press down on the keys. Negative settings will cause the pitch to drop.

Cutoff (Joystick)   [–99…+99]

This parameter specifies the maximum range over which you can vary the VDF cutoff frequency by moving the joystick to the left or right.

The range of the frequency change will grow as the numerical value of this setting increases. Positive settings will cause the sound to become brighter when you move the joystick to the right, and darker when you move it to the left. Negative settings will have the opposite effect.

Cutoff (Aftertouch)   [–99…+99]

This parameter specifies the maximum range over which you can vary the cutoff frequency by applying aftertouch.

The range of the frequency change will grow as the numerical value of this setting increases. Positive settings will cause the sound to become brighter as you press down on the keys. Negative settings will cause the sound to become darker.

Level (Aftertouch)   [–99…+99]

This setting lets you increase or decrease the volume of notes you have played by applying aftertouch.

The range of the volume change will grow as the numerical value of this set-
ting increases. Positive settings will cause the sound to become louder as you
press down on the keys. Negative settings will cause the notes to become qui-
eter.

EFFECT

Page 8 of the Edit Program display lets you use two digital signal processors to apply effects to each program you create in Edit Program mode. This means you can put effects to work as an important part of the sound creation process. They will serve you well as a tool for producing exciting new sounds.

```
PROG C11 8:EFFECT      ▶Effect Type

FX1 28:Exciter        :ON  Mod:NONE    I+07
  B+50       EP01            L+06 H+06 →FX

FX2 01:Hall           :ON  Mod:NONE    I-04
  2.3 D060 E62   HD30         L+00 H+00 →79:21
[ SERIAL  ] C PAN =   L      D PAN =    R
```

| A | B | C | D | E | F | G | H |

The program will use the effect settings you make on this page whenever you play it in Program mode. However, these effects will not be applied to the program when you play it in an arrangement, backing sequence, or song which uses other settings. You should therefore keep your final goal in mind—and perhaps even plan your effect settings in advance—when creating a program specifically for use in an arrangement, backing sequence, or song.

Since the Edit Program mode has the same effect options as the Arrangement Play, Backing Sequence, and Song modes, the contents of this page are described in their own chapter. Please refer to Chapter 7 for details on the effect settings.

UTILITY

The last page of the Edit Program display contains several convenient functions that you can use when editing programs. The first two functions let you save your programs and give them names. The next three functions help you save time by copying groups of settings between programs, or within a program. Finally, the last function lets you reset all parameters for the current program to their default values, for the purpose of creating programs from scratch.

```
PROG C11 9:UTILITY    ▶D11 i2 Piano
▶Write Program        Copy/Swap OSC
 Rename Program       Initialize Program
 Copy All Effects
 Copy/Swap FX
 C11 Midi Piano       ⟨WRITE⟩ ⟶  D11
```

| A | B | C | D | E | F | G | H |
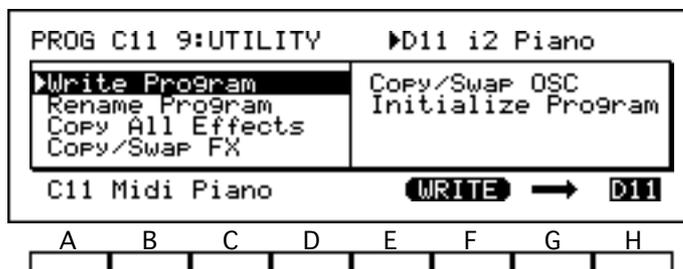
Write Program   *function*

This function lets you store a program you've edited in the *i2/i3* memory.

To use this function, enter the program number where you want to save the data above cursor key H. The program number you select must be in bank D if you are saving a normal program, or program Dr7 or Dr8 if it is a drum program.

The name of the program already stored under the number you select will appear in the upper right corner of the display. Be sure that you don't need this program, or that you have a copy of it elsewhere, as its data will be lost—replaced by your edited program—when you execute the Write Program function.

When you are sure of the program destination, select [WRITE]. The *i2/i3* will store the data after asking for confirmation.

This function will not work if the Program Protect parameter has been turned on in Global mode. See page 219 of this manual for details.

☞ **Another Write function…**

As an alternative to the Write Program function, you can simply press the REC/WRITE key if you are editing a program in bank D and want to store it under the current program number. See page 120 of this manual for details.

Rename Program   *function*

You can use this function to change the name of the program you're editing. The program name can consist of up to ten characters.

When you select this function, the current program name will appear on the bottom line of the display above cursor keys B and C. Change this to the new program name as described on page 33 of the Player's Guide.

```
PROG C11 9:UTILITY
 Write Program        Copy/Swap OSC
▶Rename Program       Initialize Program
 Copy All Effects
 Copy/Swap FX
 C11 Midi Piano       ⟨INS⟩⟨DEL⟩ ⟨◀⟩ ⟨▶⟩
```

| A | B | C | D | E | F | G | H |
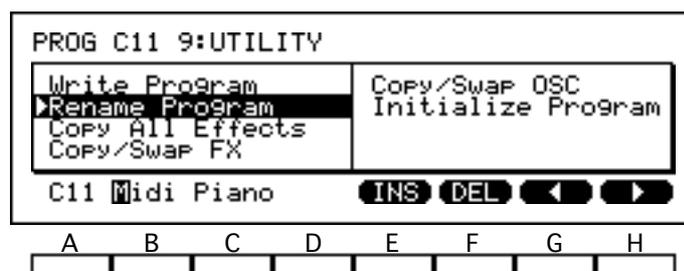
There is no need to "execute" the name change. The program's name is actu-

ally a special kind of parameter. The *i2/i3* will memorize the new name—together with the parameters on the other pages of the Edit Program mode display—when you store the program using the Write Program function, described above.

Copy All Effects   *function*

This function copies the effect parameters from an arrangement, a backing sequence, a song, or another program into the program you are editing.

To use this function, select the type of data from whose effect parameters you want to copy above cursor keys B and C, and the number of the arrangement, backing sequence, song, or program in question above key E.

```
PROG C11 9:UTILITY      ▶Source Mode
┌──────────────────────┬─────────────────┐
│ Write Program        │ Copy/Swap OSC   │
│ Rename Program       │ Initialize Program│
│▶Copy All Effects     │                 │
│ Copy/Swap FX         │                 │
└──────────────────────┴─────────────────┘
  from Program      - A11          COPY
```

A	B	C	D	E	F	G	H
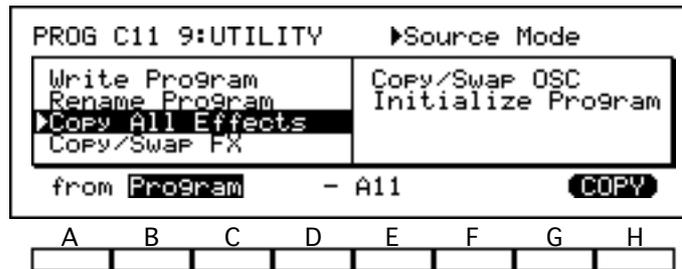
When you are sure of your choices, select [COPY]. The *i2/i3* will copy the data after asking for confirmation.

Copy/Swap FX   *function*

This function copies or exchanges the parameter values of the effect selections for the program you're editing.

To use this function, first select the direction in which you will be copying effect data. A one-headed arrow pointing in either direction will result in two effects with exactly the same settings. When the arrow points in both directions, the function will swap the data for Effect 1 with that for Effect 2.

```
PROG C11 9:UTILITY      ▶Direction
┌──────────────────────┬─────────────────┐
│ Write Program        │ Copy/Swap OSC   │
│ Rename Program       │ Initialize Program│
│ Copy All Effects     │                 │
│▶Copy/Swap FX         │                 │
└──────────────────────┴─────────────────┘
  FX1 ──▶ FX2                    COPY
```

A	B	C	D	E	F	G	H
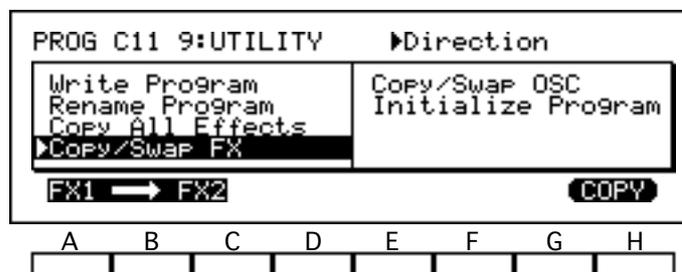
When you are sure of your choice, select [COPY] or [SWAP]. The *i2/i3* will copy or swap the data after asking for confirmation.

Copy/Swap OSC   *function*

This function copies or exchanges the parameter values for the two oscillators in the program you are editing.

This operation affects most parameters that are related to a specific oscillator. In a swap operation, for example, the *i2/i3* will exchange all OSC1 settings with those for OSC2; those for VDF1 with those for VDF2; and those for VDA1 with those for VDA2.

The Program Type, Hold, and Assign Mode parameters, the pitch EG parameters, and the effect settings will remain unaffected.

You can use this function with both single-oscillator programs and double-oscillator programs. Although the former do not use the data for OSC2, the OSC2 parameters are nonetheless remembered and can be copied or swapped to OSC1 at any time.

```
PROG C11 9:UTILITY      ▶Direction
 ┌─────────────────────┬─────────────────────┐
 │ Write Program       │▶Copy/Swap OSC       │
 │ Rename Program      │ Initialize Program  │
 │ Copy All Effects    │                     │
 │ Copy/Swap FX        │                     │
 ├─────────────────────┴─────────────────────┤
 │ OSC1 ──▶ OSC2                      COPY    │
 └───────────────────────────────────────────┘
    A    B    C    D    E    F    G    H
```
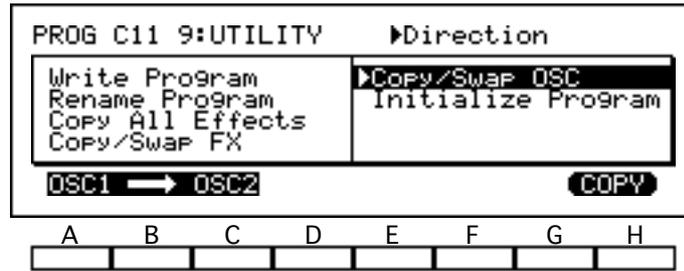
With single-oscillator programs, then, this function lets you swap the unused settings with those you are using. This feature thus makes it easy to compare the effects of changes you make on different parameters.

The procedure for using this function is the same as that described for the Copy/Swap FX function, above.

Initialize Program   *function*

This function lets you set all of the current program's parameters to their initial values. You may find it useful when you want to start programming from a blank slate.

To use this function, simply select [INIT]. The *i2/i3* will initialize the current program after asking for confirmation.

```
PROG C11 9:UTILITY
 ┌─────────────────────┬─────────────────────┐
 │ Write Program       │ Copy/Swap OSC        │
 │ Rename Program      │▶Initialize Program  │
 │ Copy All Effects    │                     │
 │ Copy/Swap FX        │                     │
 ├─────────────────────┴─────────────────────┤
 │                                   INIT     │
 └───────────────────────────────────────────┘
    A    B    C    D    E    F    G    H
```
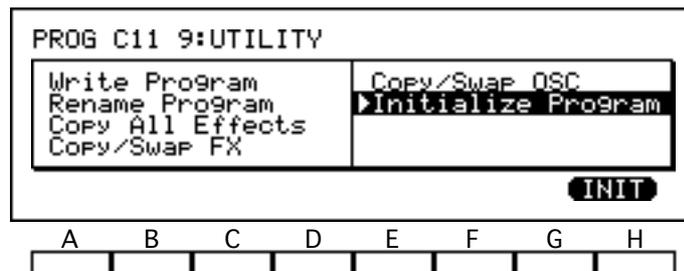
Chapter 7

Effects

When you perform in one of the *i2/i3* sequencing modes, all of the programs will use a single set of effect settings. You can turn some or all of the effects off for certain instruments by routing their output selectively. See Chapters 5 and 6 in the Player's Guide for some examples of this.

Every program also has its own effect settings, which the *i2/i3* will use when you play it in Program mode. If you enjoy creating programs to play in this mode, you will find effects to be a powerful tool that can help you achieve precisely the sound you're looking for.

We describe the effects in their own chapter because all of the *i2/i3* performance modes handle effects in the same way. The effect-related parameters for each arrangement, backing sequence, song, or program are always located on a single display page. The contents of this display page are summarized in the next section.

You can use the joystick, a foot pedal, or other controllers to adjust effect parameters while you perform. This capacity for realtime control over effects—or *dynamic modulation*, as it is known—can dramatically broaden the expressive potential of your *i2/i3*. We explain the effect parameters that control dynamic modulation on page 158.

On the UTILITY page of each mode that has effects, you will find a pair of functions that make it easy to copy and swap entire groups of effect settings at once. For details, please refer to the section describing the UTILITY page of the mode you're working in.

The general procedures for editing parameters and using utility functions are outlined in Chapter 3 of the Player's Guide. Specific applications for some of the effect settings may be found in Chapters 5, 6, and 7 of that manual.

The Effects Display

All of the effect settings for each arrangement, backing sequence, song, or program are located on a display page known as the Effects page. This page contains two basic types of settings.

The *effect parameters*, which are explained on the following page of this manual, let you select the effect to be applied by each signal processor and adjust its performance to meet your needs. The parameters for the first processor (FX1) are on the first and second lines of the display, while those for the second processor (FX2) are on the third and fourth lines.

The range of available effects is the same for both processors.

Effect Type	Effect Nos.	Description
No Effect	0	159
Reverb	1–9	160
Early Reflection	10–12	162
Stereo Delay	13–14	163
Dual Delay	15	165
Multitap Delay	16–18	167
Chorus	19–20	169
Quadrature Chorus	21–22	171
Harmonic Chorus	23	173
Symphonic Ensemble	24	175
Flanger	25–27	177
Exciter	28	179
Enhancer	29	180
Distortion	30–31	182
Phaser	32–33	184
Rotary Speaker	34	186
Tremolo	35–36	188
Parametric Equalizer	37	190
Chorused/Flanged Delay	38–39	192
Delay & Reverb	40–41	194
Delay & Chorus	42	196
Delay & Flanger	43	198
Delay & Distortion	44–45	200
Delay & Phaser	46	202
Delay & Rotary Speaker	47	204

The bottom line of the display contains the *effect placement* parameters, which define how signals flow through the effect system. These parameters are explained in detail on pages 206 through 208 of this manual.

Effect Parameters

The parameters for the first signal processor (FX1) are on the first and second lines of the display. Those for the second processor (FX2) are on the third and fourth lines. The layout of the parameters, described below, is the same for both processors.

```
PROG A11 8:EFFECT      ▶Effect Type

FX1 19:Chorus 1       :ON   Mod:VDA EG I+07
  T002 S0.15 M65  TRI       L+08 H+02 →80:20

FX2 01:Hall           :ON   Mod:VDA EG I-01
  2.3 P060 E62  HD30        L+00 H+00 →79:21
[ SERIAL ] C Pan =   L     D Pan =   R
```

FX1 parameters ⟶

FX2 parameters ⟶

```
   A    B    C    D    E    F    G    H
 ┌────┬────┬────┬────┬────┬────┬────┬────┐
 └────┴────┴────┴────┴────┴────┴────┴────┘
```
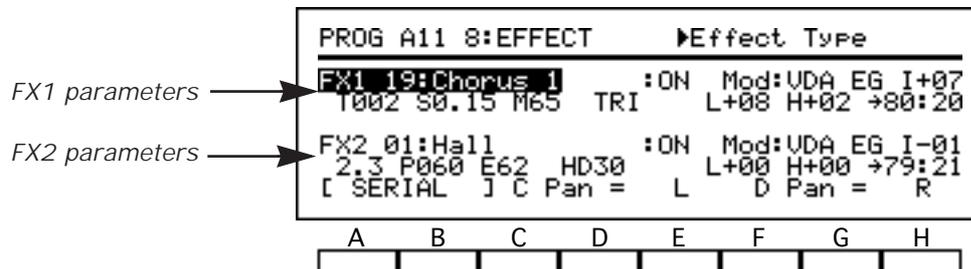
The effect selection to be applied by each processor is found in the first line of parameters for that processor. It is followed by a Switch parameter that lets you turn the effect on and off, and a pair of parameters that determine how the effect can be controlled with dynamic modulation. These parameters are always displayed, regardless of the effect selection.

The second line of parameters for either processor control the effect selected in the line above. The number and variety of parameters displayed in this line are different for each effect type; they are explained in the following sections (pages 159 through 204), which describe each effect type in turn.

These effect-specific parameters are reset to their default values whenever you select a new effect while creating an arrangement, backing sequence, song, or program.

The effect-specific parameters that you can control with dynamic modulation are indicated by an arrow. (The arrow will not appear when the rotary speaker effects [34 and 47] are selected, but you can still use dynamic modulation to switch between slow and fast speaker rotation.)

Effect Type   [0…47]

This specifies the effect to be applied by the curently selected processor. The effect selections are described in the following sections (pages 159 through 204).

☞ **Overloading the effects…**

Some of the *i2/i3* effects may break up slightly, producing a distorted sound, if overloaded by high-level input signals. If this happens, try lowering the signal levels using the program Level or track Volume parameters for channels A and B, or the C Level and D Level parameters for channels C and D.

Switch   [ON, OFF]

This turns the effect on and off. If you want to turn an effect on and off while performing, you can assign a footswitch to control this parameter using the Assignable Pedal parameters in Global mode (see page 215).

You can also turn effects on and off with control change messages from a MIDI sequencer. Control change messages 92 and 94 control the Switch parameters for FX1 and FX2, respectively.

☞ **How to turn off the shelving equalizers.**

Many of the *i2/i3* effects include two-level shelving equalizers that remain active even when the effect is turned off with the Switch parameter. The exceptions to this rule are the stereo delay (13 and 14), stereo chorus (19 and 20), exciter (28), and tremolo (35 and 36) effects.

If you want to hear the unequalized sound while editing a program, you should turn both processors off by setting **00:No Effect** as the effect selection for each. (See the description of this effect selection in the following section.)

D. Mod Source (Mod)

This parameter selects the controller you will use to modulate the effect while playing. You can assign dynamic modulation of each effect to any of a number of controllers.

Setting	Controller	Notes
NONE	No controller	Disables dynamic modulation.
JS UP	Joystick up	Push joystick forward to modulate.
JS DWN	Joystick down	Pull joystick back to modulate.
AFTT	Aftertouch	Apply aftertouch to modulate.
PEDAL1	Foot Pedal 1	Set Assignable Pedal 1 parameter in Global mode (see page 215).
PEDAL2	Foot Pedal 2	Set Assignable Pedal 2 parameter in Global mode (see page 215).
VDA EG	VDA EG	Modulation is controlled by the combined value of all currently playing amplitude envelopes.

If you want to control dynamic modulation with a foot pedal, you must set the corresponding Assignable Pedal parameter to **Effect Control** in Global mode (see page 215). It is also possible to modulate effects using MIDI control change messages 12 and 13.

D. Mod Amount (I) [–15…+15]

This parameter sets the intensity with which dynamic modulation will change the effect. Positive values will cause the depth of the effect to increase when the controller is operated. Negative values will have the opposite effect. Higher numerical values will let you make more drastic changes in the sound of the effect.

No Effect

This setting lets you turn the *i2/i3* signal processors off when playing an arrangement, backing sequence, song, or program. You will find this setting useful when you want to perform with an unprocessed sound, as well as when editing program parameters.

```
PROG A11 8:EFFECT      ▶Effect Type
FX1 00:No Effect     :ON   Mod:VDA EG I+07

FX2 00:No Effect     :ON   Mod:VDA EG I-01
[ SERIAL ] C Pan =   L    D Pan =   R
```
A   B   C   D   E   F   G   H

As its name implies, a signal processor using the **00:No Effect** setting will pass all input through without applying any effects. You can thus hear the raw, unprocessed signal when this setting is selected for both signal processors.

It is particularly useful to turn both processors off and listen to the unprocessed sound while editing program parameters. Once you are satisfied with the basic structure of the sound, you can add your effect selections as a final polishing touch.

It is also possible to turn the effect processors off using the Switch parameter, described on page 157. However, many of the *i2/i3* effects include an equalizer component that remains active even when the effect has been turned off using the Switch parameter. (See the description of this parameter in the previous section.)

For this reason, it may be best to think of the Switch parameter as a means of realtime control that lets you use a footswitch to turn effects off temporarily while performing. If you wish to turn a signal processor off permanently—when editing program parameters or performing with unprocessed sounds, for example—it is better to use the **00:No Effect** setting.

Reverb

Reverb effects add ambience by simulating a natural acoustic environment, thus making your music sound more natural. You will probably use these effects more than any other effect type, especially when playing the *i2/i3* in the Arrangement Play, Backing Sequence, or Song modes.

```
PROG A11 8:EFFECT      ▶Effect Type

FX1 01:Hall          :ON   Mod:VDA EG I+07
  3.2 P060 E62  HD30       L-04 H+00 →75:25

FX2 04:Room          :ON   Mod:VDA EG I-01
  1.1 P010 E75  HD20       L+03 H-02 →68:32
[ SERIAL  ] C Pan =   L      D Pan =    R
```

A	B	C	D	E	F	G	H

The *i2/i3* has nine reverb effects. **01:Hall** simulates the acoustic ambience of a small concert hall, where you might hear a string quartet or a live jazz band. **02:Ensemble Hall** is a larger hall, suitable for string and brass ensembles. **03:Concert Hall** gives you the setting for a full-fledged orchestra, with emphasized early reflections.

Effect **04:Room** simulates the ambience of a typical room. **05:Large Room** is a bigger room with emphasized density. This effect will produce results similar to a gated reverb effect when you set the Reverb Time parameter to about 0.5 seconds. Effect **06:Live Stage** produces a sound like you'd hear in a gymnasium, and is useful for recreating the sound of a live rock band.

Effects **07:Wet Plate** and **08:Dry Plate** simulate the plate reverb devices commonly used to emphasize vocals and solo instruments. The former is applied heavily, the latter only lightly. Finally, **09:Spring Reverb** reproduces the sound of the spring reverb device commonly used in guitar amplifiers.

All of the reverb effects are preceded by a two-level shelving equalizer. The reverb effect proper produces a number of initial echoes, known as *early reflections*, followed by a less distinct reverberation that gradually fades away.
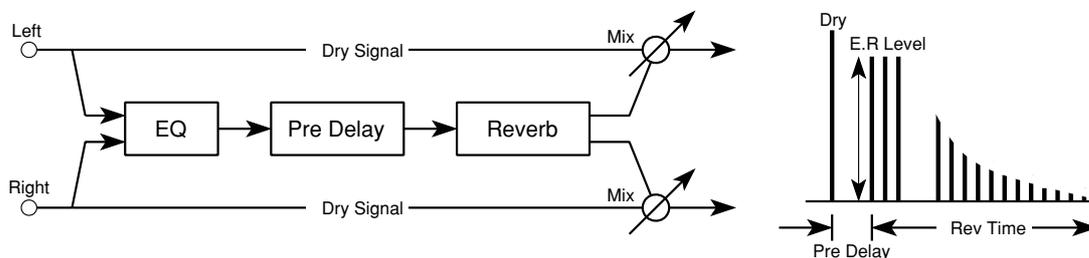
Reverb Time   [variable]

This sets the amount of time over which the reverberation will decay. You can set a time of **0.2** to **9.9** seconds for the hall reverbs, or **0.2** to **4.9** seconds for the room and live stage reverbs. For the plate and spring reverbs, this parameter sets an abstract intensity from **0** to **99**.

Pre-Delay (P)   [0 ms…200 ms]

This parameter sets the delay between the direct sound and the start of the reverb's initial reflections. Higher values will cause the reverb to stand out, making it more echo-like.

E.R. Level (E)   [variable]

This sets the volume of the early reflection component of the reverb sound. You can set a level of 0 to 99 for the hall, room, and stage reverbs, or 1 to 10 for the plate and spring reverbs. Higher values will emphasize the reverb slightly, making it more noticeable.

High Damp (HD) [0%…99%]

This determines the rate at which the high frequency components of the sound will decay. Higher values will result in faster decay.

EQ Low (L) [–12 dB…+12 dB]

This sets the amount by which the low-range shelving equalizer will cut or boost frequencies below 1 kHz.

EQ High (H) [–12 dB…+12 dB]

This sets the amount by which the high-range shelving equalizer will cut or boost frequencies above 1 kHz.

Dry:FX Balance [DRY, 99:1…1:99, FX]

This sets the balance between the direct (DRY) and processed (FX) sounds. Selecting **DRY** will turn the effect off. The **FX** setting will result in a sound that is all reverb. Other settings show the ratio of direct to processed sounds.

You can use dynamic modulation to adjust this parameter while performing. (See the description of dynamic modulation on page 158.)

Early Reflections

These effects reproduce only the *early reflection* portion of natural reverb (see page 160.) Early reflections play an important role in determining the properties of an acoustic environment. You can thus use them to thicken a sound, create echo-like reflections, or add other interesting nuances.

```
PROG A11 8:EFFECT      ▶Effect Type

FX1 10:Early Ref 1  :ON  Mod:VDA EG I+07
  T220      P015          L+03 H-05 →67:33

FX2 11:Early Ref 2  :ON  Mod:VDA EG I-01
  T200      P020          L+00 H+00 →60:40
[ SERIAL ] C Pan =  L    D Pan =   R
```

```
A    B    C    D    E    F    G    H
```

You can use **10:Early Ref 1** to emphasize the low frequency range or to produce gated reverb effects. It is especially useful with drum sounds. **11:Early Ref 2** produces reflections that die out more slowly. **12:Early Ref 3** creates reflections that increase in volume instead of dying out. It can create reversed-tape effects when used on sounds with strong attacks.

All three of the early reflection effects include a two-level shelving equalizer function.
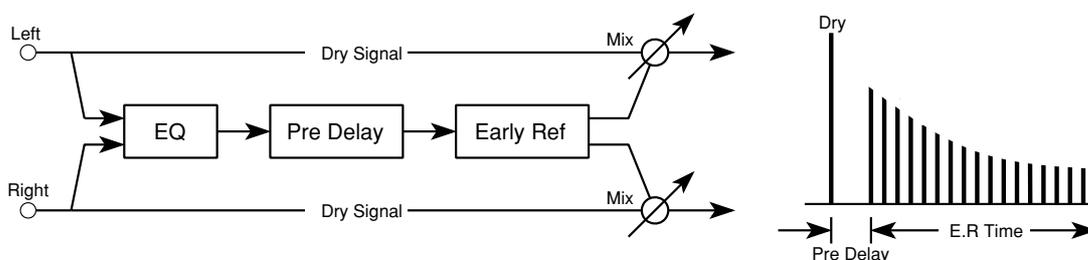
E.R. Time (T)   [100 ms…800 ms]

This sets the amount of time over which the early reflections will decay. Longer settings will make the early reflections more noticeable.

Pre-Delay (P)   [0 ms…200 ms]

This parameter sets the delay between the direct sound and the start of the early reflections. Higher values will cause the reflections to stand out, making them sound more like a distinct echo.

EQ Low (L)   [–12 dB…+12 dB]

This sets the amount by which the low-range shelving equalizer will cut or boost frequencies below 1 kHz.

EQ High (H)   [–12 dB…+12 dB]

This sets the amount by which the high-range shelving equalizer will cut or boost frequencies above 1 kHz.

Dry:FX Balance   [DRY, 99:1…1:99, FX]

This sets the balance between the direct (DRY) and processed (FX) sounds. Selecting **DRY** will turn the effect off. The **FX** setting will result in a sound that is nothing but early reflections. Other settings show the ratio of direct to processed sounds.

You can use dynamic modulation to adjust this parameter while performing. (See the description of dynamic modulation on page 158.)

Stereo Delay

These effects create stereo delay or "echo" patterns. Because they are stereo effects, you can set different left and right delay times to produce interesting panned echoes. A High Damp parameter lets you adjust the high frequency attenuation to make the repeated delays sound more natural.

```
PROG A11 8:EFFECT      ▶Effect Type
FX1 13:Stereo Delay :ON  Mod:VDA EG I+07
 L250 R260 F-40 HD30     L+00 H+00 →75:25

FX2 14:Cross Delay  :ON  Mod:VDA EG I-01
 L180 R360 F+80 HD10     L+00 H+00 →70:30
[ SERIAL ] C Pan =  L     D Pan =   R
```

```
A   B   C   D   E   F   G   H
```
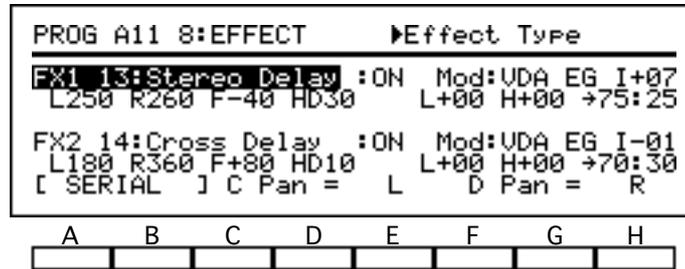
Effect **13:Stereo Delay** applies feedback independently to the right and left channels. **14:Cross Delay** crosses the delay feedback from the right channel to the left and *vice versa*, making the delay sounds bounce back and forth between the right and left channels.

Both of these effects run the right- and left-channel signals through a two-level shelving equalizer before applying the delay.

Stereo Delay

Cross Delay
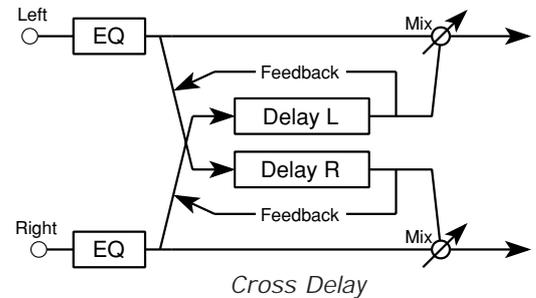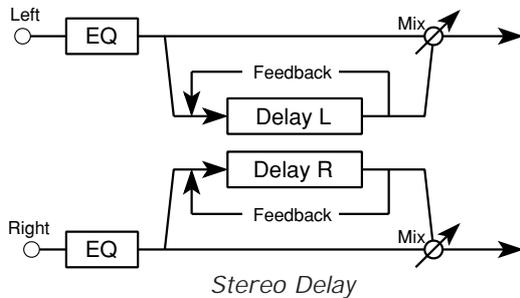
Delay Time L (L)   [0 ms…500 ms]

This parameter sets the length of the delay for the left channel.

Delay Time R (R)   [0 ms…500 ms]

This parameter sets the length of the delay for the right channel.

Feedback (F)   [–99%…+99%]

This sets the amount of feedback (that is, the amount of the delay signal that is fed back into the delay). Higher numerical values will produce more delay repetitions, so the echo will take longer to die out. Negative values will invert the phase of the feedback, giving the echoes a harder, less hollow-sounding quality.

High Damp (HD)   [0%…99%]

This determines the rate at which the high frequency components of the sound will decay. Higher values will result in faster decay.

EQ Low (L)   [–12 dB…+12 dB]

This sets the amount by which the low-range shelving equalizer will cut or boost frequencies below 1 kHz.

EQ High (H) [–12 dB…+12 dB]

This sets the amount by which the high-range shelving equalizer will cut or boost frequencies above 1 kHz.

Dry:FX Balance [DRY, 99:1…1:99, FX]

This sets the balance between the direct (DRY) and processed (FX) sounds. Selecting **DRY** will turn the effect off. The **FX** setting will result in a sound that is all delay echoes. Other settings show the ratio of direct to processed sounds.

You can use dynamic modulation to adjust this parameter while performing. (See the description of dynamic modulation on page 158.)

Dual Delay

The dual delay effect runs the right and left channel signals through independent mono delays. Since you can set all of the delay parameters separately for the right and left channels, you can use it to process two sounds—one played through each channel—with entirely different delays.

```
PROG A11 8:EFFECT      ▶Effect Type

FX1 15:Dual Delay    :ON   Mod:VDA EG I+07
 250 L+50 HD10 70:30 260 R+50 HD10 70:30

FX2 00:No Effect     :ON   Mod:VDA EG I-01

[ SERIAL ] C Pan =   L    D Pan =   R
```

| A | B | C | D | E | F | G | H |

The *i2/i3* has one dual delay effect, **15:Dual Delay**. This effect has four parameters for each channel: the first four (cursor keys A through D) apply to the left channel, the second four (keys E through H) to the right channel. The details of these four parameters are the same for both channels.

This effect does not equalize the input signal for either channel.
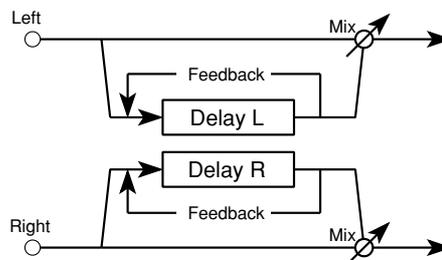
Delay Time L   [0 ms…500 ms]

This parameter sets the length of the delay for the left channel.

Feedback L (L)   [–99%…+99%]

This parameter sets the amount of feedback (that is, the amount of the delay signal that is fed back into the delay) for the left channel. Higher numerical values will produce more delay repetitions, so the echoes will take longer to die out. Negative values will invert the phase of the feedback, giving the echoes a harder, less hollow-sounding quality.

High Damp L (HD)   [0%…99%]

This sets the rate at which the high frequency components of the left channel sound will decay. Higher values will result in faster decay.

Dry:FX Balance   [DRY, 99:1…1:99, FX]

This parameter sets the balance between the direct (DRY) and processed (FX) sounds for the left channel. Selecting **DRY** will turn the effect off. The **FX** setting will result in a sound that is all echoes. Other settings show the ratio of direct to processed sounds.

You can use dynamic modulation to adjust this parameter while performing. (See the description of dynamic modulation on page 158.)

Delay Time R   [0 ms…500 ms]

This parameter sets the length of the delay for the right channel.

Feedback R (R)   [–99%…+99%]

This parameter sets the amount of feedback for the right channel. Details are the same as described for the Feedback L parameter, above.

High Damp R (HD)   [0%…99%]

This sets the rate at which the high frequency components of the right channel sound will decay. Higher values will result in faster decay.

Dry:FX Balance   [DRY, 99:1…1:99, FX]

This parameter sets the balance between the direct (DRY) and processed (FX) sounds for the right channel. Details are the same as described for the Dry:FX Balance parameter, above.

Multitap Delay

The multitap delay effects run the signals from each effect input through two independent delays. They create a multiple-echo effect that produces a pair of echoes in response to each note you play.

```
PROG A11 8:EFFECT      ▶Effect Type

FX1 16:Multitap Dly1:ON   Mod:VDA EG I+07
   A300    B400    F+50   L+00 H+00 →50:50

FX2 18:Multitap Dly3:ON   Mod:VDA EG I-01
   A300    B400    F+50   L+00 H+00 →50:50
[ SERIAL ] C Pan =    L      D Pan =    R
```

A	B	C	D	E	F	G	H

The *i2/i3* has three multitap effects. **16:Multitap Dly1** is the standard multitap delay. **17:Multitap Dly2** cross-pans the signals, reversing the right- and left-channel signals with each echo. **18:Multitap Dly3** crosses the feedback between the channels, so that the right and left channels reverse with each pair of echoes.

All three of these effects run the right- and left-channel signals through a two-level shelving equalizer before applying the delays.

Multitap Delay 1

Multitap Delay 2

Multitap Delay 3
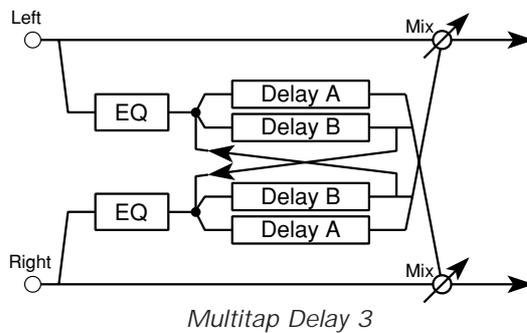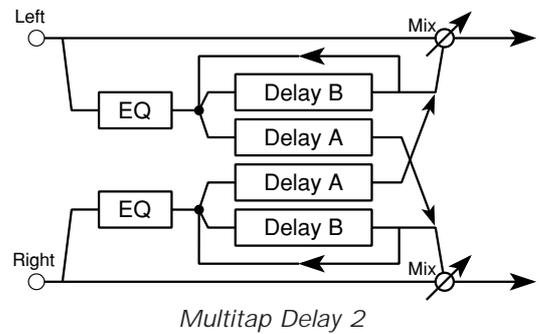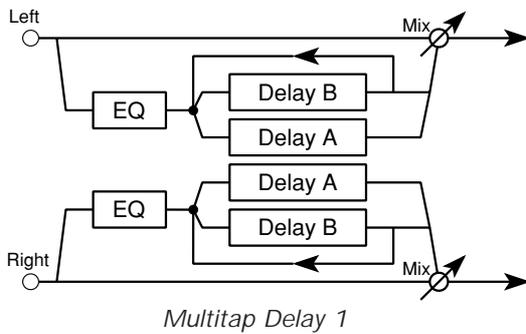
The signal from only one of the two delays (DLY B) is fed back to the input. The timing of the secondary and subsequent echoes produced by both delays is thus determined by the Delay Time B parameter, as shown in the illustrations below.

When delay time A is less than delay time B

When delay time A is greater than delay time B
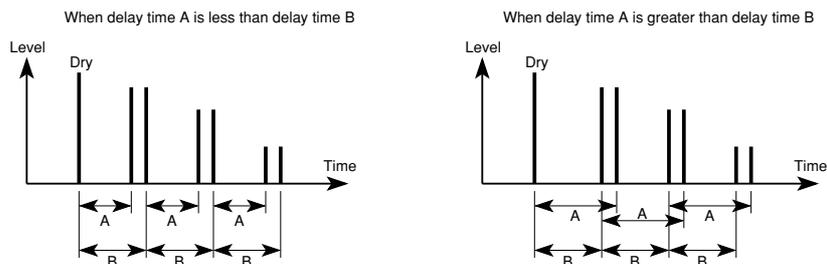
Delay Time A (A) [0 ms…500 ms]

This parameter sets the length of the delay for DLY A.

Delay Time B (B) [0 ms…500 ms]

This parameter sets the length of the delay for DLY B.

Feedback (F) [–99%…+99%]

This sets the amount of feedback (that is, the amount of the signal from DLY B that is fed back into the delays). Higher numerical values will produce more delay repetitions, so the echo will take longer to die out. Negative values will invert the phase of the feedback, giving the echoes a harder, less hollow-sounding quality.

EQ Low (L) [–12 dB…+12 dB]

This sets the amount by which the low-range shelving equalizer will cut or boost frequencies below 1 kHz.

EQ High (H) [–12 dB…+12 dB]

This sets the amount by which the high-range shelving equalizer will cut or boost frequencies above 1 kHz.

Dry:FX Balance [DRY, 99:1…1:99, FX]

This sets the balance between the direct (DRY) and processed (FX) sounds. Selecting **DRY** will turn the effect off. The **FX** setting will result in a sound that is all echoes. Other settings show the ratio of direct to processed sounds.

You can use dynamic modulation to adjust this parameter while performing. (See the description of dynamic modulation on page 158.)

Chorus

Chorus effects thicken signals by running them through a short delay whose length is modulated by a low-frequency oscillator (LFO). This delay creates minute fluctuations in pitch which, when combined with the original signal, produce the impression of two or more instruments playing in unison.

```
PROG A11 8:EFFECT      ▶Effect Type

FX1 19:Chorus 1      :ON  Mod:VDA EG I+07
 T010 S0.30 M60  TRI      L+00 H+00 →60:40

FX2 20:Chorus 2      :ON  Mod:VDA EG I-01
 T005 S1.11 M40  SIN      L+00 H+00 →60:40
[ SERIAL ] C Pan =   L      D Pan =    R
```

A	B	C	D	E	F	G	H

The *i2/i3* lets you choose from two basic stereo chorus effects, both of which process the left and right channels independently. **19:Chorus 1** modulates the delay of the right and left channels with the opposite phase, giving the sound a shimmering stereo motion. **20:Chorus 2** modulates the delay for both channels with the same phase.

Both of these effects run the right- and left-channel signals through a two-level shelving equalizer before applying the chorus effect.

Chorus 1

Chorus 2
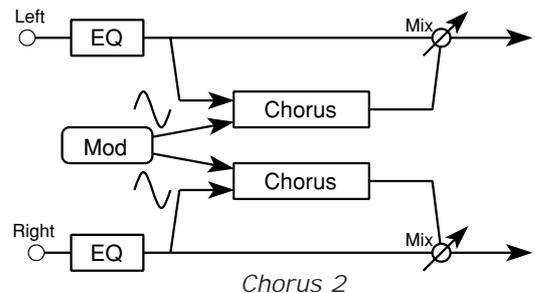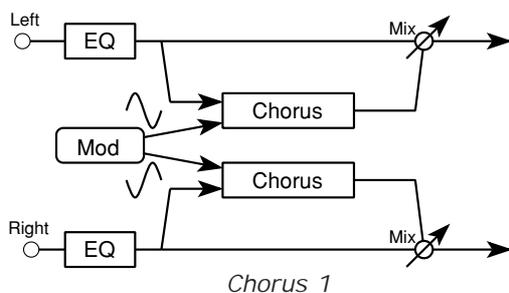
Delay Time (T)   [0 ms…200 ms]

This parameter sets the basic length of the delay. The same delay time is used for both channels.

Mod Speed (S)   [0.03 Hz…30 Hz]

This sets the frequency at which the LFO will modulate the delays. Low values (around 1 Hz) are sufficient for a standard chorus effect.

Mod Depth (M)   [0…99]

This sets the intensity of the modulation (that is, how far the LFO will vary the delay time). Higher values will make the modulation more noticeable. A value of **0** will disable the chorus effect.

LFO Waveform   [SIN, TRI]

This selects the waveform with which the LFO will modulate the delay time. You can choose either a sine wave (**SIN**) or a triangle wave (**TRI**).

EQ Low (L)   [–12 dB…+12 dB]

This sets the amount by which the low-range shelving equalizer will cut or boost frequencies below 1 kHz.

EQ High (H)   [–12 dB…+12 dB]

This sets the amount by which the high-range shelving equalizer will cut or boost frequencies above 1 kHz.

Dry:FX Balance   [DRY, 99:1…1:99, FX]

This sets the balance between the direct (DRY) and processed (FX) sounds. Selecting **DRY** will turn the effect off. The **FX** setting will result in a sound that consists of the chorus effect only. Other settings show the ratio of direct to processed sounds.

You can use dynamic modulation to adjust this parameter while performing. (See the description of dynamic modulation on page 158.)

Quadrature Chorus

Quadrature chorus effects are similar to the stereo choruses described in the previous section. They differ mainly in that the LFO modulates the delays for the right and left channels 90 degrees out of phase with each other. They also let you use different delay times for each channel.

```
PROG A11 8:EFFECT      ▶Effect Type

FX1 21:Quad Chorus  :ON   Mod:VDA EG I+07
 L011 R023 →S33 M50 T+00 L+00 H+00 50:50

FX2 22:XOver Chorus :ON   Mod:VDA EG I−01
 L011 R023 →S33 M50 T+00 L+00 H+00 50:50
[ SERIAL  ] C Pan =   L      D Pan =   R
```

A	B	C	D	E	F	G	H

The *i2/i3* has two quadrature chorus effects. The basic version, **21:Quad Chorus**, processes the left and right channels independently. **22:XOver Chorus** mixes the chorused signal for each channel into the output of the other channel, producing a crossover effect.

Both of these effects run the right- and left-channel signals through a two-level shelving equalizer before applying the chorus effect.

Quad Chorus

XOver Chorus
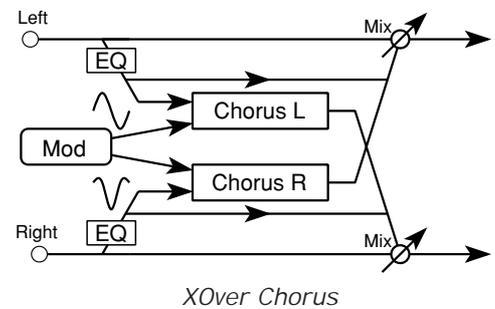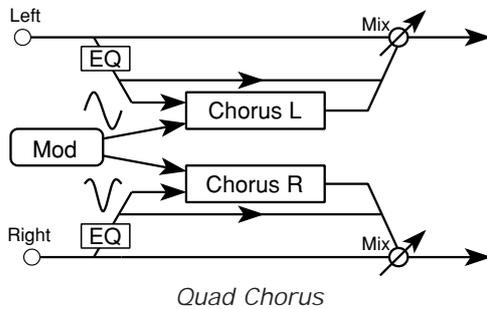
Delay Time L (L)   [0 ms…250 ms]

This parameter sets the basic delay length for the left channel.

Delay Time R (R)   [0 ms…250 ms]

This parameter sets the basic delay length for the right channel.

Mod Speed (S)   [1…99]

This sets the rate at which the LFO will modulate the delays. Higher values will produce faster oscillation.

You can use dynamic modulation to adjust this parameter while performing. (See the description of dynamic modulation on page 158.)

Mod Depth (M)   [0…99]

This sets the intensity of the modulation (that is, how far the LFO will vary the delay times). Higher values will make the modulation more noticeable. A value of **0** will disable the chorus effect.

LFO Shape   [T+10…T–10, S–10…S+10]

This selects the waveform with which the LFO will modulate the delay time. You can choose either a triangle wave (**T**) or a sine wave (**S**).

The numerical value adjusts the shape of the modulation waveform. Higher positive values will result in wider high-level peaks. Negative values will create narrower, sharper high-level peaks.

EQ Low (L)   [–12 dB…+12 dB]

This sets the amount by which the low-range shelving equalizer will cut or boost frequencies below 1 kHz.

EQ High (H)   [–12 dB…+12 dB]

This sets the amount by which the high-range shelving equalizer will cut or boost frequencies above 1 kHz.

Dry:FX Balance   [DRY, 99:1…1:99, FX]

This sets the balance between the direct (DRY) and processed (FX) sounds. Selecting **DRY** will turn the effect off. The **FX** setting will result in a sound that consists of the chorus effect only. Other settings show the ratio of direct to processed sounds.

Harmonic Chorus

The harmonic chorus effect is a quadrature chorus that uses a filter to split the input sound into high and low frequency ranges, then applies two choruses to the high range only. It works especially well with low-frequency instruments such as basses.

The *i2/i3* has one harmonic chorus effect, **23:Harmonic Cho**. Unlike the other chorus effects, it does not let you set the shape of the waveform used to modulate the delay. However, you can adjust the frequency at which the filter splits the high- and low-range components.

This effect does not equalize the input signal for either channel.
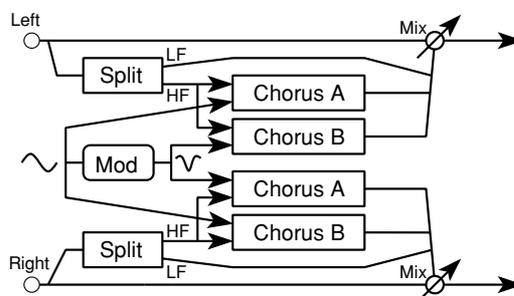
Delay Time A (A)   [0 ms…500 ms]

This parameter sets the basic delay length for chorus unit A.

Delay Time B (B)   [0 ms…500 ms]

This parameter sets the basic delay length for chorus unit B.

Mod Speed (S)   [1…99]

This sets the rate at which the LFO will modulate the delays. Higher values will produce faster oscillation.

You can use dynamic modulation to adjust this parameter while performing. (See the description of dynamic modulation on page 158.)

Mod Depth (M)   [0…99]

This sets the intensity of the modulation (that is, how far the LFO will vary the delay times). Higher values will make the modulation more noticeable. A value of **0** will disable the chorus effect.

Filter Splt Point (SP)   [0…18]

This parameter represents the frequency at which the filter splits the input signals into high- and low-frequency components. Higher values will raise the split point frequency. The chorus effect will be applied to the components above this frequency only. See the table below for a list of the actual frequencies that correspond to these values.

Value	Frequency
0	160 Hz
1	200 Hz
2	250 Hz
3	320 Hz
4	400 Hz
5	500 Hz
6	640 Hz
7	800 Hz
8	1.00 kHz
9	1.25 kHz
10	1.60 kHz
11	2.00 kHz
12	2.50 kHz
13	3.20 kHz
14	4.00 kHz
15	5.00 kHz
16	6.40 kHz
17	8.00 kHz
18	10.0 kHz

Dry:FX Balance   [DRY, 99:1…1:99, FX]

This sets the balance between the direct (DRY) and processed (FX) sounds. Selecting **DRY** will turn the effect off. The **FX** setting will result in a sound that consists of the chorus effect only. Other settings show the ratio of direct to processed sounds.

Symphonic Ensemble

The symphonic ensemble effect works on the same basic principle as the chorus effects described in the preceding sections. It is particularly effective when used with large ensemble sounds such as orchestral string sections.

```
PROG A11 8:EFFECT      ▶Effect Type

FX1 24:Symphonic Ens:ON   Mod:VDA EG I+07
    M80                       L+00 H+00 →50:50

FX2 00:No Effect     :ON   Mod:VDA EG I-01

[ SERIAL ] C Pan =   L      D Pan =   R
```
```
     A    B    C    D    E    F    G    H
```

The *i2/i3* has one symphonic ensemble effect, **24:Symphonic Ens**. This effect mixes the input from the right and left channels, then applies the ensemble effect to the mixed input. The output is sent equally to both channels.

The symphonic ensemble effect includes a two-level shelving equalizer function.
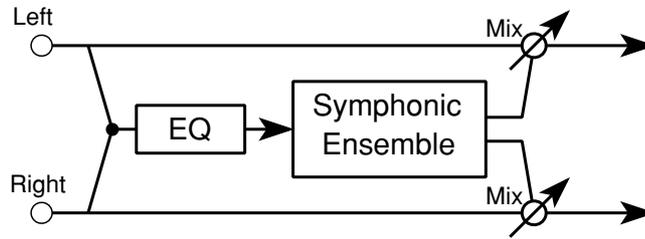
This effect cannot be used in combination with other modulated effects. If you select **24:Symphonic Ens** as the Effect Selection for one signal processor, you cannot set the other processor to use any of the following effects:

Effect Type	Effect No.
Chorus	19–20
Quadrature Chorus	21–22
Harmonic Chorus	23
Symphonic Ensemble	24
Flanger	25–27
Phaser	32–33
Rotary Speaker	34
Tremolo	35–36

Effect Type	Effect No.
Chorused/Flanged Delay	38–39
Delay & Chorus	42
Delay & Flanger	43
Delay & Phaser	46
Delay & Rotary Speaker	47

Mod Depth (M)   [0…99]

This sets the intensity of the modulation. Higher values will make the modulation more noticeable. A value of **0** will disable the ensemble effect.

EQ Low (L)   [–12 dB…+12 dB]

This sets the amount by which the low-range shelving equalizer will cut or boost frequencies below 1 kHz.

EQ High (H) [–12 dB…+12 dB]

This sets the amount by which the high-range shelving equalizer will cut or boost frequencies above 1 kHz.

Dry:FX Balance [DRY, 99:1…1:99, FX]

This sets the balance between the direct (DRY) and processed (FX) sounds. Selecting **DRY** will turn the effect off. The **FX** setting will result in a sound that consists of the ensemble effect only. Other settings show the ratio of direct to processed sounds.

You can use dynamic modulation to adjust this parameter while performing. (See the description of dynamic modulation on page 158.)

Flanger

Flanger effects use the same basic principle as the choruses, but add a loop that feeds the output back into the delay. They create chorus-like effects, but they can also add a sense of pitch to non-pitched sounds. They are effective when used to process sounds that contain a lot of high frequency energy, such as cymbals.

```
PROG A11 8:EFFECT        ▸Effect Type

FX1 25:Flanger 1    :ON   Mod:VDA EG I+07
  T005 M99   ↦S20    F-85 L+00 H+00 20:80

FX2 27:XOver Flanger:ON   Mod:VDA EG I-01
  T050 M99   ↦S50    F+85 L+03 H+03 50:50
[ SERIAL   ] C Pan =   L     D Pan =   R
```

A	B	C	D	E	F	G	H

The *i2/i3* has three stereo flanger effects. **25:Flanger 1** modulates the delays applied to the right and left channels in the same phase. **26:Flanger 2** modulates the delays in the opposite phase, resulting in a wider stereo motion. **27:XOver Flanger** also modulates the delays in inverse phases, but each flanger sends its feedback to the other channel.

All three of these effects run the right- and left-channel signals through a two-level shelving equalizer before flanging them.
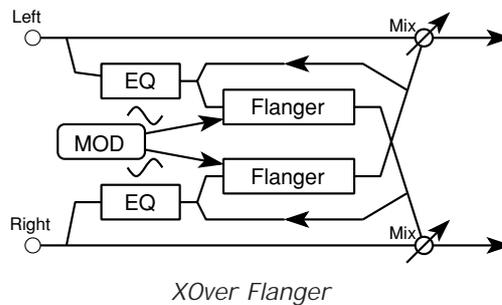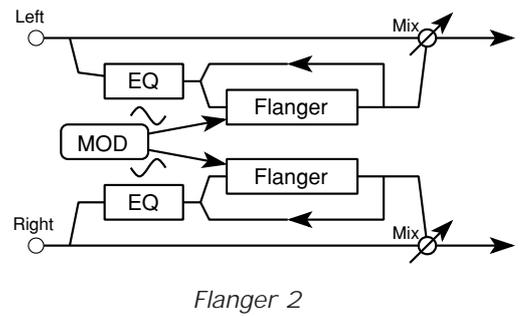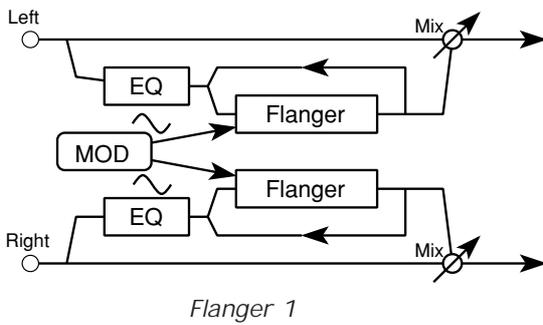
Flanger 1

Flanger 2

XOver Flanger

Delay Time (T)   [0 ms…200 ms]

This parameter sets the basic length of the delay. The same delay time is used for both channels.

Mod Depth (M)   [0…99]

This sets the intensity of the modulation (that is, how far the LFO will vary the delay time). Higher values will make the modulation more noticeable. A value of **0** will disable the flanger effect.

Mod Speed (S) [1…99]

This sets the rate at which the LFO will modulate the delays. Higher values will produce faster oscillation.

You can use dynamic modulation to adjust this parameter while performing. (See the description of dynamic modulation on page 158.)

Feedback (F) [–99%…+99%]

This sets the level of the feedback that is returned to the flanger input. Higher numerical values increase the resonance that is produced by the flanger effect. Negative values invert the phase of the feedback, lowering the pitch of the effect by an octave.

EQ Low (L) [–12 dB…+12 dB]

This sets the amount by which the low-range shelving equalizer will cut or boost frequencies below 1 kHz.

EQ High (H) [–12 dB…+12 dB]

This sets the amount by which the high-range shelving equalizer will cut or boost frequencies above 1 kHz.

Dry:FX Balance [DRY, 99:1…1:99, FX]

This sets the balance between the direct (DRY) and processed (FX) sounds. Selecting **DRY** will turn the effect off. The **FX** setting will result in a sound that consists of the flanger effect only. Other settings show the ratio of direct to processed sounds.

Exciter

The exciter effect adds harmonics which emphasize a certain frequency of the sound, giving it greater definition and presence. You can use it most effectively with solo instruments such as electric guitars and lead synths, to bring them to the forefront.

```
PROG A11 8:EFFECT      ▶Effect Type

FX1 28:Exciter      :ON  Mod:VDA EG I+07
   D+50    HS05           L+04 H+00 →FX

FX2 00:No Effect    :ON  Mod:VDA EG I-01

[ SERIAL  ] C Pan =   L    D Pan =   R
```
```
 A    B    C    D    E    F    G    H
```

The *i2/i3* has one exciter effect, **28:Exciter**, which excites the signals for the right and left channels individually. It also runs the right- and left-channel signals through a two-level shelving equalizer before exciting them.
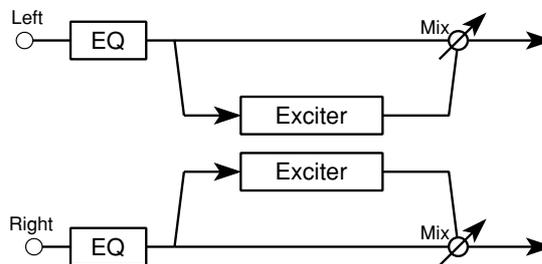
Harmonic Density (D)   [–99…+99]

This sets the density of the harmonics that are added to the signal. Higher numerical values will increase the depth of the exciter effect. Negative values suppress rather than boost harmonics, producing a tinny sound.

Hot Spot (HS)   [1…10]

This sets the center of the frequency range to be emphasized by the exciter effect. The harmonics added are based on this frequency. Higher values will raise the excited frequency.

EQ Low (L)   [–12 dB…+12 dB]

This sets the amount by which the low-range shelving equalizer will cut or boost frequencies below 1 kHz.

EQ High (H)   [–12 dB…+12 dB]

This sets the amount by which the high-range shelving equalizer will cut or boost frequencies above 1 kHz.

Dry:FX Balance   [DRY, 99:1…1:99, FX]

This sets the balance between the direct (DRY) and processed (FX) sounds. Selecting **DRY** will turn the effect off. The **FX** setting will result in a sound that consists of the exciter effect only. Other settings show the ratio of direct to processed sounds.

You can use dynamic modulation to adjust this parameter while performing. (See the description of dynamic modulation on page 158.)

Enhancer

The enhancer effect excites sounds by adding harmonics that make them clearer and more well-defined. It also applies a short inverse-phase delay to each channel, giving the sound a greater sense of breadth.

```
PROG A11 8:EFFECT      ▶Effect Type

FX1 29:Enhancer      :ON   Mod:VDA EG I+07
   D80 HS01 SW50 T25        L+01 H+01 →FX

FX2 00:No Effect     :ON   Mod:VDA EG I-01

[ SERIAL  ] C Pan =   L    D Pan =   R
```
```
  A     B     C     D     E     F     G     H
┌─────┬─────┬─────┬─────┬─────┬─────┬─────┬─────┐
└─────┴─────┴─────┴─────┴─────┴─────┴─────┴─────┘
```

The *i2/i3* has one enhancer effect, **29:Enhancer**, which enhances the signals for the right and left channels individually. It also runs the right- and left-channel signals through a two-level shelving equalizer before applying the exciter and delay effects.
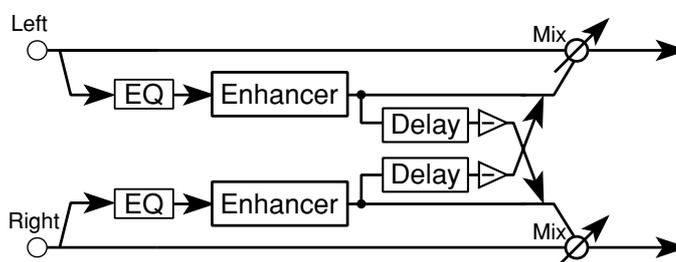
Harmonic Density (D) [1…99]

This sets the density of the harmonics that are added to the signal. Higher values will increase the depth of the exciter effect.

Hot Spot (HS) [1…20]

This sets the center of the frequency range to be emphasized by the exciter portion of the effect. The harmonics added are based on this frequency. Higher values will raise the enhanced frequency.

Stereo Width (SW) [0…99]

This sets the proportion of the delay signal for each channel that is added to the output of the other channel. Higher values will increase the stereo width of the delay effect.

Delay Time (T) [1…99]

This parameter sets the basic length of the delay. The same delay time is used for both channels.

EQ Low (L) [–12 dB…+12 dB]

This sets the amount by which the low-range shelving equalizer will cut or boost frequencies below 1 kHz.

EQ High (H) [–12 dB…+12 dB]

This sets the amount by which the high-range shelving equalizer will cut or boost frequencies above 1 kHz.

Dry:FX Balance   [DRY, 99:1…1:99, FX]

This sets the balance between the direct (DRY) and processed (FX) sounds. Selecting **DRY** will turn the effect off. The **FX** setting will result in a sound that consists of the enhancer effect only. Other settings show the ratio of direct to processed sounds.

You can use dynamic modulation to adjust this parameter while performing. (See the description of dynamic modulation on page 158.)

Distortion

Devised for use with guitars, distortion effects simulate the distortion that occurs when a signal's gain exceeds an amplifier's input capacity. Distortion is often used with solo instruments, as it adds thickness to single notes. It produces a muddy sound when applied to an instrument playing chords.

```
PROG A11 8:EFFECT      ▶Effect Type

FX1 30:Distortion    :ON  Mod:VDA EG_I+07
 D111 →HS05 R80 L+02 H-12  DL10      50:50

FX2 31:Overdrive     :ON  Mod:VDA EG_I-01
 D050 →HS45 R00 L+03 H-03  DL20      50:50
[ SERIAL  ] C Pan =   L    D Pan =   R

  A    B    C    D    E    F    G    H
```

The *i2/i3* offers two distortion effects, both of which distort the sound and add a slight wah. **30:Distortion** creates a hard, solid-state distortion frequently used in hard rock and heavy metal. It is especially effective with solo instruments. **31:Overdrive** simulates a warmer tube amp distortion. It produces a nice bluesy effect when used with guitar and organ sounds.

Both of these effects run the right- and left-channel signals through a two-level shelving equalizer before applying the distortion and wah effects.
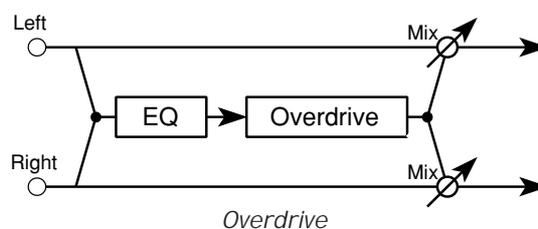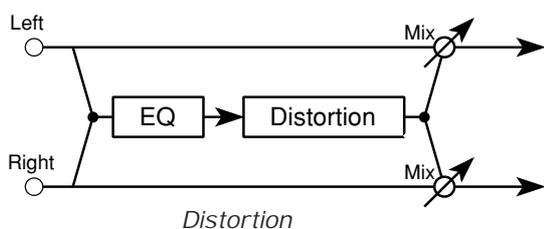
Distortion   *Overdrive*

Drive (D) [1…111]

This parameter sets the intensity of the distortion effect. Higher values will increase the level of distortion.

Hot Spot (HS) [1…99]

This sets the center of the frequency range to which the wah filter will be applied. Higher values will raise the wah frequency.

You can use dynamic modulation to manipulate this parameter while performing. (See the description of dynamic modulation on page 158.)

Resonance (R) [0…99]

This sets the amount of resonance that is added by the wah filter. Higher values will increase the intensity of the wah effect.

EQ Low (L) [–12 dB…+12 dB]

This sets the amount by which the low-range shelving equalizer will cut or boost frequencies below 1 kHz.

EQ High (H) [–12 dB…+12 dB]

This sets the amount by which the high-range shelving equalizer will cut or boost frequencies above 1 kHz.

Distortion Level (DL)   [0…99]

This sets the output level of the distorted sound. Higher values will increase the distortion. A value of **0** will disable the distortion effect.

Dry:FX Balance   [DRY, 99:1…1:99, FX]

This sets the balance between the direct (DRY) and processed (FX) sounds. Selecting **DRY** will turn the effect off. The **FX** setting will result in a sound that is all distortion. Other settings show the ratio of direct to processed sounds.

Phaser

Whereas chorus and flanger effects modulate delays, phasers modulate the phase of the input signal itself, creating an even clearer modulation effect. Phasers—or phase shifters, as they are formally known—are especially suitable for electric pianos and guitars.

```
PROG A11 8:EFFECT      ▶Effect Type

FX1 32:Phaser 1    :ON  Mod:VDA EG I+07
 HS99 →S0.69 M60 F-75 SIN         25:75

FX2 33:Phaser 2    :ON  Mod:VDA EG I-01
 HS99 →S0.57 M69 F+87 TRI         60:40
[ SERIAL ] C Pan =    L   D Pan =   R
```

A	B	C	D	E	F	G	H

The *i2/i3* has two phaser effects. **32:Phaser 1** modulates the signals of the right and left channels in opposite phases, making the sound shift back and forth in stereo. **33:Phaser 2** modulates the right- and left-channel signals with the same phase.

Phaser 1

Phaser 2
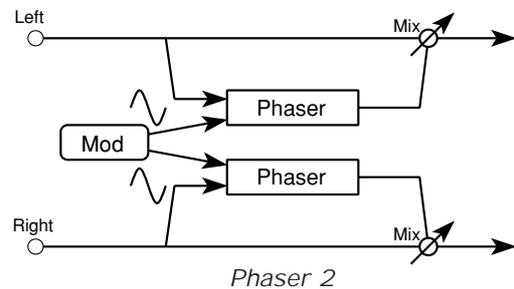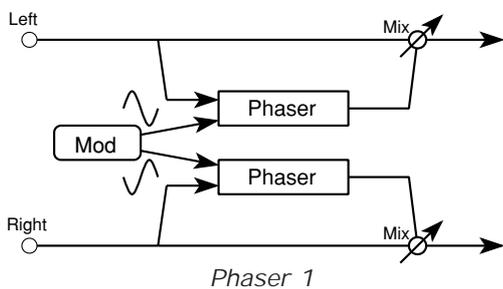
Hot Spot (HS)   [0…99]

This parameter sets the center of the frequency range whose phase is to be shifted. Higher values will raise the shifted frequency.

Mod Speed (S)   [0.03 Hz…30 Hz]

This sets the rate at which the LFO will modulate the phase of the input signal. Higher values will produce faster oscillation.

You can use dynamic modulation to adjust this parameter while performing. (See the description of dynamic modulation on page 158.)

Mod Depth (M)   [0…99]

This sets the intensity of the modulation (that is, how far the LFO will vary the phase). Higher values will make the modulation more noticeable. A value of **0** will disable the phaser effect.

Feedback (F)   [–99%…+99%]

This sets the amount of feedback (that is, the amount of the delay signal that is fed back into the phaser). Higher numerical values will increase the resonance produced by the phaser effect. Negative values will invert the phase of the feedback, increasing the resonance of the effect.

LFO Waveform   [SIN, TRI]

This selects the waveform with which the LFO will modulate the signal phase. You can choose a sine wave (**SIN**) or a triangle wave (**TRI**).

Dry:FX Balance   **[DRY, 99:1…1:99, FX]**

This sets the balance between the direct (DRY) and processed (FX) sounds. Selecting **DRY** will turn the effect off. The **FX** setting will result in a sound that consists of the phaser effect only. Other settings show the ratio of direct to processed sounds.

Rotary Speaker

This effect simulates the sound produced by the rotary speakers used with electric organs. These speakers have a motor which rotates the high range speaker horn at one of two speeds. The low speed produces a chorus-like effect, whereas the high speed produces a tremolo effect.

```
PROG A11 8:EFFECT      ▶Effect Type

FX1 34:Rotary Speakr:ON   Mod:VDA EG I+07
    VIB09      AC04     S25     F70     FX

FX2 00:No Effect    :ON   Mod:VDA EG I-01

[ SERIAL  ] C Pan =   L      D Pan =   R
```
```
   A    B    C    D    E    F    G    H
```

The *i2/i3* rotary speaker effect, **34:Rotary Speakr**, mixes the input from the right and left channels, then modulates the mixed input using a completely independent low-frequency oscillator (LFO). It does not equalize the input signal for either channel.
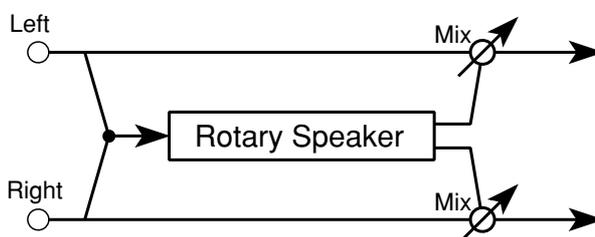
You can use dynamic modulation to switch between slow and fast oscillation speeds while performing. The controller you use to switch speeds will act as a two-position switch, rather than a continuous controller. This means that the speed with which you move the controller has no effect on the sound; the rate of change between slow and fast speeds is controlled entirely by the Acceleration parameter.

Vibrato Depth (VIB)   [0…15]

This sets the intensity of the oscillation produced by the effect. (On a real rotary speaker, you would have to change the diameter of the rotating horn to change the depth.) Higher values will produce more noticeable vibrato.

Acceleration (AC)   [1…15]

This sets the time it takes the effect to accelerate from the slow speed to the fast speed (or decelerate from fast to slow) when the oscillation speed is switched using dynamic modulation. Higher values will result in faster acceleration and deceleration.

Slow Speed (S)   [1…99]

This sets the rate of oscillation when the LFO is switched to slow speed. Higher values will result in faster oscillation.

Fast Speed (F)   [1…99]

This sets the rate of oscillation when the LFO is switched to fast speed. Higher values will result in faster oscillation.

Dry:FX Balance   **[DRY, 99:1…1:99, FX]**

This sets the balance between the direct (DRY) and processed (FX) sounds. Selecting **DRY** will turn the effect off. The **FX** setting will result in a sound that consists of the rotary speaker effect only. Other settings show the ratio of direct to processed sounds.

Tremolo

The tremolo effect uses a low-frequency oscillator (LFO) to modulate the volume of output sounds. It is extremely effective when applied to instruments playing languid melodies and broad chords, less so when used with detailed phrases.

```
PROG A11 8:EFFECT      ▶Effect Type

FX1 35:Auto Pan      :ON   Mod:VDA EG I+07
 SIN W+99  S1.59 M80       L+00 H+00 →FX

FX2 36:Tremolo       :ON   Mod:VDA EG I-01
 TRI W+00  S04.0 M63       L+00 H+00 →FX
[ SERIAL  ] C Pan =   L     D Pan =   R
```

	A	B	C	D	E	F	G	H

The *i2/i3* has two tremolo effects. The first, **35:Auto Pan**, modulates the volume of the right and left channels inversely, so that the sound moves as if it were being panned back and forth. **36:Tremolo** modulates both channels with the same phase, for a true tremolo effect.

Both of these effects run the right- and left-channel signals through a two-level shelving equalizer before applying the tremolo.
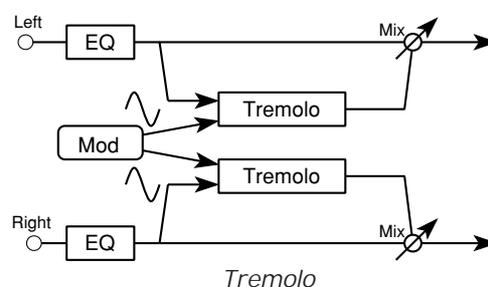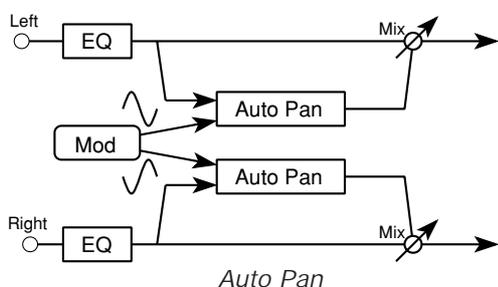
Auto Pan

Tremolo

## LFO Waveform   [SIN, TRI]

This selects the waveform with which the LFO will modulate the input signal levels. You can choose either a sine wave (**SIN**) or a triangle wave (**TRI**).

LFO Width (W)   [–99…+99]

This adjusts the shape of the LFO waveform. Higher positive values result in wider high-level peaks. Negative values will create narrower, sharper high-level peaks.
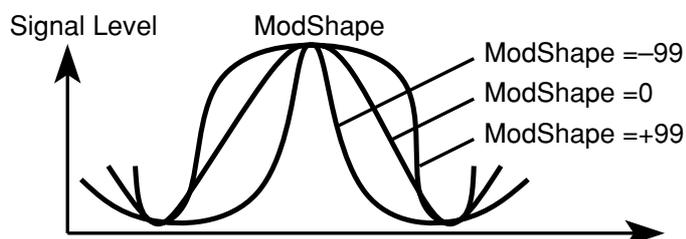
Mod Speed (S)   [0.03 Hz…30 Hz]

This sets the frequency at which the LFO will modulate the input signal levels.

Mod Depth (M)   [0…99]

This sets the intensity of the modulation (that is, how far the LFO will vary the amplitude). Higher values will make the modulation more noticeable. A value of **0** will disable the tremolo.

EQ Low (L)   [–12 dB…+12 dB]

This sets the amount by which the low-range shelving equalizer will cut or boost frequencies below 1 kHz.

EQ High (H)   [–12 dB…+12 dB]

This sets the amount by which the high-range shelving equalizer will cut or boost frequencies above 1 kHz.

Dry:FX Balance   [DRY, 99:1…1:99, FX]

This sets the balance between the direct (DRY) and processed (FX) sounds. Selecting **DRY** will turn the effect off. The **FX** setting will result in a sound that consists of the tremolo effect only. Other settings show the ratio of direct to processed sounds.

You can use dynamic modulation to adjust this parameter while performing. (See the description of dynamic modulation on page 158.)

Parametric Equalizer

Many of the *i2/i3* effects include two-level shelving equalizers that let you adjust the high- and low-frequency ranges of the output sound. However, these equalizers use fixed cutoff frequencies that limit their flexibility. For sounds that require more detailed equalization, a parametric equalizer is the answer.

```
PROG A11 8:EFFECT     ▶Effect Type

FX1 37:Parametric EQ:ON   Mod:VDA EG I+07
  LF12 G+12 →M08 G+12 W50 HF20 G+12 FX

FX2 00:No Effect     :ON   Mod:VDA EG I-01

[ SERIAL ] C Pan =   L    D Pan =   R
```
```
  A    B    C    D    E    F    G    H
```

The last single effect, **37:Parametric EQ**, is a three-band parametric equalizer. You can independently adjust both the cutoff or center frequencies and the gain settings for three frequency ranges—low, mid, and high.
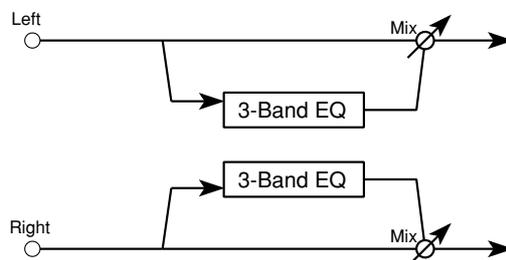
Low Frequency (LF)   [0…29]

> This parameter sets the cutoff frequency for the low-range filter. Higher values raise the cutoff frequency.

Low Gain (G)   [–12 dB…+12 dB]

> This sets the amount by which the low-range filter will cut or boost the frequencies below the cutoff point set by the Low Frequency parameter.

Middle Frequency (M)   [0…99]

> This parameter sets the center frequency for the mid-range filter. Higher values raise the center frequency.
>
> You can use dynamic modulation to adjust this parameter, creating a wah effect, while you perform. (See the description of dynamic modulation on page 158.)

Middle Gain (G)   [–12 dB…+12 dB]

> This sets the amount by which the mid-range filter will cut or boost the frequency set by the Middle Frequency parameter.

Middle Width (W)   [0…99]

> This parameter adjusts the bandwidth of frequencies affected by the mid-range filter. Higher values will increase the range of frequencies boosted or cut by this filter.

High Frequency (HF)   [0…29]

This parameter sets the cutoff frequency for the high-range filter. Higher values raise the cutoff frequency.

High Gain (G)   [–12 dB…+12 dB]

This sets the amount by which the high-range filter will cut or boost the frequencies above the cutoff point set by the High Frequency parameter.

Dry:FX Balance   [DRY, 99:1…1:99, FX]

This sets the balance between the direct (DRY) and processed (FX) sounds. Selecting **DRY** will turn the equalizer off. The **FX** setting will result in a sound that consists of equalized sound only. Other settings show the ratio of direct to processed sounds.

Chorused or Flanged Delay

The effects in this section are dual effects connected in series. That is, they apply two effects—first a mono-in, stereo-out chorus or flanger, then a stereo delay—to both the right and left channels. They are particularly useful with solo instruments.

```
PROG A11 8:EFFECT      ▶Effect Type

FX1 38:Chorus-Delay :ON  Mod:VDA EG I+07
 T11 F+10  S30  M50  T054 F-10    →70:30

FX2 39:Flanger-Delay:ON  Mod:VDA EG I-01
 T00 F-90  S10  M50  T200 F+60    →50:50
[ SERIAL ] C Pan =   L   D Pan =   R
```

A	B	C	D	E	F	G	H

38:Chorus-Delay serially connects a chorus with a delay. **39:Flanger-Delay** connects a flanger with a delay. Both the chorus and the flanger use quadrature modulation (that is, the right and left channels are modulated 90 degrees out of phase with each other).

These effects do not equalize the input signal for either channel.

Chorus-Delay
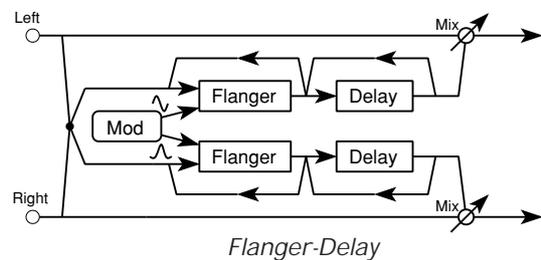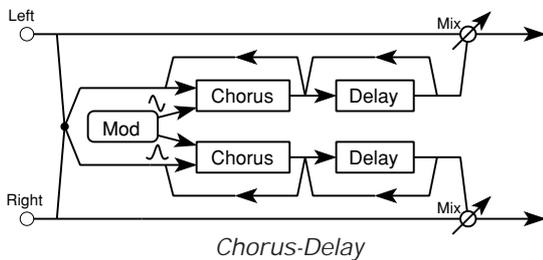
Flanger-Delay

Delay Time (T)   [0 ms…50 ms]

This parameter sets the basic length of the delay for the chorus and flanger effects. The same delay time is used for both channels.

Feedback (F)   [–99%…+99%]

This sets the level of the feedback that is returned to the flanger's input. Higher numerical values increase the resonance that is produced by the flanger effect. Negative values invert the phase of the feedback, lowering the pitch of the effect by an octave.

Mod Speed (S)   [1…99]

This sets the rate at which the LFO will modulate the chorus or flanger delays. Higher values will produce faster oscillation.

Mod Depth (M)   [0…99]

This sets the intensity of the LFO modulation (that is, how far the LFO will vary the delay time). Higher values will make the modulation more noticeable. A value of **0** will disable the chorus or flanger effect.

Delay Time (T)   [0 ms…500 ms]

This parameter sets the length of the delay for the delay effect.

Feedback (F)   [–99%…+99%]

This parameter sets the amount of delay feedback (that is, the amount of the delay signal that is fed back into the delay). Higher numerical values will pro-

duce more delay repetitions, so the echoes will take longer to die out. Negative values will invert the phase of the feedback, giving the echoes a harder, less hollow-sounding quality.

Dry:FX Balance   [DRY, 99:1…1:99, FX]

This parameter sets the balance between the direct (DRY) and processed (FX) sounds for both the chorus or flanger and delay effects. Selecting **DRY** will turn this effect off. The **FX** setting will result in a sound that consists entirely of chorused or flanged echoes. Other settings show the ratio of direct to processed sounds.

You can use dynamic modulation to adjust this parameter while performing. (See the description of dynamic modulation on page 158.)

Delay & Reverb

The effects in this section are dual effects whose component effects—a mono delay and a mono reverb—are arranged in parallel. You can use them, for example, to apply a delay to a solo guitar or lead synth on one channel, and reverb to remaining instruments on the other channel.


```
PROG A11 8:EFFECT      ▶Effect Type

FX1 40:Delay/Hall    :ON   Mod:VDA EG I+07
T250 F+50 HD10 70:30 3.5 P055 HD40 60:40

FX2 41:Delay/Room    :ON   Mod:VDA EG I-01
T250 F+50 HD10 70:30 1.5 P030 HD30 60:40
[ SERIAL  ] C Pan =    L     D Pan =    R
```

```
  A    B    C    D    E    F    G    H
```

The *i2/i3* has two effects that arrange a delay and reverb in parallel. **40:Delay/Hall** combines the delay with a hall reverb. **41:Delay/Room** combines it with a room reverb. These effects do not equalize the input signal for either channel.
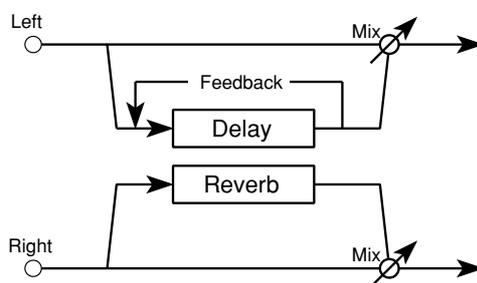
You can use dynamic modulation to control the Dry:FX Balance parameters for both the delay and reverb effects. (See the description of dynamic modulation on page 158.)

Delay Time (T)   [0 ms…500 ms]

This parameter sets the length of the delay for the delay effect.

Feedback (F)   [–99%…+99%]

This parameter sets the amount of delay feedback (that is, the amount of the delay signal that is fed back into the delay). Higher numerical values will produce more delay repetitions, so the echoes will take longer to die out. Negative values will invert the phase of the feedback, giving the echoes a harder, less hollow-sounding quality.

High Damp (HD)   [0%…99%]

This sets the rate at which the high frequency components of the delay sounds will decay. Higher values will result in faster decay.

Dry:FX Balance   [DRY, 99:1…1:99, FX]

This parameter sets the balance between the direct (DRY) and processed (FX) sounds for the delay effect. Selecting **DRY** will turn this effect off. The **FX** setting will result in a sound that is all echoes. Other settings show the ratio of direct to processed sounds.

Reverb Time   [variable]

This sets the amount of time over which the reverberation will decay. You can set a time of **0.2** to **9.9** seconds for the hall reverb, or **0.2** to **4.9** seconds for the room reverb.

Pre-Delay (P) [0 ms…200 ms]

This parameter sets the delay between the direct sound and the start of the reverb's initial reflections. Higher values will cause the reverb to stand out, making it more echo-like.

High Damp (HD) [0%…99%]

This sets the rate at which the high frequency components of the reverberation will decay. Higher values will result in faster decay.

Dry:FX Balance [DRY, 99:1…1:99, FX]

This parameter sets the balance between the direct (DRY) and processed (FX) sounds for the reverb effect. Selecting **DRY** will turn this effect off. The **FX** setting will result in a sound that is all reverberation. Other settings show the ratio of direct to processed sounds.

Delay & Chorus

This effect combines two components—a mono delay and a mono chorus—in parallel. You can use it, for example, to apply a delay to a solo guitar or lead synth on one channel, and a chorus to an electric piano on the other.

```
PROG A11 8:EFFECT       ▶Effect Type

FX1 42:Delay/Chorus :ON   Mod:VDA EG I+07
T250 F+50 HD10 70:30 0.30 M60   TRI 60:40

FX2 00:No Effect    :ON   Mod:VDA EG I-01

[ SERIAL ] C Pan =    L    D Pan =    R
```
```
    A    B    C    D    E    F    G    H
```

The *i2/i3* has one effect, **42:Delay/Chorus**, that combines a mono delay and a mono chorus in a parallel arrangement. This effect does not equalize the input signal for either channel.
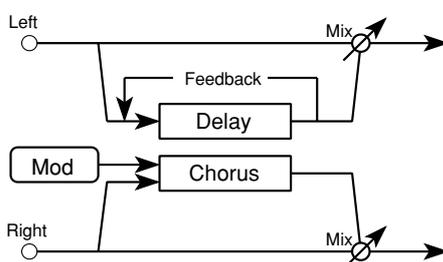
You can use dynamic modulation to control the Dry:FX Balance parameters for both the delay and chorus effects. (See the description of dynamic modulation on page 158.)

Delay Time (T)   [0 ms…500 ms]

This parameter sets the length of the delay for the delay effect.

Feedback (F)   [–99%…+99%]

This parameter sets the amount of delay feedback (that is, the amount of the delay signal that is fed back into the delay). Higher numerical values will produce more delay repetitions, so the echoes will take longer to die out. Negative values will invert the phase of the feedback, giving the echoes a harder, less hollow-sounding quality.

High Damp (HD)   [0%…99%]

This sets the rate at which the high frequency components of the delay sounds will decay. Higher values will result in faster decay.

## Dry:FX Balance   [DRY, 99:1…1:99, FX]

This parameter sets the balance between the direct (DRY) and processed (FX) sounds for the delay effect. Selecting **DRY** will turn this effect off. The **FX** setting will result in a sound that is all echoes. Other settings show the ratio of direct to processed sounds.

Mod Speed   [0.03 Hz…30 Hz]

This sets the frequency at which the LFO will modulate the delay for the chorus. Low values (around 1 Hz) are sufficient for a standard chorus effect.

Mod Depth (M)   [0…99]

This sets the intensity of the chorus modulation. Higher values will make the modulation more noticeable. A value of **0** will disable the chorus effect.

LFO Waveform   [SIN, TRI]

This selects the waveform with which the LFO will modulate the delay time. You can choose a sine wave (**SIN**) or a triangle wave (**TRI**).

## Dry:FX Balance   [DRY, 99:1…1:99, FX]

This parameter sets the balance between the direct (DRY) and processed (FX) sounds for the chorus effect. Selecting **DRY** will turn this effect off. The **FX** setting will result in a sound that consists entirely of the chorus effect. Other settings show the ratio of direct to processed sounds.

Delay & Flanger

This effect combines two components—a mono delay and a mono flanger—in parallel. You can use it, for example, to apply a delay to a solo guitar or lead synth on one channel, and a flanger to rhythm guitars and drums on the other.

```
PROG A11 8:EFFECT      ▶Effect Type

FX1 43:Delay/Flanger:ON   Mod:VDA EG I+07
T250 F+50 HD10 70:30 0.18 M70 F-75 40:60

FX2 00:No Effect    :ON   Mod:VDA EG I-01

[ SERIAL  ] C Pan =   L     D Pan =   R
─────────────────────────────────────────
  A    B    C    D    E    F    G    H
```

The *i2/i3* has one effect, **43:Delay/Flanger**, that combines a mono delay and a mono flanger in a parallel arrangement. This effect does not equalize the input signal for either channel.
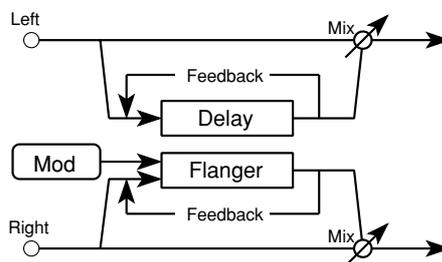
You can use dynamic modulation to control the Dry:FX Balance parameters for both the delay and flanger effects. (See the description of dynamic modulation on page 158.)

Delay Time (T)   [0 ms…500 ms]

This parameter sets the length of the delay for the delay effect.

Feedback (F)   [–99%…+99%]

This parameter sets the amount of delay feedback (that is, the amount of the delay signal that is fed back into the delay). Higher numerical values will produce more delay repetitions, so the echoes will take longer to die out. Negative values will invert the phase of the feedback, giving the echoes a harder, less hollow-sounding quality.

High Damp (HD)   [0%…99%]

This sets the rate at which the high frequency components of the delay sounds will decay. Higher values will result in faster decay.

Dry:FX Balance   [DRY, 99:1…1:99, FX]

This parameter sets the balance between the direct (DRY) and processed (FX) sounds for the delay effect. Selecting **DRY** will turn this effect off. The **FX** setting will result in a sound that is all echoes. Other settings show the ratio of direct to processed sounds.

Mod Speed   [0.03 Hz…30 Hz]

This sets the frequency at which the LFO will modulate the delay for the flanger. Low values (around 0.18 Hz) are sufficient for a standard flanger effect.

Mod Depth (M) [0…99]

This sets the intensity of the flanger modulation. Higher values will make the modulation more noticeable. A value of **0** will disable the flanger effect.

Feedback (F) [–99…+99]

This sets the level of the feedback that is returned to the input of the flanger. Higher numerical values increase the resonance that is produced by the flanger effect. Negative values invert the phase of the feedback, lowering the pitch of the effect by an octave.

Dry:FX Balance [DRY, 99:1…1:99, FX]

This parameter sets the balance between the direct (DRY) and processed (FX) sounds for the flanger effect. Selecting **DRY** will turn this effect off. The **FX** setting will result in a sound that consists entirely of the flanger effect. Other settings show the ratio of direct to processed sounds.

Delay & Distortion

These effects combine two components—a mono delay and a mono distortion or overdrive unit—in parallel. You can use them, for example, to apply a delay to a lead synth on one channel, and distortion to guitars on the other.


```
PROG A11 8:EFFECT      ▶Effect Type
FX1 44:Delay/Dist   :ON  Mod:VDA EG I+07
   T250  F+40     60:40 D111 HS50 R75  DL05

FX2 45:Delay/Overdrv:ON  Mod:VDA EG I-01
   T250  F+40     60:40 D050 HS90 R00  DL15
[ SERIAL  ] C Pan =   L    D Pan =   R
```

| A | B | C | D | E | F | G | H |

The *i2/i3* has two effects that arrange a delay and a distortion unit in series. **44:Delay/Dist** combines the delay with distortion. **45:Delay/Overdrv** combines it with overdrive. Both the distortion and the overdrive include a wah effect.

These effects do not equalize the input signal for either channel.

Delay/Distortion

Delay/Overdrive
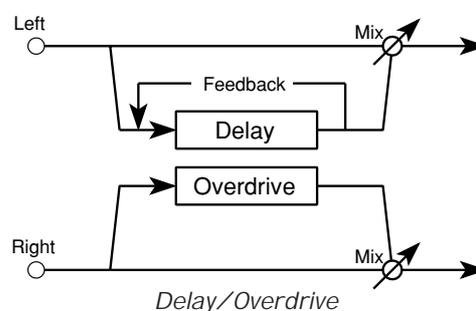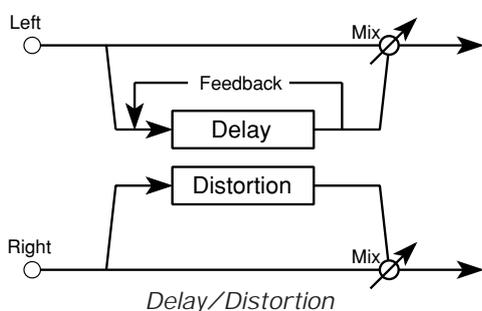
You cannot use dynamic modulation to control any of the parameters for these effects.

Delay Time (T)   [0 ms…500 ms]

This parameter sets the length of the delay.

Feedback (F)   [–99%…+99%]

This parameter sets the amount of delay feedback (that is, the amount of the delay signal that is fed back into the delay). Higher numerical values will produce more delay repetitions, so the echoes will take longer to die out. Negative values will invert the phase of the feedback, giving the echoes a harder, less hollow-sounding quality.

Dry:FX Balance   [DRY, 99:1…1:99, FX]

This parameter sets the balance between the direct (DRY) and processed (FX) sounds for the delay effect. Selecting **DRY** will turn this effect off. The **FX** setting will result in a sound that is all echoes. Other settings show the ratio of direct to processed sounds.

Drive (D)   [1…111]

This parameter sets the intensity of the distortion effect. Higher values will increase the level of distortion.

Hot Spot (HS)   [1…99]

This sets the center of the frequency range to which the wah filter will be applied. Higher values will raise the wah frequency.

Resonance (R) [0…99]

This sets the amount of resonance that is added by the wah filter. Higher values will increase the intensity of the wah effect.

Distortion Level (DL) [1…99]

This sets the output level of the distorted sound. Higher values will increase the distortion. A value of **0** will disable the distortion effect.

Delay & Phaser

This effect combines two components—a mono delay and a mono phase shifter—in parallel. You can use it, for example, to apply a delay to a lead synth on one channel, and a phaser to an electric guitar on the other.

```
PROG A11 8:EFFECT      ▶Effect Type

FX1 46:Delay/Phaser :ON  Mod:VDA EG I+07
T250 F+50 HD10 70:30 0.69 M60 F-75 25:75

FX2 00:No Effect    :ON  Mod:VDA EG I-01

[ SERIAL ] C Pan =   L    D Pan =   R
```

A	B	C	D	E	F	G	H

The *i2/i3* has one effect, **46:Delay/Phaser**, that combines a mono delay and a mono phaser in a parallel arrangement. This effect does not equalize the input signal for either channel.
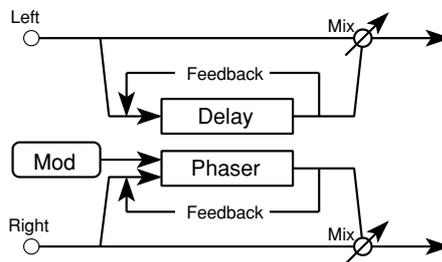
You can use dynamic modulation to control the Dry:FX Balance parameters for both the delay and phaser effects. (See the description of dynamic modulation on page 158.)

Delay Time (T) [0 ms…500 ms]

This parameter sets the length of the delay.

Feedback (F) [–99%…+99%]

This parameter sets the amount of delay feedback (that is, the amount of the delay signal that is fed back into the delay). Higher numerical values will produce more delay repetitions, so the echoes will take longer to die out. Negative values will invert the phase of the feedback, increasing the resonance of the effect.

High Damp (HD) [0%…99%]

This sets the rate at which the high frequency components of the delay sounds will decay. Higher values will result in faster decay.

Dry:FX Balance [DRY, 99:1…1:99, FX]

This parameter sets the balance between the direct (DRY) and processed (FX) sounds for the delay effect. Selecting **DRY** will turn this effect off. The **FX** setting will result in a sound that is all echoes. Other settings show the ratio of direct to processed sounds.

Mod Speed [0.3 Hz…30 Hz]

This sets the rate at which the LFO will modulate the phase of the input signal. Higher values will produce faster oscillation.

Mod Depth (M)　　　　　　　　　　　　　　　　　　　　　[0…99]

This sets the intensity of the modulation (that is, how far the LFO will vary the phase). Higher values will make the modulation more noticeable. A value of **0** will disable the phaser effect.

Feedback (F)　　　　　　　　　　　　　　　　　　　　[–99%…+99%]

This sets the amount of feedback (that is, the amount of the delay signal that is fed back into the phaser). Higher numerical values will increase the resonance produced by the phaser effect. Negative values will invert the phase of the feedback, increasing the resonance of the effect.

Dry:FX Balance　　　　　　　　　　　　　[DRY, 99:1…1:99, FX]

This parameter sets the balance between the direct (DRY) and processed (FX) sounds for the phaser effect. Selecting **DRY** will turn this effect off. The **FX** setting will result in a sound that consists entirely of the phaser effect. Other settings show the ratio of direct to processed sounds.

Delay & Rotary Speaker

This effect combines two components—a mono delay and a mono rotary speaker—in parallel. You can use it, for example, to apply a delay to a solo guitar or lead synth on one channel, and a rotary speaker to an organ sound on the other.

```
PROG A11 8:EFFECT      ▶Effect Type

FX1 47:Delay/Rotary :ON  Mod:VDA EG I+07
  T250  F+40    60:40 AC04 S25 F70  30:70

FX2 00:No Effect    :ON  Mod:VDA EG I-01

[ SERIAL ] C Pan =   L    D Pan =   R
```
```
  A    B    C    D    E    F    G    H
┌────┬────┬────┬────┬────┬────┬────┬────┐
└────┴────┴────┴────┴────┴────┴────┴────┘
```

The *i2/i3* has one effect, **47:Delay/Rotary**, that combines a delay and a rotary speaker effect in a parallel arrangement. The mono rotary speaker produces a heavier tremolo than the stereo rotary speaker effect, **34:Rotary Speakr**.

This effect does not equalize the input signal for either channel.
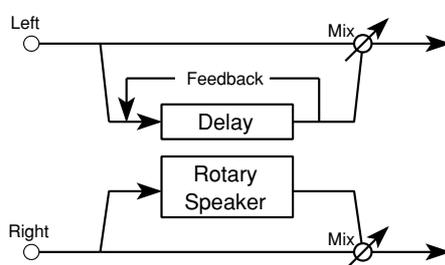
You can use dynamic modulation to switch between slow and fast oscillation speeds while performing. The controller you use to switch speeds will act as a two-position switch, rather than a continuous controller. This means that the speed with which you move the controller has no effect on the sound; the rate of change between slow and fast speeds is controlled entirely by the Acceleration parameter.

Delay Time (T)   [0 ms…500 ms]

This parameter sets the length of the delay.

Feedback (F)   [–99%…+99%]

This parameter sets the amount of delay feedback (that is, the amount of the delay signal that is fed back into the delay). Higher numerical values will produce more delay repetitions, so the echoes will take longer to die out. Negative values will invert the phase of the feedback, giving the echoes a harder, less hollow-sounding quality.

Dry:FX Balance   [DRY, 99:1…1:99, FX]

This parameter sets the balance between the direct (DRY) and processed (FX) sounds for the delay effect. Selecting **DRY** will turn this effect off. The **FX** setting will result in a sound that is all echoes. Other settings show the ratio of direct to processed sounds.

Acceleration (AC)   [1…15]

This sets the time it takes the rotary speaker effect to accelerate from the slow speed to the fast speed (or decelerate from fast to slow) when the oscillation speed is switched using dynamic modulation. Higher values will result in faster acceleration and deceleration.

Slow Speed (S) [1…99]

This sets the rate of rotary speaker oscillation when the LFO is switched to slow speed. Higher values will result in faster oscillation.

Fast Speed (F) [1…99]

This sets the rate of rotary speaker oscillation when the LFO is switched to fast speed. Higher values will result in faster oscillation.

Dry:FX Balance [DRY, 99:1…1:99, FX]

This sets the balance between the direct (DRY) and processed (FX) sounds for the rotary speaker effect. Selecting **DRY** will turn this effect off. The **FX** setting will result in a sound that consists of the rotary speaker effect only. Other settings show the ratio of direct to processed sounds.

Effect Placement

The parameters on the bottom line of the Effects display let you set the effect placement and the panning (or level) of the output from effect channels C and D. These settings determine how the two processors combine to affect the sound of your *i2/i3*.

```
PROG A11 8:EFFECT      ▶Effect Type

FX1 19:Chorus 1       :ON   Mod:VDA EG I+07
  T002 S0.15 M65   TRI      L+08 H+02 →80:20

FX2 01:Hall           :ON   Mod:VDA EG I-01
  2.3 P060 E62  HD30         L+00 H+00 →79:21
[ SERIAL  ] C Pan =   L      D Pan =     R
```

```
  A     B     C     D     E     F     G     H
```
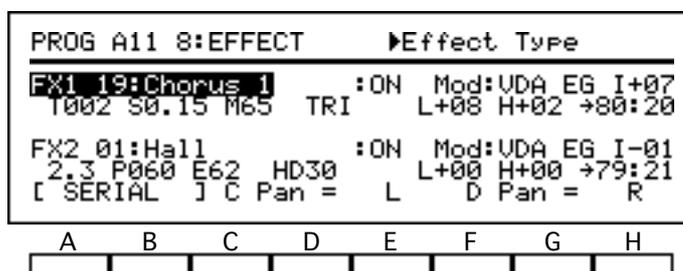
A graphic representation of the effect connections will appear when you move the cursor to the bottom line of the display. To cancel the graphic, just move the cursor to another line.

Effect Placement

This parameter specifies how the two signal processors combine to affect the arrangement, backing sequence, song, or program you are editing. You can choose from among four placement settings: **Serial**, **Parallel 1**, **Parallel 2**, and **Parallel 3**.

Each of these settings applies a different combination of effects to the signals sent to the effects system via the four input channels. The levels of the stereo channel signals (A and B) are set by the Panpot parameters for the arrangement, backing sequence, song, or program you're editing. Those of the individual channels (C and D) are set by the C Pan and D Pan parameters (or the FX1 Level and FX2 Level parameters) described below.
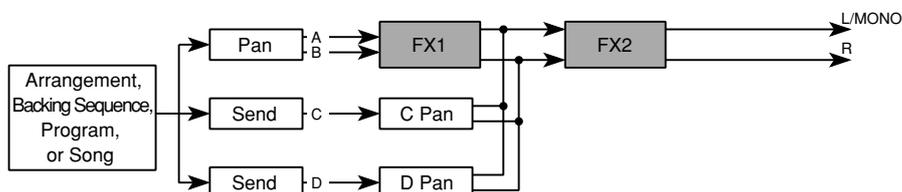
The **Serial** setting applies both signal processors FX1 and FX2 to channels A and B, in that order. Signals routed to channels C and D are mixed in after FX1 (at stereo positions set by the C Pan and D Pan parameters), and so are processed by FX2 only. This lets you avoid applying FX1 to one or more sounds.
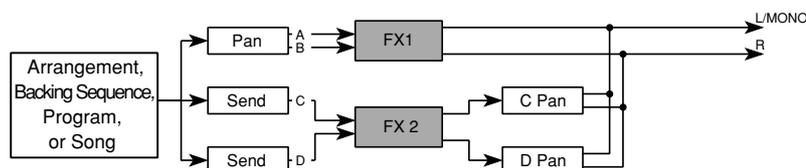
The **Parallel1** setting applies FX1 to channels A and B, and FX2 to channels C and D. Then, after setting the stereo positions of channels C and D as specified by the C Pan and D Pan parameters, it mixes the signals from the two processors for final output.

This setting is handy when you want to apply two stereo effects to two stereo channels. To do this, use the Effect Send Level C and D parameters of your arrangement, backing sequence, song, or program to set stereo positions for all sounds to be processed by FX2. Then, set the C Pan and D Pan parameters to **L** and **R**, respectively.
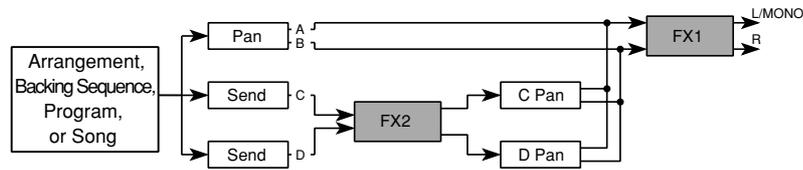
The **Parallel2** setting is, in a sense, the converse of the **Serial** placement. It applies FX2 to channels C and D. After setting the stereo positions of these channels as specified by the C Pan and D Pan parameters, it mixes their output with the dry signals of channels A and B. The resulting signals are then processed by FX1 before final output.
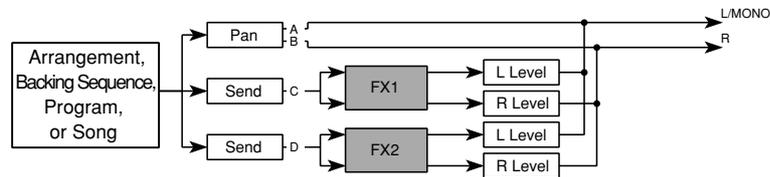
The **Parallel3** setting applies FX1 to channel C and FX2 to channel D. It then mixes the output of these channels with the unprocessed signals of channels A and B. You can thus use this placement to simulate the effect send/return circuit of a standard audio mixer, when you want to set the levels of your dry sounds first and manually mix in the effects later.

To do this, you should set the Dry:FX Balance parameters of both effects to **FX**, so the output of channels C and D will be completely wet. Then you can add the desired amount of each effect to the dry signals for the right and left channels using the FX1 Level and FX2 Level parameters. Finally, you can adjust the degree to which each effect is applied to each sound using the Effect Send Level C and D parameters of your arrangement, backing sequence, song, or program.

C Pan   [L, 99:1…1:99, R, OFF]

This parameter appears when **Serial**, **Parallel1,** or **Parallel2** is selected as the effect placement. It sets the stereo position of the signal output from channel C. (You can assign signals to this channel using the Effect Send Level C parameter of the arrangement, backing sequence, song, or program you are editing.)

Selecting **L** for this parameter will pan the signal all the way to the left. The **R** setting will pan it to the right. Numerical settings show the stereo position of this channel as a percentile ratio. Finally, the **OFF** setting turns the channel C signal off altogether.

D Pan   [L, 99:1…1:99, R, OFF]

This parameter appears when **Serial**, **Parallel1,** or **Parallel2** is selected as the effect placement. It sets the stereo position of the output from channel D. (You can assign signals to this channel using the Effect Send Level D parameter of the arrangement, backing sequence, song, or program you are editing.)

The details of this setting are the same as for the C Pan parameter, above.

FX1 Level (L, R)   [0…9]

These parameters appear only when **Parallel3** is selected as the effect placement. They set the levels at which the signals from FX1 are fed into channels A and B, respectively. (You can assign signals to FX1 using the Effect Send Level C parameter of the arrangement, backing sequence, song, or program you are editing.)

Higher values increase the levels at which the signals are fed into channels A and B. A setting of **0** will turn the corresponding signal off.

FX2 Level (L, R)   [0…9]

These parameters appear only when **Parallel3** is selected as the effect placement. They set the levels at which the signals from FX2 are fed into channels A and B, respectively. (You can assign signals to FX2 using the Effect Send Level D parameter of the arrangement, backing sequence, song, or program you are editing.)

Higher values increase the levels at which the signals are fed into channels A and B. A setting of **0** will turn the corresponding signal off.

Chapter 8
Global Mode

In Global mode you will find several settings that affect the overall performance of the *i2/i3*. These include keyboard tuning parameters, foot pedal and external controller settings that set the *i2/i3* response to connected foot pedals and foot switches, and MIDI parameters that control how the *i2/i3* sends and responds to MIDI information.

This mode also lets you edit the two *i2/i3* user drum kits. You can assign drum sounds to different notes on the keyboard, then adjust the pitch, volume, and stereo position of each to suit your preferences. You can also sort or initialize your user kits to make editing easier, or load data from ROM when you want to restore the user drum kits to their factory settings.

Finally, Global mode includes functions that let you load data from style cards into the *i2/i3* memory, or transmit bulk data dumps from the *i2/i3* to a MIDI device capable of receiving it.

Global mode has nine display pages, whose functions are summarized in the table on the following page of this manual. You can switch through these pages using the PAGE+ and PAGE– keys, or by pressing the DATA ENTRY key corresponding to the number of the desired page while holding down the GLOBAL key.

The general procedures for editing parameters and using utility functions are outlined in Chapter 3 of the Player's Guide. Specific procedures for the use of some functions in this mode may be found in Chapter 6 of that manual.

Unlike program or arrangement data, you do not have to write Global mode settings into memory. With the exception of three settings—the Xpose Pos parameter described on page 211, and the Local Control and Clock Source parameters described on page 212—the *i2/i3* will remember all of your Global mode settings, even when the power is turned off.

The *i2/i3* also saves its global settings to disk whenever you create a program file using the Save All Data or Save All Program functions described on page 240. You can reload all global data using the Load All Program function described on page 235.

Functions in Global mode

The table below shows the layout of the *i2/i3* Global mode. For each display page we list the page title, a brief outline of the page's contents, and the numbers of the pages in this manual where you will find these contents described.

Page	Title	Contents	Description
1	GLOBAL PARAMETERS 1	Master tuning and MIDI configuration	211–212
		MIDI channel settings	213
		MIDI data filters	214
2	GLOBAL PARAMETERS 2	Foot pedal settings	215–217
		Response curves and memory protect	218–219
3	EC5 EXTERNAL CONTROLLER	EC5 foot controller settings	220–221
4	SCALE	Main, sub, and user scale settings	222–223
5	USER KIT 1	Parameters for User Kit 1	224–226
6	USER KIT 2	Parameters for User Kit 2	Same as above.
7	DRUM KIT UTILITY	Load One Drum Kit	227
		Sort Drum Kit	227
		Initialize Drum Kit	228
8	STYLE CARD	Load All Style	229
		Load One Style	229
9	DATA DUMP	Dump Program	230
		Dump Drum Kit	230
		Dump Global	230
		Dump Song	230
		Dump Style	230
		Dump Arrangement	230
		Dump B. Sequence	231
		Dump All Data	231

GLOBAL PARAMETERS 1

On the first Global mode display page you will find a number of parameters that affect the *i2/i3*'s overall performance. In addition to the Master Tune parameter, which adjusts the *i2/i3* tuning, this page contains a variety of MIDI-related parameters.

```
GLOBAL 1:GLOBAL PARAMETERS 1

Master Tune  = +00   Xpose Pos: POST-KBD
Local Control: ON    Clock Source: INT
MIDI Channel:
  Global/Keyboard=01   Drum=10     Perc=11
  Bass=12   Acc1=13    Acc2=14     Acc3=15
PROG:ENA   AFTT:ENA    CTRL:ENA    EXCL:DIS
```

MIDI channel parameters
MIDI filter parameters

```
A    B    C    D    E    F    G    H
```
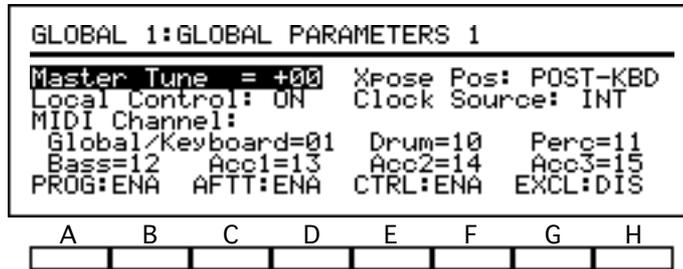
On the first two lines of the display are the Master Tune, Xpose Pos, Local Control, and Clock Source parameters, which are described below. The MIDI Channel parameters on the fourth and fifth lines of the display are explained in the next section. The MIDI Filter parameters on the bottom line of the display are described on page 214.

Master Tune   [–50…+50]

This parameter adjusts the pitch of all notes played by the *i2/i3*. You can raise or lower the tuning 50 cents (one half of one semitone) to adjust it to that of other instruments.

This pitch adjustment will not affect the pitch of notes that connected MIDI instruments play in response to note messages transmitted from the MIDI OUT jack.

Xpose Pos   [POST-KBD, PRE-OSC]

This parameter determines whether the OCTAVE and TRANSPOSE keys will transpose note information from the keyboard *before* or *after* the notes are transmitted from the MIDI OUT jack.
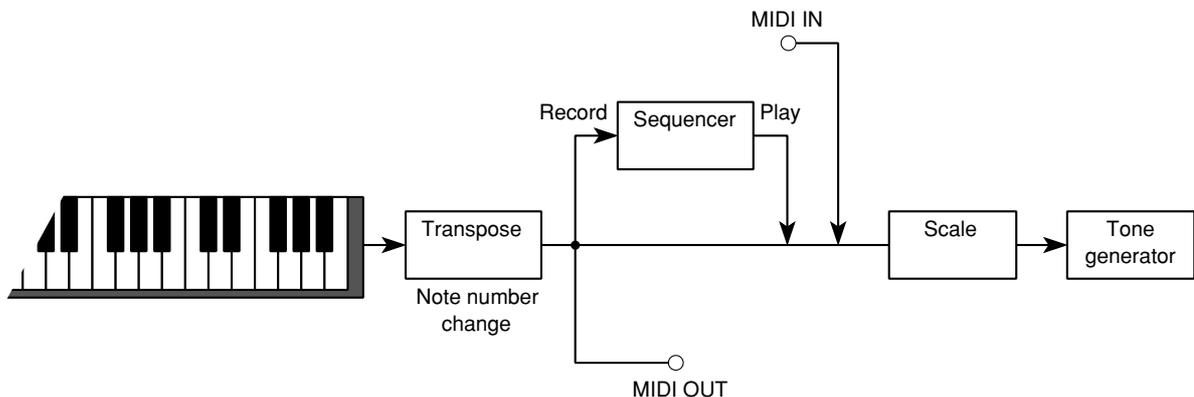
When you set this parameter to **POST-KBD**, the *i2/i3* will transpose notes as they leave the keyboard. It will thus send transposed notes to both the tone generator and to any instruments connected to the MIDI OUT jack. It will not transpose any notes it receives from the MIDI IN jack.
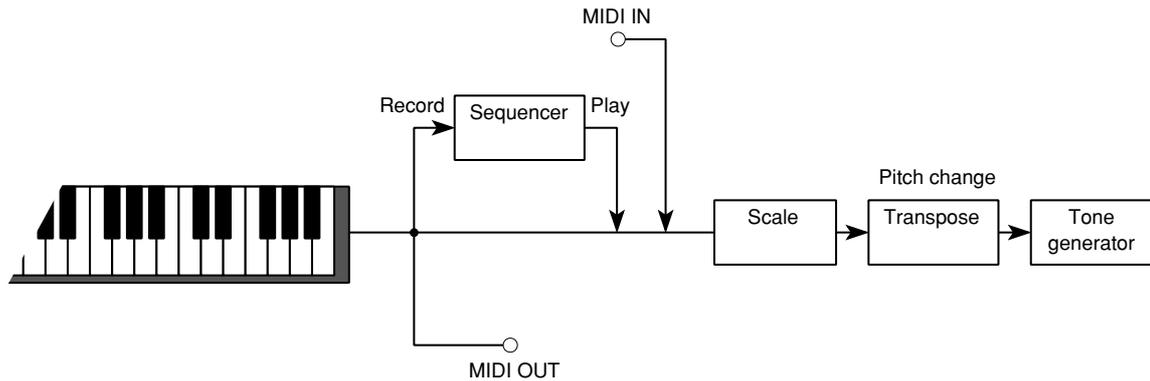
When you use the **PRE-OSC** setting, the *i2/i3* will transpose the notes just before they reach the tone generator. It will thus play transposed notes, but send untransposed data from the MIDI OUT jack. It will also transpose any notes it receives from the MIDI IN jack.

☞ **Xpose Pos and the Scale settings**

As the above illustrations show, the Xpose Pos setting also affects the sequence of keyboard transposition relative to the Scale parameters described on page 222. Depending on the scale you use, this could produce unexpected results. Please refer to page 144 of the Player's Guide for an explanation of the relationship between these settings.

Local Control   [ON, OFF]

This parameter determines whether the *i2/i3* tone generator will respond to messages from local controllers.

When this parameter is set to **ON**, the *i2/i3* will respond normally to the local controllers (which include the keyboard, joystick, and foot pedals.)

Switching this to **OFF** will disconnect the tone generator from the local controllers. It will also prevent the *i2/i3* sequencer from recording any data from these controllers. Likewise, the *i2/i3* music processor will not be able to scan the keyboard for chords.

You should use the **OFF** setting only to disable local control when you are using the *i2/i3* keyboard to control other MIDI devices and don't want it to send the notes you play to its own tone generator. The *i2/i3* will set this parameter to **ON** whenever you turn the power on.

Clock Source   [INT, EXT]

This lets you synchronize the *i2/i3* to another MIDI sequencer.

When this parameter is set to **INT**, the *i2/i3* will set its own tempo. It will also transmit MIDI clock messages from the MIDI OUT jack whenever it is in a sequencing mode, so you can synchronize other MIDI sequencers to the *i2/i3*.

Switching this parameter to **EXT** will tell the *i2/i3* to synchronize to MIDI clock data it receives from another sequencer. The *i2/i3* will also respond to received start, stop, continue, song select, and song position messages.

The *i2/i3* tempo settings will have no effect—meaning that the *i2/i3* will not be able to play sequence data on its own—when you use the **EXT** setting. You should not select this setting if you have not connected a MIDI sequencer to the *i2/i3* MIDI IN jack.

The *i2/i3* will automatically set this parameter to **INT** whenever you turn the power on.

MIDI Channels

The *i2/i3* has seven MIDI Channel parameters that let you select the channels the *i2/i3* will use to send and receive MIDI messages. You may want to adjust these settings to match those of other instruments you connect to the *i2/i3* in order to ensure proper communication.

MIDI channel parameters {

```
GLOBAL 1:GLOBAL PARAMETERS 1

Master Tune = +00    Xpose Pos: POST-KBD
Local Control: ON    Clock Source: INT
MIDI Channel:
 Global/Keyboard=01    Drum=10      Perc=11
 Bass=12    Acc1=13    Acc2=14     Acc3=15
PROG:ENA    AFTT:ENA   CTRL:ENA    EXCL:DIS
```

| A | B | C | D | E | F | G | H |
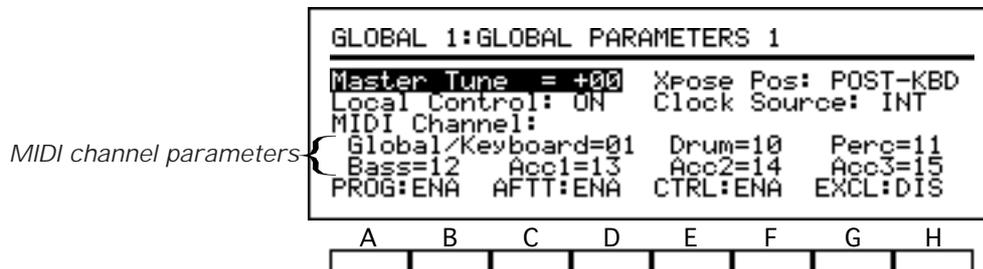
Please note that these settings pertain primarily to the Program, Arrangement Play, and Backing Sequence modes. When you play the *i2/i3* in Song mode, the *i2/i3* will send and receive note and program change information on the channels you select using the MIDI Channel parameters on the CH/WINDOW display page (see page 89 of this manual).

Global/Keyboard   [1…16]

The first MIDI Channel parameter selects the *i2/i3*'s basic MIDI channel. It is normally set to channel **01**. The *i2/i3* will use this channel to transmit MIDI messages for the notes you play on its keyboard.

In Program or Edit Program modes, the *i2/i3* will play notes with the currently selected program when it receives note messages on this channel. In Arrangement Play, and Backing Sequence modes, it will play the programs selected for the keyboard timbres.

In any of the above modes, the *i2/i3* will change the current program selection in response to program change messages it receives on this channel, as long as it is not filtering program change messages. (See the description of the MIDI Filter parameters in the next section).

The *i2/i3* will also use the Global/Keyboard channel to receive system exclusive messages, as long as these messages are not being filtered. It will ignore system exclusive messages arriving on any other channel.

Other MIDI Channels   [1…16]

The remaining six MIDI Channel parameters apply only to the Arrangement Play, Edit Style, and Backing Sequence modes. They select the channels the *i2/i3* will use to transmit data for the backing tracks. They are normally set to channels **10** through **15**.

The *i2/i3* will also respond to note information and program change messages it receives on these channels when it is in one of these three modes.

For details on the backing tracks, please see the chapters describing the Arrangement Play, Edit Style, and Backing Sequence modes.

MIDI Filter

The bottom line of the GLOBAL PARAMETERS 1 display contains four parameters that let you filter incoming and outgoing MIDI data. You can use these filters to prevent the *i2/i3* from responding to certain types of MIDI data, such as program change and system exclusive messages.

MIDI filter parameters

```
GLOBAL 1:GLOBAL PARAMETERS 1

Master Tune = +00   Xpose Pos: POST-KBD
Local Control: ON   Clock Source: INT
MIDI Channel:
 Global/Keyboard=01   Drum=10    Perc=11
 Bass=12    Acc1=13   Acc2=14   Acc3=15
PROG:ENA    AFTT:ENA   CTRL:ENA   EXCL:DIS
```

```
 A    B    C    D    E    F    G    H
```
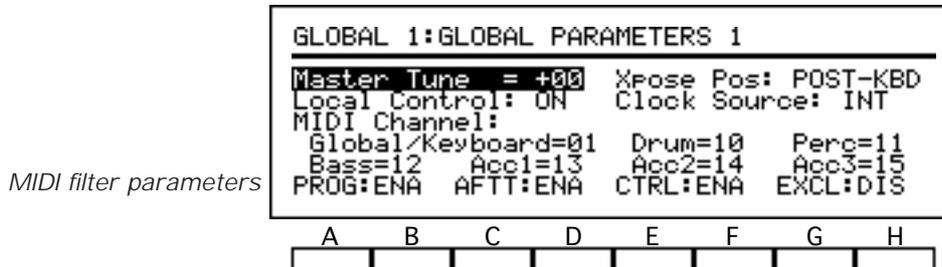
You may also find them useful when recording, if you need to screen out memory-consuming messages—such as aftertouch and control change data—that you don't need.

You can filter out a particular data type by setting the appropriate parameter to **DIS**. The *i2/i3* will neither record nor transmit data types which you disable with this setting. When playing back sequence data that includes a disabled data type, however, it will transmit the disabled data normally.

Program Change (PROG)   [DIS, ENA, NUM]

This parameter controls the *i2/i3*'s handling of program change messages. The *i2/i3* will handle program change messages normally when this parameter is set to **ENA**. Setting it to **DIS** will prevent the *i2/i3* from receiving or transmitting program changes on any channel. Setting it to **NUM** will instruct the *i2/i3* to ignore MIDI Bank Change messages.

Aftertouch (AFTT)   [DIS, ENA]

This controls the *i2/i3* response to aftertouch. The *i2/i3* will handle aftertouch normally when this parameter is set to **ENA**. You can set it to **DIS** to filter out unwanted aftertouch when recording from the *i2/i3* keyboard or another MIDI device. Doing so will also prevent the *i2/i3* from transmitting aftertouch data.

Control Change (CTRL)   [DIS, ENA]

This controls the *i2/i3* response to control changes such as pitch bend, volume, sustain pedal, and other controller messages. The *i2/i3* will handle these messages normally when this parameter is set to **ENA**. You can set it to **DIS** to filter out unwanted control changes when recording from the *i2/i3* keyboard or another MIDI device. Doing so will also prevent the *i2/i3* from transmitting these messages to another device.

Exclusive (EXCL)   [DIS, ENA]

This controls the *i2/i3*'s handling of system exclusive parameter change messages. These messages are used mainly by personal computer software designed to facilitate editing of the *i2/i3* program data.

The *i2/i3* will accept such messages, allowing the computer to change the *i2/i3*'s data, when this parameter is set to **ENA**. Setting it to **DIS** will prevent your *i2/i3* parameters from being changed.

GLOBAL PARAMETERS 2

The parameters on the first three lines of Global mode Page 2 let you assign functions to the DAMPER and ASSIGN PDL/SW jacks on the rear of the *i2/i3*. If you will be using an EC5 External Controller to control your *i2/i3*, you can select its functions on Page 3 of the display. (See page 220 for details.)

```
GLOBAL 2:GLOBAL PARAMETERS 2

Damper Sw Polarity : KORG (-)
Assignable Pedal 1 : OFF
Assignable Pedal 2 : OFF
Curve:    Velocity = 5  Aftertouch = 5
Protect:
Program:OFF Arrangement:OFF Style:OFF
```
```
  A    B    C    D    E    F    G    H
```

Assignable pedal parameters
Response curve settings
Memory protect settings
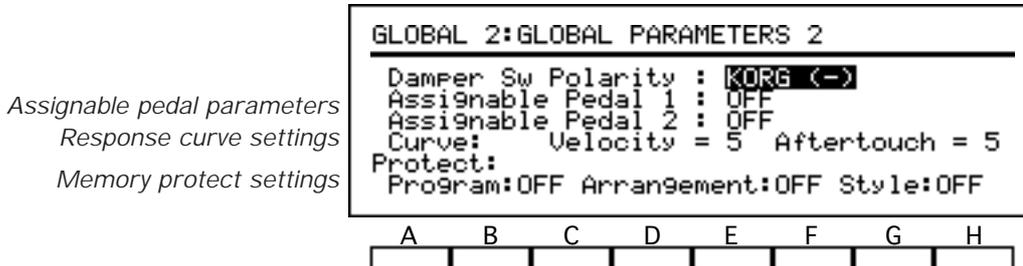
This display page also contains Curve parameters that adjust the response of the *i2/i3* keyboard to velocity and aftertouch, and Protect parameters that you can use to safeguard your program, style, and arrangement data from accidental deletion. These parameters are described in the following section.

Damper Sw Polarity   [REVERSE (+), KORG (–)]

You can connect a footswitch to the DAMPER jack on the rear of the *i2/i3* for use as a sustain pedal. If you press this switch before releasing a note, the note will continue to play as though you had not released it.

You should set this parameter to match the polarity of your footswitch. Most Korg footswitches, such as the DS-1 and the PS-1, have a switch polarity that is known as *normally open*. Select the **KORG (–)** setting when using one of these pedals.

The Korg DS-2 and many pedals made by other manufacturers use the opposite, or *normally closed*, polarity. Select the **REVERSE (+)** setting for these pedals.

If you will use one of the pedals of a Korg PS-2 as a damper, select **KORG (–)** for the right-hand jack and **REVERSE (+)** for the left-hand jack of each pedal. If you have a pedal whose polarity you are not sure of, try using it with one setting, then switch it to the other if the *i2/i3* holds notes when you're not pressing the pedal.

Assignable Pedal 1/2   [see table]

The two ASSIGN PDL/SW jacks on the rear of the *i2/i3* let you control a variety of *i2/i3* functions with footswitches or expression pedals. If you connect a pedal to one of these jacks, you should set its function using the corresponding Assignable Pedal parameter. Select pedal functions from the tables on the next page.

Most performers will prefer to use a footswitch with the *normally open* polarity—such as the Korg PS-1—for the functions in the Footswitch Functions table. If you use a *normally closed* footswitch, you will have to hold the footswitch down while playing, then release it to execute the assigned function.

We recommend that you use only the Korg EXP-2 to control the functions in the Expression Pedal Functions table.

If you change these settings, be sure to connect appropriate pedals before playing. If you want to play without connecting a pedal to one of these jacks, you should set its Assignable Pedal parameter to **OFF**.

Footswitch Functions

Setting	Function
OFF	None
START/STOP	Same as START/STOP key
SYNC START/STOP	Same as SYNCHRO START/STOP key
RESET	Same as RESET key
INTRO/ENDING 1	Same as INTRO/ENDING 1 key
INTRO/ENDING 2	Same as INTRO/ENDING 2 key
FILL 1	Same as FILL 1 key
FILL 2	Same as FILL 2 key
VARIATION 1	Same as VARIATION 1 key
VARIATION 2	Same as VARIATION 2 key
VARIATION 3	Same as VARIATION 3 key
VARIATION 4	Same as VARIATION 4 key
CHORD HOLD	Same as CHORD HOLD key
BASS INVERSION	Same as BASS INVERSION key
SCALE CHANGE	Switches between main and sub scales (see page 222)
ARR/STYLE UP	Selects next arrangement/style
ARR/STYLE DOWN	Selects previous arrangement/style
PROGRAM UP	Selects next program
PROGRAM DOWN	Selects previous program
VARIATION UP	Selects next variation
VARIATION DOWN	Selects previous variation
PUNCH IN/OUT	Punch-in recording switch (see page 84)
EFFECT 1 ON/OFF	FX1 Switch parameter (see page 157)
EFFECT 2 ON/OFF	FX2 Switch parameter (see page 157)
DRUM MUTE	Mutes the drum track
PERC MUTE	Mutes the percussion track
BASS MUTE	Mutes the bass track
ACC1 MUTE	Mutes accompaniment Track 1
ACC2 MUTE	Mutes accompaniment Track 2
ACC3 MUTE	Mutes accompaniment Track 3

Expression Pedal Functions

Setting	Function
VOLUME	Standard volume of program or selected track
EXPRESSION	Relative volume of program or selected track
VDF CUTOFF	VDF cutoff frequency (brightness)
EFFECT CONTROL	Dynamic modulation of effects
DATA ENTRY	Entry of parameter values (same as VALUE dial)

Response Curves and Memory Protect

Following the Assignable Pedal parameters on Global mode Page 2, you will find a pair of Curve parameters that adjust the response of the *i2/i3* to key velocity and aftertouch. Also, three parameters on the bottom of this page let you safeguard your program, style, and arrangement data from accidental deletion.

Response curve settings

Memory protect settings

```
GLOBAL 2:GLOBAL PARAMETERS 2

Damper Sw Polarity : KORG (-)
Assignable Pedal 1 : OFF
Assignable Pedal 2 : OFF
Curve:    Velocity = 5  Aftertouch = 5
Protect:
Program:OFF Arrangement:OFF Style:OFF
```

```
  A    B    C    D    E    F    G    H
```
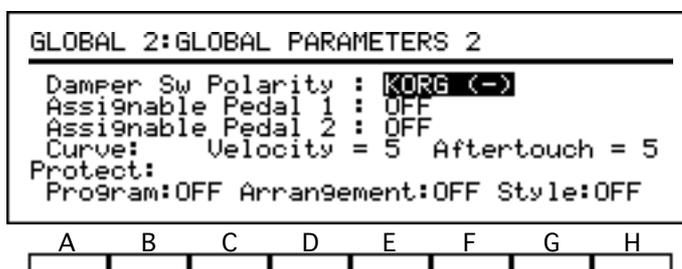
The response curves you select on this page will adjust the response of the *i2/i3* keyboard to the velocity and aftertouch you apply when playing. This adjustment will affect the data that the keyboard sends to the *i2/i3* tone generator and transmits from the MIDI OUT jack. It does not affect data received from the MIDI IN jack.

Curve (Velocity)   [1…8]

This parameter lets you select one of eight curves that modify the effect of key velocity on the volume or tone of the program you're playing. The curves adjust the performance of the *i2/i3* as shown in the illustration below.
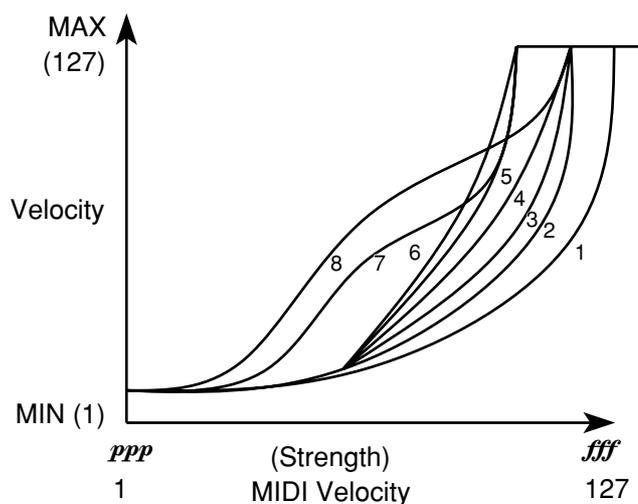
Curve (Aftertouch)   [1…8]

This parameter lets you select one of eight curves that modify the effect of key pressure on the volume, tone, or pitch of the program you're playing. Curve 8, not pictured in the illustration below, produces random changes in aftertouch and can be used for special effects.
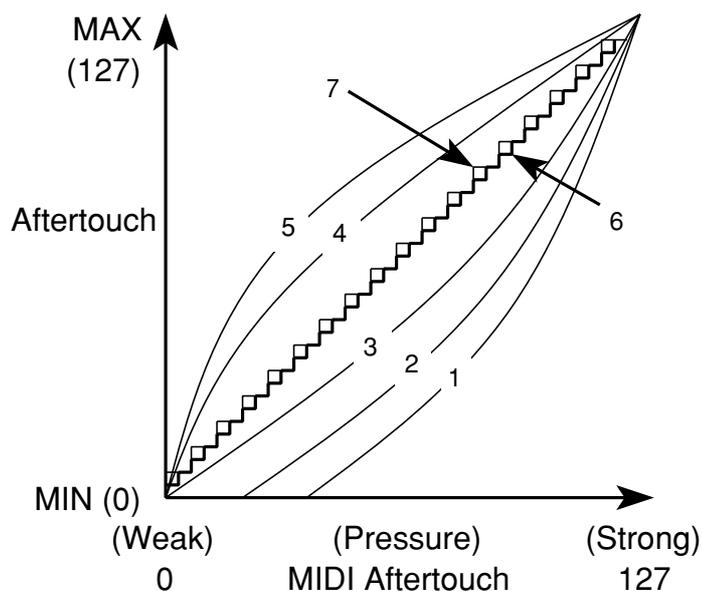
Protect   [OFF, ON]

You can use the three parameters on the bottom line of the display to protect your *i2/i3* internal data from accidental deletion.

Parameter	Protected data
Protect (Program)	All user programs in bank D
	User drum programs Dr7 and Dr8
Protect (Arrangement)	All arrangements
Protect (Style)	User styles U1 through U4

When one of these parameters is set to **ON**, the *i2/i3* will not let you overwrite the data in the corresponding memory area. This will prevent you from using functions such as Write Program (see page 152) and Write Arrangement (see page 16), as well as any of the recording or editing functions in Edit Style mode.

The **ON** setting will also prevent you from loading data from style cards, factory data ROM, or disks. If you attempt to load data to a protected memory area, the *i2/i3* will display a message explaining that it cannot accept the data.

The *i2/i3* will ignore any attempts by other MIDI devices to dump data to a protected memory area.

EC5 EXTERNAL CONTROLLER

The parameters on Global mode Page 3 let you assign functions to the pedals of an EC5 External Controller which you have connected to the EC5 jack on the rear of the *i2/i3*. To use a damper pedal or assignable foot controllers, use the parameters on Page 2 of the display. (See page 215 for details.)

```
GLOBAL 3:EC5 EXTERNAL CONTROLLER

Switch A: START/STOP
Switch B: INTRO/ENDING 1
Switch C: DRUM MUTE
Switch D: PROGRAM UP
Switch E: RESET
```

	A		B		C		D		E		F		G		H	
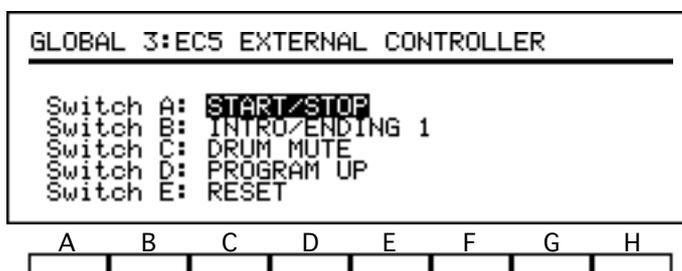
The EC5 External Controller is an optional control device consisting of five footswitches, which Korg has made available especially for use with the *i2/i3*. Be sure to plug your EC5 into the EC5 jack before using any of the parameters on this display page. (See page 2 of the Player's Guide for instructions regarding the EC5.)

Switch A…E

These five parameters assign functions to the corresponding pedals on the EC5 External Controller. Select pedal functions from the table below.

EC5 Functions

Setting	Function
OFF	None
START/STOP	Same as START/STOP key
SYNC START/STOP	Same as SYNCHRO START/STOP key
RESET	Same as RESET key
INTRO/ENDING 1	Same as INTRO/ENDING 1 key
INTRO/ENDING 2	Same as INTRO/ENDING 2 key
FILL 1	Same as FILL 1 key
FILL 2	Same as FILL 2 key
VARIATION 1	Same as VARIATION 1 key
VARIATION 4	Same as VARIATION 2 key
VARIATION 3	Same as VARIATION 3 key
VARIATION 4	Same as VARIATION 4 key
CHORD HOLD	Same as CHORD HOLD key
BASS INVERSION	Same as BASS INVERSION key
SCALE CHANGE	Switches between main and sub scales
ARR/STYLE UP	Selects next arrangement/style
ARR/STYLE DOWN	Selects previous arrangement/style
PROGRAM UP	Selects next program
PROGRAM DOWN	Selects previous program

Setting	Function
VARIATION UP	Selects next variation
VARIATION DOWN	Selects previous variation
PUNCH IN/OUT	Punch-in recording switch
EFFECT 1 ON/OFF	FX1 Switch parameter
EFFECT 2 ON/OFF	FX2 Switch parameter
DRUM MUTE	Mutes the drum track
PERC MUTE	Mutes the percussion track
BASS MUTE	Mutes the bass track
ACC1 MUTE	Mutes accompaniment Track 1
ACC2 MUTE	Mutes accompaniment Track 2
ACC3 MUTE	Mutes accompaniment Track 3

SCALE

The two parameters in the upper left corner of Global mode Page 4 let you specify the basic tuning temperaments used by the *i2/i3* tone generator. You can select main and sub scales, then switch between them using a footswitch or EC5 External Controller, or via MIDI.

```
GLOBAL 4:SCALE
─────────────────────────────────
Main Scale: EQUAL TEMPERAMENT
Sub Scale:  EQUAL TEMPERAMENT



                          CPY
```

A	B	C	D	E	F	G	H
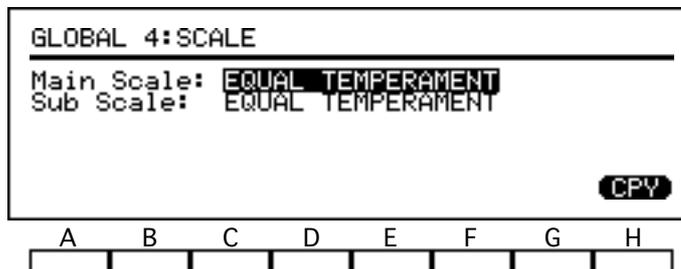
In addition to a variety of traditional temperaments—many of which let you optimize the *i2/i3* tuning for playing a selected key—the *i2/i3* lets you create your own scale. When you select **USER SCALE** for either of the scale settings, the *i2/i3* will display a keyboard graphic that you can use to adjust the tuning of each key.

Main Scale

This parameter lets you select the *i2/i3*'s normal temperament. If you select a setting other than **EQUAL TEMPERAMENT** or **EQUAL TEMPERAMENT2**, the *i2/i3* will display a Key parameter to the right of that setting so you can select a tonic key for the temperament.

The **EQUAL TEMPERAMENT** setting represents the most widely used temperament. With this temperament, every semitone consists of an equal change in pitch.

EQUAL TEMPERAMENT2 adds slight, random pitch variations to an equal temperament. It is useful when simulating acoustic instruments with natural irregularities in pitch.

The **PURE MAJOR** setting perfectly tunes major chords in the selected tonic key. **PURE MINOR** does the same for minor chords.

The **ARABIC** setting simulates the quarter tone scales of Arabic music. Set the Key parameter to **C** for *rast do/bayati re* tuning, **D** for *rast re/bayati mi*, **F** for *rast fa/bayati sol*, **G** for *rast sol/bayati la*, and **A♯** for *rast si♭/bayati do*.

The **PYTHAGOREAN** setting simulates an ancient Greek tuning that is useful for playing melodies. **WERKMEISTER** is an essentially equal temperament used in the latter Baroque period. **KIRNBERGER** is a harpsichord tuning developed in the 18th century.

SLENDRO and **PELOG** simulate Indonesian gamelan tunings with five notes and seven notes per octave, respectively. Play keys C, D, F, G, and A with the former, and only the white keys with the latter, when the Key parameter is set to **C**. (Other notes are set to standard pitches of the **EQUAL TEMPERAMENT** setting.)

The **USER SCALE** setting lets you adjust the pitch of each key over a range of ± 50 cents. See the description of the User Scale parameters, below.

☞ **Xpose Pos and the Scale settings**

When you use a Scale setting other than **EQUAL TEMPERAMENT** or **EQUAL TEMPERAMENT2**, the TRANSPOSE keys may shift the tuning away from the desired tonic key, depending on your setting for the Xpose Pos parameter. Please refer to page 144 of the Player's Guide for an explanation of the relationship between these settings.

Sub Scale

This lets you select an alternative temperament. If you select a setting other than **EQUAL TEMPERAMENT** or **EQUAL TEMPERAMENT2**, the *i2/i3* will display a Key parameter to the right of that setting, so you can select a tonic key for the temperament.

The details of the Sub Scale settings are the same as those described for the Main Scale parameter, above.

Key   [C…B]

The *i2/i3* will display Key parameters next to the Main and Sub Scale parameters, described above, when you select a scale setting other than **EQUAL TEM - PERAMENT** or **EQUAL TEMPERAMENT2**. Use these parameters to choose a tonic key for the temperament you've selected.

User Scale   [–50…+50]

When you select **USER SCALE** for either of the scale settings, the *i2/i3* will display a keyboard graphic that you can use to adjust the tuning of each key.

To create your own original temperament, move the cursor among the twelve keys in this graphic and adjust their tuning as desired. You can raise or lower the pitch of each note as much as 50 cents, or one-half semitone, from their standard (equal temperament) pitches. The *i2/i3* will apply these settings to the entire keyboard range.

☞ **Easy variations on the preset scales**

If you want to create a variation on one of the preset scales, you can select the desired scale for either the Main Scale or Sub Scale parameter, then press cursor key H to copy its data to the user scale. You can then edit the user scale settings to suit your taste.

USER KIT

The *i2/i3* memory contains six ROM drum kits and two user drum kits, which it uses as the waveform sources for its drum programs. The user drum kits let you assign drum sounds to different notes on the keyboard, then adjust the pitch, volume, decay, stereo position, and effect send levels separately for each.

```
┌─────────────────────────────────────────────────┐
│ GLOBAL 5:USER KIT 1    ▶Dance Kick               │
│                                                  │
│ #00  006 C2    +000 L+60 D+00 ---                │
│ #01  036 C#2   +000 L-24 D-82 ---                │
│ #02  030 D2    +000 L+51 D+00 ---                │
│ #03  094 D#2   +000 L+24 D-57 ---                │
│ #04  022 E2    +000 L-09 D+00 ---                │
│ #05  060 F2    -074 L+00 D-30 ---    ◼◼▶         │
└─────────────────────────────────────────────────┘
     A    B    C    D    E    F    G    H
```

Index → points to #00

Drum sound → points to 094 on #03

The parameters for User Kit 1 are on Page 5 of the Global mode display; those for User Kit 2 are on Page 6. The organization of these two display pages are the same. The parameters for each drum kit are divided between two sub-pages, which you can switch between by pressing cursor key H.

```
┌─────────────────────────────────────────────────┐
│ GLOBAL 5:USER KIT 1    ▶Dance Kick               │
│                                                  │
│ #00  006 C2    Pan=CNT C=1 D=0                   │
│ #01  036 C#2   Pan=CNT C=4 D=0                   │
│ #02  030 D2    Pan=CNT C=2 D=0                   │
│ #03  094 D#2   Pan=L03 C=4 D=0                   │
│ #04  022 E2    Pan=CNT C=2 D=0                   │
│ #05  060 F2    Pan=L08 C=2 D=0       ◀◼◼         │
└─────────────────────────────────────────────────┘
     A    B    C    D    E    F    G    H
```

When you select a drum kit as the waveform source for a program, the *i2/i3* will play the kit using that program's VDA and VDF settings (see Chapter 6). Like any other program, the drum program will use its own effect settings when you play it in Program mode, or those of any track that plays it in a sequencing mode.

If you play the keyboard while editing a user drum kit in Global mode, the *i2/i3* will play all instruments using the parameters of the program you last selected in Program mode.

Index (#)   [0…59]

This setting lets you select a drum kit instrument for editing.

When you move the cursor to an index number, the *i2/i3* will show the name of the drum sound assigned to that index in the upper right corner of the display. (See the Drum Sound parameter for details.)

Use the CURSOR POSITION ▲ and ▼ keys to scroll through the index numbers. You can also select the index number for an instrument you want to edit by hitting the key for that instrument while holding down cursor key A.

Drum Sound   [---, 000…163]

These parameters select the drum sounds used by the corresponding instruments.

You can assign one of 164 drum sounds to each index. (You will find a list of the available drum sounds in the Performance Notes that accompanied this manual.) Select the "——" setting for an index number when you don't want the assigned key to play its own drum sound. It will then play the drum sound of the next key up on the keyboard.

When you move the cursor to this parameter, the *i2/i3* will show the name of the drum sound assigned in the upper right corner of the display. The words "No Drum Sound" will appear for those indexes that have been given a value of "——".

Key [C0…G8]

These parameters let you assign a key from **C0** to **G8** to each of the sixty indexes selected by the Index parameters.

The *i2/i3* will not let you select a key that has already been assigned to another index number. You can, however, assign different keys to several indexes that play the same drum sound. You can then set those keys to play that sound at different pitches or pan positions using the Tune and Pan parameters.

Any key that has not been assigned to an index will play the same drum sound as the next higher key, but at a pitch determined by the Scale parameter. This feature lets you create ranges of chromatically tuned instruments within a drum kit.

You can set this parameter by pressing a key on the *i2/i3* keyboard while holding down cursor key C.

☞ **Drum kit keys and the Octave parameter**

The Key parameters show the names of the notes that will play their corresponding instruments at the drum program's standard Octave setting of **8′**. If you change the Octave parameter, the notes played will shift up or down. Although the displayed key assignments will also change, hitting a key while holding down cursor key A will not call up the desired drum instrument.

Since this could lead to confusion, you should always be sure to select the program that will play the user kit—and set this program's Octave parameter to **8′**—*before* you begin editing.

☞ **To view a kit in keyboard order**

If you find you want to view a drum kit's instruments in keyboard order, you can sort it by pressing cursor key H while holding down key A. The *i2/i3* will ask for confirmation, then sort the kit—renumbering the indexes to match the order of their assigned keys—and display it in the new order.

This function is the same as the Sort Drum Kit function on Page 7 of the Global mode display. Please see the description of that function in the following section for further information.

Tune [–120…+120]

These parameters adjust the pitch of the corresponding drum sounds.

A drum sound will play at its standard pitch when its Tune parameter is set to **0**. Raising or lowering this parameter will raise or lower the instrument's pitch by ten cents (that is, one-tenth of a semitone) for each step, to a maximum of one octave either way.

Level (L) [–99…+99]

These parameters adjust the output levels for their corresponding instruments.

Positive values will raise an instrument's volume relative to the program's Level setting; negative values will lower it.

Decay (D) [–99…+99]

These parameters adjust the decay time for their corresponding instruments.

Positive values will lengthen an instrument's decay relative to the program's VDA1 EG Decay Time setting; negative values will shorten it.

Exclusive Group   [---, EX1…EX6, SLF]

These parameters let you create six groups of instruments that will play mono-phonically rather than polyphonically.

All of the drum sounds assigned to the same group will play as if they were one instrument. For example, you might set this parameter to **EX1** for both the open and closed hi-hat sounds so that the closed sound will cut off the open sound, just as it does with a real hi-hat.

```
GLOBAL 5:USER KIT 1    ▶Exclusive Group

#05   060 F2    -074 L+00 D-30 ---
#06   048 F#2   +000 L+20 D+00 EX1
#07   060 G2    -034 L+10 D-32 ---
#08   050 G#2   +000 L-15 D-86 EX1
#09   060 A2    +000 L+10 D-34 ---
#10   049 A#2   +000 L-15 D+00 EX1    ▶
```

A	B	C	D	E	F	G	H

There is also a **SLF** setting for instruments that cut themselves off, but are not affected by other instruments. You can use this setting for sounds such as crash cymbals so that a softly played note will mute a preceding crash.

Set this to "**---**" when you want an instrument to play polyphonically.

Panpot (Pan)   [OFF, L15…L1, CNT, R1…R15]

This parameter sets the stereo position of the instrument. It does this by adjust-ing the levels of the drum sound signal input to the effects system via channels A and B.

The **CNT** setting centers the sound. Settings preceded by an **L** move it to the left, whereas those preceded by an **R** move it to the right. The sound moves far-ther from the center as the numerical value of the setting increases. Finally, an **OFF** setting lets you turn off the output of the instrument to channels A and B altogether.

Effect Send Level (C, D)   [0…9]

These parameters determine the levels of the drum sound signals that are sent to the effects system via channels C and D.

DRUM KIT UTILITY

On the Global mode's DRUM KIT UTILITY page are three functions that ease the task of editing drum kits. You can load the factory preset and user drum kits from ROM; sort the indexes of a drum kit according to note number; or reset a drum kit's parameters to their initial values, so you can build a new kit up from scratch.

```
GLOBAL 7:DRUM KIT UTILITY
▶Load One Drum Kit
 Sort Drum Kit
 Initialize DrumKit

 1:User Kit 1 ➡ 1:User Kit 1    (LOAD)
```
A   B   C   D   E   F   G   H
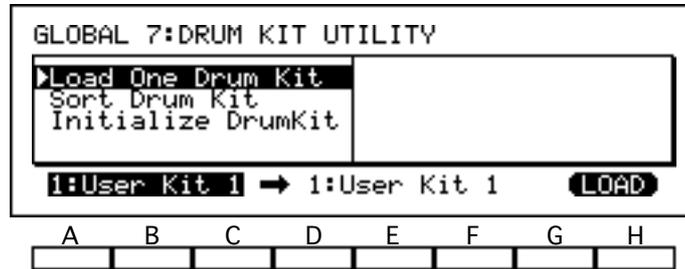
The Sort Drum Kit function on this page is essentially the same as that available on the USER KIT pages.

Load One Drum Kit   *function*

This function loads the data for one drum kit from ROM into the user drum kit memory. You can load data for any of the six factory preset drum kits or the original settings for the two user drum kits.

To use this function, first select the drum kit you want to load above cursor keys A through C. Then select the number of the user kit you want to load it to above keys D through F.

When you are sure of your selections, select [LOAD]. The *i2/i3* will load the drum kit after asking for confirmation.

Sort Drum Kit   *function*

This function lets you sort the instruments in your drum kit according to their keyboard order.

When creating a user kit, you may find it convenient to assign keys to indexes out of the keyboard order. This will make it easy, for example, to compare the settings for instruments you have assigned to the same group using the Exclusive Group parameter.

```
GLOBAL 7:DRUM KIT UTILITY
 Load One Drum Kit
▶Sort Drum Kit
 Initialize DrumKit

 1:User Kit 1                   (SORT)
```
A   B   C   D   E   F   G   H
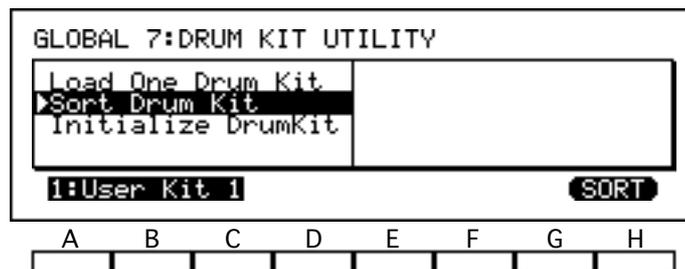
If you find you want to view a kit's instruments in keyboard order, you can use this function to sort the kit. Simply select [SORT]. The *i2/i3* will ask for confirmation, then sort the kit—renumbering the indexes to match the order of their assigned keys—and display it in the new order.

You can access this function directly from any of the USER KIT display pages by pressing cursor key H while holding down the A key.

To use this function, first enter above cursor keys A through C the user drum kit you want to sort, then select [SORT]. The *i2/i3* will sort the drum kit after asking for confirmation.

Initialize Drum Kit *function*

This function lets you reset all of a drum kit's parameters to their initial values. You may find it useful when you want to start programming from a blank slate.

```
GLOBAL 7:DRUM KIT UTILITY

 Load One Drum Kit
 Sort Drum Kit
▶Initialize DrumKit

 1:User Kit 1                    (INIT)
```

A	B	C	D	E	F	G	H

To use this function, first enter above cursor keys A through C the user drum kit you want to initialize, then select [INIT]. The *i2/i3* will initialize the drum kit after asking for confirmation.

STYLE CARD

Page 8 of the Global mode display contains two functions that you can use if you purchase style cards to add to your *i2/i3* repertoire of styles. These functions let you load data for one or more styles from such cards.

```
GLOBAL 8:STYLE CARD
▶Load All Style
 Load One Style

                              ⟨LOAD⟩
```

| A | B | C | D | E | F | G | H |
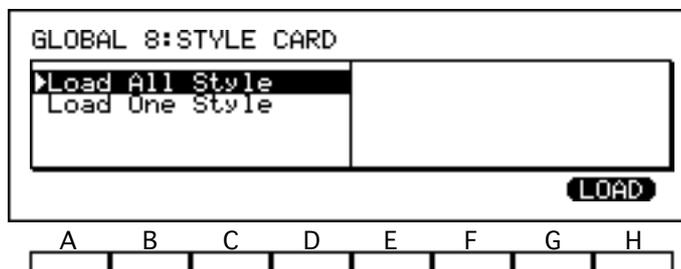
Be sure to insert a card in the STYLE CARD slot before using either of these functions. The *i2/i3* will display a "No card in slot" message if you attempt to load style data without first placing a card in the slot.

Load All Style   *function*

This operation loads four styles from a style card into the *i2/i3* user style memory.

To use this function, just select [LOAD]. The *i2/i3* will load the data after asking for confirmation. Make sure the *i2/i3* does not contain any unsaved style data that you want to keep, as the data for your current user styles will be irrevocably lost when the new data is loaded.

Load One Style   *function*

This operation loads a user style from a style card into the *i2/i3* user style memory.

To use this function, press A or B and select the style you want to load. Then select the user style number that you want to load it to above key C or D.

When you are sure of your choices, select [LOAD]. The *i2/i3* will load the data after asking for confirmation. Make sure the destination you've selected doesn't contain any unsaved style data you want to keep, as its current data will be irrevocably lost when the new style is loaded.

DATA DUMP

The functions on the last page of the Global mode display let you transmit data from the *i2/i3* internal memory to another MIDI device. This bulk dump capability lets you share your *i2/i3* data with another *i2/i3*, or store it in a computer or MIDI data filer that is capable of receiving exclusive data.

```
GLOBAL 9:DATA DUMP
▶Dump Program       Dump Style
 Dump Drum Kit      Dump Arrangement
 Dump Global        Dump B.Sequence
 Dump Song          Dump All Data
                            [DUMP]
```

```
    A    B    C    D    E    F    G    H
  ┌────┬────┬────┬────┬────┬────┬────┬────┐
  └────┴────┴────┴────┴────┴────┴────┴────┘
```
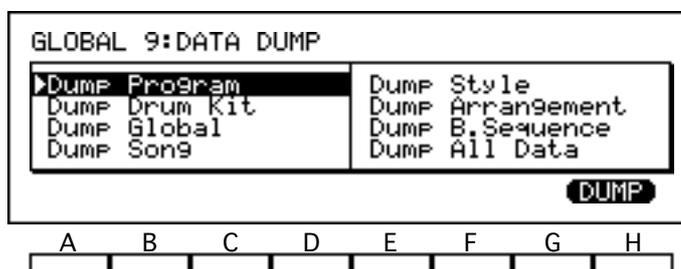
When this display page is showing, the *i2/i3* can transmit and receive MIDI data dumps regardless of the Exclusive filter setting on Page 1 of Global mode. You should make a note of the Global/Keyboard channel setting on that page for future reference. The *i2/i3* will recognize a data dump only if this channel setting is set to the same value as when the dump was originally sent.

The *i2/i3* can receive data dumps at any time, as long as the Exclusive filter parameter mentioned above is set to **ENA**. You should also be sure to turn off the Protect setting for the appropriate memory area, or the *i2/i3* will simply ignore the dump.

For details on the exclusive message data format, refer to the end of this manual.

Dump Program   *function*

This function transmits the data for the 64 programs in bank D, and the two user drum programs Dr7 and Dr8. Select [DUMP] to execute the data dump. The *i2/i3* will transmit the data without asking for confirmation.

Dump Drum Kit   *function*

This function transmits the data for the two user drum kits. Select [DUMP] to execute the data dump. The *i2/i3* will transmit the data without asking for confirmation.

Dump Global   *function*

This function transmits all global parameters, except for the Local Control and Clock Source settings. Select [DUMP] to execute the data dump. The *i2/i3* will transmit the data without asking for confirmation.

Dump Song   *function*

This function transmits data for ten songs. Select [DUMP] to execute the data dump. The *i2/i3* will transmit the data without asking for confirmation.

Dump Style   *function*

This function transmits all the data for the four user styles. Select [DUMP] to execute the data dump. The *i2/i3* will transmit the data without asking for confirmation.

Dump Arrangement   *function*

This function transmits data for 64 arrangements. Select [DUMP] to execute the data dump. The *i2/i3* will transmit the data without asking for confirmation.

Dump B. Sequence   *function*

This function transmits data for ten backing sequences. Select [DUMP] to execute the data dump. The *i2/i3* will transmit the data without asking for confirmation.

Dump All Data   *function*

This function transmits a complete set of all data transmitted by the dump functions above. Select [DUMP] to execute the data dump. The *i2/i3* will transmit the data without asking for confirmation.

Dump type	Size (in bytes)	Approximate time (in seconds)
Program	12371	4.0
Drum Kit	960	0.3
Global	32	—
Song	4231–187088	1.3–58.5
Style	3831–74880	1.2–24.0
Arrangement	9582	3.1
Backing Sequence	2620–185477	0.8–58.0
All Data	33626–287532	10.5–90.0

Chapter 9
Disk Mode

The *i2/i3* is capable of storing nearly all its internal data on convenient 3.5" double-sided, double-density (2DD) disks. It initializes its disks using the MS-DOS™ format, which enables each disk to hold as many as 112 files, up to a maximum capacity of 720 kilobytes.

The *i2/i3* stores its data in a variety of file types, each of which holds a different type of data. It distinguishes between file types by adding an *extension*—a three-letter suffix preceded by a period—to the end of each filename. The table below lists these extensions, together with approximate sizes for each file type.

Data Type	Extension	Size (in kilobytes)
Program and global	.PCG	14
Song and pattern	.SNG	132 (maximum)
Arrangement	.ARR	9
Style	.STY	64 (maximum)
Backing sequence	.BSQ	132 (maximum)
Standard MIDI file	.MID	132 (maximum)
MIDI data	.EXL	64 (maximum)

The first five file types in the table store data in formats particular to the *i2/i3*. The remaining two are standard formats—one for sequence data, the other for bulk dumps and other system exclusive data—used by a variety of personal computers and MIDI devices.

The *i2/i3* has functions that let you create files of each type, or load data from these files. It also has a Set Date For Save function that you can use to adjust the date that will be saved as the creation date for each file (see page 241). Finally, there are utility functions that you can use to delete or rename files, and format disks.

Disk mode divides its functions among the five display pages summarized in the table on the following page of this manual. You can switch through these pages using the PAGE+ and PAGE– keys, or by pressing the DATA ENTRY key corresponding to the number of the desired page while holding down the DISK key.

The general procedures for editing parameters and using utility functions are outlined in Chapter 3 of the Player's Guide.

Functions in Disk mode

The table below shows the layout of the *i2/i3* Disk mode. For each display page we list the page title, a brief outline of the page's contents, and the numbers of the pages in this manual where you will find these contents described.

Page	Title	Functions	Description
1	LOAD ALL	Load All Data	235
		Load All Program	235
		Load All Song	235
		Load All Arrangemt	236
		Load All Style	236
		Load All B.Sequenc	236
2	LOAD ONE	Load One Program	237
		Load One Song	237
		Load One Pattern	238
		Load One Arrangemt	238
		Load One Style	238
		Load One B.Sequenc	238
		Load One Drum Kit	238
		Load Std MIDI File	238
3	SAVE	Save All Data	240
		Save All Program	240
		Save All Song	240
		Save All Arrangemt	241
		Save All Style	241
		Save All B.Sequenc	241
		Save Std MIDI File	241
		Set Date For Save	241
4	MIDI DATA FILER	Load & Transmit	243
		Receive & Save	243
5	UTILITY	Rename File	245
		Delete File	245
		Format Disk	246

If you should encounter an error message while using one of these functions, see Appendix A for an explanation of the message's meaning and suggested remedies. Also, please refer to page 15 of the Player's Guide for cautions regarding the care and handling of floppy disks.

LOAD ALL

The functions on the first display page in Disk mode load all of the data from the file you select into the *i2/i3*. To load a single song, pattern, arrangement, style, backing sequence, drum kit, or program, use the appropriate function from the LOAD ONE page, described in the next section.
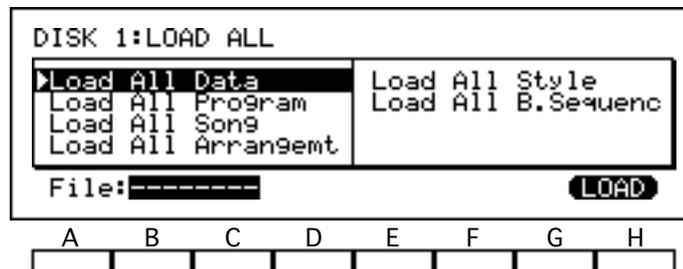
```
DISK 1:LOAD ALL
▶Load All Data      Load All Style
 Load All Program   Load All B.Sequenc
 Load All Song
 Load All Arrangemt

 File:████████          (LOAD)
```

A	B	C	D	E	F	G	H

Be sure to insert a disk in the disk drive before using any of these functions. The *i2/i3* will display a "No disk in drive" message if you attempt to select a file without first placing a disk in the disk drive.

Load All Data   *function*

This function loads a complete set of data files into the *i2/i3*.

To use this function, press B or C, then select a filename. The *i2/i3* will display the names of any program, song, arrangement, style, or backing sequence files it finds on the disk. It will not display the extensions for any of these files.

When you have made your selection, select [LOAD]. The *i2/i3* will load the files after asking for confirmation. Make sure the *i2/i3* does not contain any un-saved data that you want to keep, as *all* your current data will be irrevocably lost when the new data is loaded.

Note: If the disk does not contain a full set of five files bearing the filename you've selected, the *i2/i3* will tell you which files are missing. You can go ahead and load the rest of the files in the incomplete set, if you wish.

This feature can come in handy when you want to load two or more related files—such as a set of songs and the programs they use—with only one load operation. To do this, you must first save the data using the appropriate functions—Save All Song and Save All Program, for example. (See pages 240 through 241 for descriptions of the Save functions.)

Be sure to give each file you save exactly the same filename. The *i2/i3* will then treat these files as an incomplete set of All Data files, and let you load them using the Load All Data function.

Load All Program   *function*

This function loads a program file, containing data for a complete set of 64 programs from bank D, and the two user drum programs Dr7 and Dr8. It also loads global parameters, including the two user drum kits.

The procedure for using this function is the same as that described for the Load All Data function, above. The *i2/i3* will display the names of only the program files on the disk.

Load All Song   *function*

This function loads a song file (which contains a complete set of data for ten songs and their associated patterns) into the *i2/i3*.

The procedure for using this function is the same as that described for the Load All Data function, above. The *i2/i3* will display the names of only the song files on the disk.

Load All Arrangemt *function*

This function loads an arrangement file (which contains a complete set of data for 64 arrangements) into the *i2/i3*.

The procedure for using this function is the same as that described for the Load All Data function, above. The *i2/i3* will display the names of only the arrangement files on the disk.

Load All Style *function*

This function loads a style file (which contains a complete set of data for four styles) into the *i2/i3*.

The procedure for using this function is the same as that described for the Load All Data function, above. The *i2/i3* will display the names of only the style files on the disk.

Load All B.Sequenc *function*

This function loads a backing sequence file (which contains a complete set of data for ten backing sequences) into the *i2/i3*.

The procedure for using this function is the same as that described for the Load All Data function, above. The *i2/i3* will display the names of only the backing sequence files on the disk.

LOAD ONE

The functions on Page 2 of Disk mode load a single song, pattern, arrangement, style, backing sequence, drum kit, or program from the file you select into the *i2/i3*. There is also a function you can use to load sequences saved in the Standard MIDI File format. (See page 143 of the Player's Guide for more information on standard MIDI files.)

To load entire files, use the Load All functions described in the previous section.
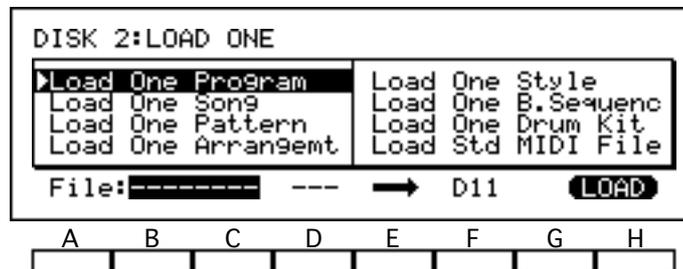
```
┌─────────────────────────────────────────────┐
│ DISK 2:LOAD ONE                              │
│ ┌────────────────────┐                       │
│ │▶Load One Program   │ Load One Style        │
│ │ Load One Song      │ Load One B.Sequenc    │
│ │ Load One Pattern   │ Load One Drum Kit     │
│ │ Load One Arrangemt │ Load Std MIDI File    │
│ └────────────────────┘                       │
│ File:▓▓▓▓▓▓▓▓  ---  ➡  D11      (LOAD)        │
└─────────────────────────────────────────────┘
     A     B     C     D     E     F     G     H
   ┌────┬─────┬─────┬─────┬─────┬─────┬─────┬────┐
   └────┴─────┴─────┴─────┴─────┴─────┴─────┴────┘
```

Be sure to insert a disk in the disk drive before using any of these functions. The *i2/i3* will display a "No disk in drive" message if you attempt to select a file without first placing a disk in the disk drive.

Load One Program   *function*

This function loads a single program from a program file into the *i2/i3*. It does not load any global parameters or drum kit settings.

To use this function, press B or C and select the name of a program file. The *i2/i3* will display the names of all the program files on the disk.

Next, select the bank and program number of the program you want to load above cursor key D, and the bank and program number that you want to load it to above key F.

When you are sure of your choices, select [LOAD]. The *i2/i3* will load the data after asking for confirmation. Make sure the destination you've selected doesn't contain any unsaved data you want to keep, as its current data will be irrevocably lost when the new program is loaded.

Note: This function does not load any global data. If you have changed the Scale parameters (see page 222) since you saved the program data, the resulting change in keyboard temperament could make the program you load sound different than it originally did. You should adjust the Scale parameters to the settings you were using when you created the program file.

Likewise, a user drum program that you load may require different user kit settings than those currently available. If you load a drum program, you may also need to load the appropriate user drum kit using the Load One Drum Kit function, described below.

Load One Song   *function*

This function loads a single song from a song file into the *i2/i3*.

The procedure for using this function is the same as that described for the Load One Program function, above. The *i2/i3* will display the names of only the song files it finds on the disk.

Note: This function does not load any pattern data. If the song you load contains any pattern specifications, it will play whatever data it finds in those pattern numbers—or remain silent, if they are empty. When you use this function to load a song, therefore, you may need to load its associated patterns using the Load One Pattern function, below.

Load One Pattern   *function*

This function loads a single pattern from a song file into the *i2/i3*.

The procedure for using this function is the same as that described above for the Load One Program function. The *i2/i3* will display the names of only the song files it finds on the disk.

Note: The pattern number you select as the destination may be shared by more than one song. Loading new pattern data will change the pattern data for all songs that use it.

If you load a pattern to a destination number that is different from the source number, you will have to edit any songs using that pattern so that they will refer to the new pattern number.

Load One Arrangemt   *function*

This function loads a single arrangement from an arrangement file into the *i2/i3*.

The procedure for using this function is the same as that described above for the Load One Program function. The *i2/i3* will display the names of only the arrangement files on the disk.

Load One Style   *function*

This function loads a single style from a style file into the *i2/i3*.

The procedure for using this function is the same as that described for the Load One Program function, above. The *i2/i3* will display the names of only the style files on the disk.

Load One B.Sequenc   *function*

This function loads a single backing sequence from a backing sequence file into the *i2/i3*.

The procedure for using this function is the same as that described for the Load One Program function, above. The *i2/i3* will display the names of only the backing sequence files on the disk.

Load One Drum Kit   *function*

This function loads a single user drum kit from a program file into the *i2/i3*.

The procedure for using this function is the same as that described for the Load One Program function, above. The *i2/i3* will display the names of only the program files on the disk.

Load Std MIDI File   *function*

This function loads a standard MIDI file, which contains complete sequence data for one song.

The procedure for using this function is similar to that described for the Load One Program function, above. The *i2/i3* will display the full name (including the extension) of every file that it finds on the disk. It will also display the date on which each file was saved.

```
DISK 2:LOAD ONE        ▶File

  ┌─────────────────────┬──────────────────────┐
  │ Load One Program    │ Load One Style       │
  │ Load One Song       │ Load One B.Sequenc   │
  │ Load One Pattern    │ Load One Drum Kit    │
  │ Load One Arrangemt  │▶Load Std MIDI File   │
  └─────────────────────┴──────────────────────┘
  ┌──────────────────────────────────────────────┐
  │ MYSONG    MID Jun 28 1993━━▶Song0  (LOAD)    │
  └──────────────────────────────────────────────┘
```

A	B	C	D	E	F	G	H
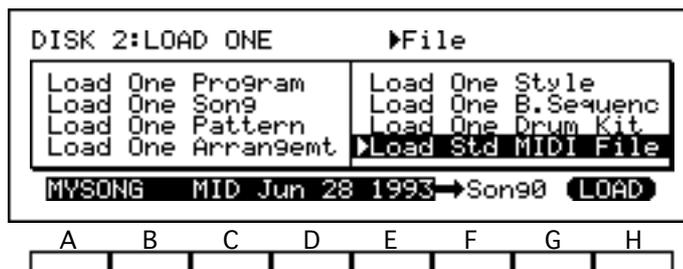
Since the standard MIDI file contains data for only one song, it is not necessary to specify a source song number. Simply select a destination song number, then [LOAD].

Note: The *i2/i3* can load and play any sequence data file that has been saved using Standard MIDI File format 0 or 1. (See Chapter 11 of the Player's Guide for an explanation of the Standard MIDI File formats.)

Although the *i2/i3* identifies its own standard MIDI files with the .MID extension, other sequencers or personal computers use a variety of different extensions. The *i2/i3* can load *all* of these files; that is why it displays the names and extensions of all the files on the disk.

If you try to load any files that contain data in another format—such as the *i2/i3*'s own program or song files—the *i2/i3* will display an error message informing you that the file does not comply to the Standard MIDI File format.

SAVE

On Page 3 of the Disk mode display you will find the Save functions, each of which saves a complete set of data for its file type. This page also contains a Set Date For Save function, which lets you enter a date that will be recorded as the date stamp for each file it saves.

```
DISK 3:SAVE
▶Save All Data      Save All Style
 Save All Program   Save All B.Sequenc
 Save All Song      Save Std MIDI File
 Save All Arrangemt Set Date For Save

 File:█EW_FILE       ◀▮  ▮▶      SAVE
```

A	B	C	D	E	F	G	H
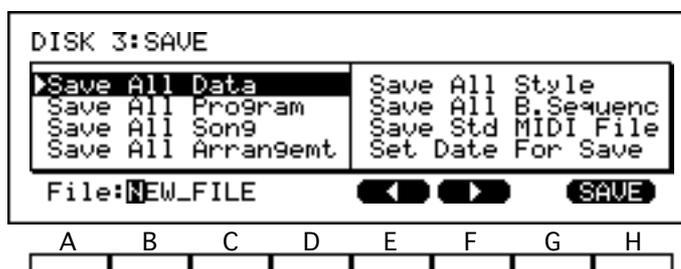
The *i2/i3* does not let you save individual programs, arrangements, styles, or backing sequences. It will let you save individual songs, if you use the Standard MIDI File format.

Save All Data   *function*

This function creates a complete set of *i2/i3* data files on a disk.

When you select this function, the *i2/i3* will display the most recently entered filename (or a default filename of **NEW_FILE**) above cursor keys B and C. If you wish, you can change this filename to any name of up to eight characters.
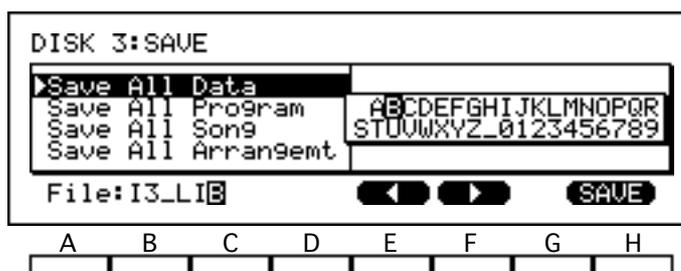
```
DISK 3:SAVE
▶Save All Data       ABCDEFGHIJKLMNOPQR
 Save All Program    STUVWXYZ_0123456789
 Save All Song
 Save All Arrangemt

 File:I3_LI█          ◀▮  ▮▶      SAVE
```

A	B	C	D	E	F	G	H

When you have finished entering the filename, select [SAVE]. The *i2/i3* will save the data after asking for confirmation.

If the *i2/i3* finds a file on the disk with the same name as one it is about to save, it will warn you that it is about to replace that file. Make sure the old file does not contain any data you need before confirming again, as this operation will destroy its contents permanently.

Save All Program   *function*

This function creates a program file containing data for a complete set of 64 programs from bank D, and the two user drum programs Dr7 and Dr8. It also saves global parameters—including the two user drum kits—to this file.

The procedure for using this function is the same as that described for the Save All Data function, above. The *i2/i3* will display the program file extension (.PCG) to the right of the filename you enter.

Save All Song   *function*

This function creates a song file containing data for a complete set of up to ten songs.

The procedure for using this function is the same as that described for the Save All Data function, above. The *i2/i3* will display the song file extension (.SNG) to the right of the filename you enter.

Save All Arrangemt   *function*

This function creates an arrangement file containing data for a complete set of 64 arrangements.

The procedure for using this function is the same as that described for the Save All Data function, above. The *i2/i3* will display the arrangement file extension (.ARR) to the right of the filename you enter.

Save All Style   *function*

This function creates a style file containing data for a complete set of four styles.

The procedure for using this function is the same as that described for the Save All Data function, above. The *i2/i3* will display the style file extension (.STY) to the right of the filename you enter.

Save All B.Sequenc   *function*

This function creates a backing sequence file containing data for a complete set of ten backing sequences.

The procedure for using this function is the same as that described for the Save All Data function, above. The *i2/i3* will display the backing sequence file extension (.BSQ) to the right of the filename you enter.

Save Std MIDI File   *function*

This function creates a standard MIDI file containing sequence data for one song. If the source song uses any patterns, the *i2/i3* will expand them to normal sequence data and insert them in the proper locations as it saves the song.

The procedure for using this function is the same as that described for the Save All Data function, except that you must also select the number of the song to save above cursor key A, and the Standard MIDI File format you will use above key D.

```
DISK 3:SAVE            ▶File Name

 ┌─────────────────┐  Save All  Style
 │ ABCDEFGHIJK_MNOPQR  Save All B.Sequenc
 │ STUVWXYZ_0123456789 Save Std MIDI File
 └─────────────────┘  Set Date For Save

S0▶OLD_JACK MID Fmt0 ◀   ▶      SAVE
```
     A   B   C   D   E   F   G   H
   ┌──┬──┬──┬──┬──┬──┬──┬──┐

You can choose between formats 0 and 1. (See Chapter 11 in the Player's Guide for an explanation of the Standard MIDI File formats.)

The *i2/i3* will display its standard MIDI file extension (.MID) to the right of the filename you enter.

Set Date For Save   *function*

This function lets you specify a date to be recorded as the date stamp for files saved by the *i2/i3*. This is useful for keeping track of when you created and saved your data.

The *i2/i3* displays file date stamps when you use the Load Std MIDI File function (see page 238) or the Delete File Function (see page 245). You can also view the date stamps if you use a personal computer to read data from your disks.

To use this function, simply enter the month above cursor key A, the date above key B, and the year above key C. There is no need to "execute" this function, as it is really a special parameter like those in Global mode.

The *i2/i3* will retain the date you set here even when you turn the power off. However, it does not have a time clock and so cannot advance the date automatically. If it's important for your files to be stamped with the correct date, you should be sure to check this setting at the start of every programming session.

MIDI DATA FILER

The functions on Page 4 of the Disk mode display let you use your *i2/i3* disks to store files—up to 64K each—of bulk dumps or other MIDI system exclusive data from another device, then transmit this data back to that device later.

```
DISK 4:MIDI DATA FILER
▶Load & Transmit
 Receive & Save


File:████████              (LOAD)
```

A	B	C	D	E	F	G	H

The MIDI Data Filer functions use a 64K memory buffer that they share with Song and Backing Sequence modes. If you try to use one of these functions when the *i2/i3* memory is full of song or backing sequence data, the *i2/i3* will display a "Not enough memory" error message.

Load & Transmit   *function*

This function loads a MIDI data file from a disk and sends its contents to a keyboard or other device connected to the *i2/i3* MIDI OUT jack.

To use this function, press a cursor key from A through F, then select the name of a data file. The *i2/i3* will display the names of all the MIDI data files (extension .EXL) it finds on the disk.

When you have chosen a file, select [LOAD]. The *i2/i3* will load the data after asking for confirmation, then transmit its contents from the MIDI OUT jack.

Notes: Be sure to insert a disk in the disk drive before using this function. The *i2/i3* will display a "No disk in drive" message if you attempt to select a file without first placing a disk in the disk drive.

Also, be sure to connect the receiving device to the MIDI OUT jack before you execute the operation. The *i2/i3* will transmit the data as soon as it has read it from the disk.

Receive & Save   *function*

This function receives MIDI data from a keyboard or other device connected to the *i2/i3* MIDI IN jack, then stores this data in a MIDI data file bearing the .EXL extension.

When you select this function, the *i2/i3* will display the message "Awaiting MIDI data." You can transmit up to 64K of data to the *i2/i3* while this message is displayed. This can be several "stacked" dumps or messages, if you like; however, the total volume of the incoming data should never exceed 64K, or the *i2/i3* will flush all data from the buffer, forcing you to start over.

Each time you send data, the *i2/i3* will display a "Receiving MIDI data…" message, followed by an indication of how many bytes were received.

Once you have finished transmitting data to the *i2/i3*, you must save it to a disk file. The *i2/i3* will display the most recently entered filename (or a default filename of **NEW_FILE**) above cursor keys B and C. You can change this filename to any name of up to eight characters.
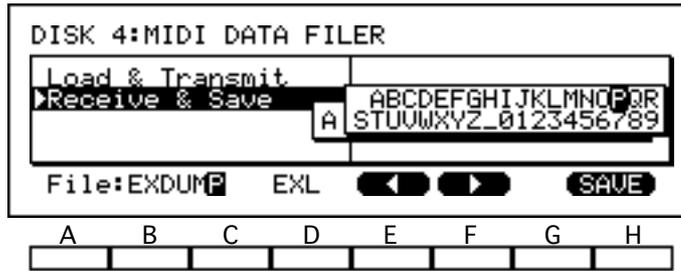
```
DISK 4:MIDI DATA FILER
  Load & Transmit
 ▶Receive & Save            ABCDEFGHIJKLMNOPQR
                       A  STUVWXYZ_0123456789

   File:EXDUMP    EXL   ◀   ▶      SAVE
```

A	B	C	D	E	F	G	H

When you have finished entering the filename, select [SAVE]. The *i2/i3* will save the data after asking for confirmation.

If the *i2/i3* finds a file on the disk with the same name as one it is about to save, it will warn you that it is about to replace that file. Make sure the old file does not contain any data you need before confirming again, as this operation will destroy its contents permanently.

UTILITY

Page 5 of the Disk mode display contains three utility functions that you can use to prepare and organize your *i2/i3* data disks. The first two functions let you rename your files, and delete files that you no longer need. You should use the third function, Format Disk, to initialize new floppy disks before attempting to save data to them.
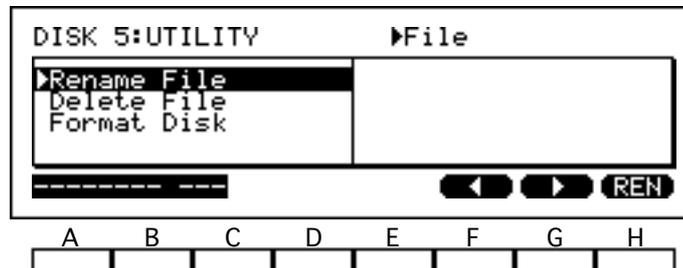
```
DISK 5:UTILITY      ▶File
▶Rename File
 Delete File
 Format Disk

-------- ---        ◀ ▶ REN
```
A   B   C   D   E   F   G   H

Be sure to insert a disk in the disk drive before using any of these functions. The *i2/i3* will display a "No disk in drive" message if you attempt to select a file or initialize a disk without first placing a disk in the disk drive.

Please read the instructions below thoroughly, and use the functions on this page with care. Reckless use of these functions can result in the irrevocable loss of valuable data.

Rename File   *function*

This function lets you rename the files on your *i2/i3* disks. You can use it when you want to reorganize your files, giving them new names which will help you to identify their contents.

To use this function, press cursor key A or B and select the file you wish to rename. Then enter the new name for this file above cursor keys D and E. When you have finished entering the new name, select [REN]. The *i2/i3* will rename the file after asking for confirmation.

Note: Be careful not to change filename extensions—the three characters following the period in the filename—unless you absolutely need to.

You may find it convenient to change the extension of a standard MIDI file (.MID) or a MIDI data file (.EXL) when sharing these files with a personal computer or another device. However, you should keep in mind that, by changing a MIDI data file's .EXL extension, you will render the *i2/i3* incapable of recognizing the file as one of its own.

Never change a file's extension to one of the other extensions listed on page 233. It would be a bad idea, for example, to rename a file called MYDATA.PCG to MYDATA.ARR. The *i2/i3* might think the file contains arrangement data—but it would not be able to load it.

The *i2/i3* will display an error message if you try to give a file a name that is already being used by another file.

Delete File   *function*

You can use this function to delete old files that you no longer need. This may come in handy when you need to free up disk space for new data.

To use this function, press a cursor key from A through E, then select the file you want to delete. The *i2/i3* will display the full name (including the extension) of every file that it finds on the disk. It will also display the date on which each file was saved.

```
DISK 5:UTILITY      ▶File
┌─────────────────────┬──────────────┐
│ Rename File         │              │
│▶Delete File         │              │
│ Format Disk         │              │
│                     │              │
├─────────────────────┴──────────────┤
│ TOP40    ARR Jun 28 1993   ⟨DELETE⟩│
└─────────────────────────────────────┘
```

A	B	C	D	E	F	G	H
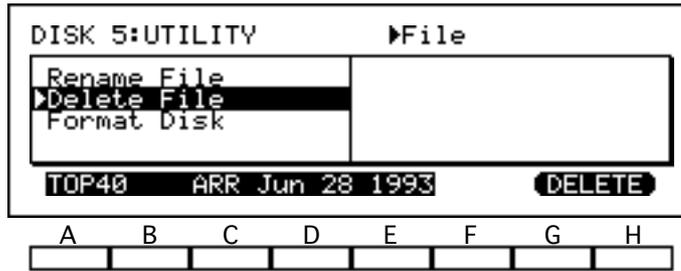
When you have chosen a file, select [DELETE]. The *i2/i3* will delete the file after asking for confirmation. Make sure that you don't need the contents of the file, as this operation will erase it permanently!

Format Disk   *function*

You should use this function to initialize all new disks for use by your *i2/i3*. You can also use it to erase and reformat old disks whose contents you no longer need.

To use this function, simply place the disk to be initialized in the disk drive, then select [FORMAT]. The *i2/i3* will check the disk for data and inform you if it finds any files, then initialize the disk after asking for confirmation. Make sure the disk does not contain any data you need, as this data will be lost forever when the *i2/i3* initializes the disk!

Appendix A
Error Messages

Sequence Editing Functions

Message	Can't change base resolution.
Description	The *i2/i3* cannot change the base resolution of a song which contains data.
Action	Erase the contents of the song using the Erase Song function before attempting to change its base resolution. (See page 116 for details on the Base Resolution parameter.)

Message	Can't edit empty measure.
Description	You have tried to edit a measure which does not contain any sequence data.
Action	Check your start and end measure settings and retry the operation.

Message	Can't edit empty song.
Description	You have tried to edit a song which does not contain any sequence data.
Action	Check the song number selection and retry the operation.

Message	Can't edit empty track.
Description	You have tried to edit a track which does not contain any sequence data.
Action	Check your track selection and retry the operation.

Message	Can't edit protected track.
Description	You are trying to edit a track whose Protect parameter has been turned on.
Action	Set the Protect parameter to **OFF**, then retry the operation. (See page 87 if you are editing a song, or page 59 if you are editing a backing sequence.)

Message	Can't expand pattern.
Description	There is not enough available memory for the *i2/i3* to expand pattern assignments into track data.
Action	Save the data in the memory area you are trying to edit using an appropriate Save function (see page 240), then clear some of this data to free up some memory.

Message	Can't merge pattern.
Description	You have specified a track containing pattern assignments as the source or destination for a Bounce Track operation.
Action	The *i2/i3* cannot complete the operation.

Message	Can't undo this change.
Description	The *i2/i3* can complete the editing operation you have specified. However, there is not enough free sequence memory for it to create a recall buffer that will let you undo the change.
Action	Select **[YES]** to go ahead with the operation, or **[NO]** to cancel it. (Since you will not be able to undo the operation, you may want to save your data first.)

Message	Destination includes pattern.
Description	You have specified measures containing pattern assignments as the destination for an editing function.
Action	The *i2/i3* cannot complete the operation.

Message	Measure occupied by pattern.
Description	You have specified measures containing pattern assignments as the object of an editing function.
Action	The *i2/i3* cannot complete the operation as specified.

Message	Not enough memory.
Description	There is not enough free sequence memory for the *i2/i3* to complete the editing operation you have specified.
Action	Save the data in the memory area you are trying to edit using an appropriate Save function (see page 240), then clear some of this data to free up some memory.

Message	Patterns must be expanded.
Description	You are trying to edit measures containing pattern assignments. The *i2/i3* must expand the pattern assignments in order to complete the operation.
Action	Select **[YES]** to go ahead with the operation, or **[NO]** to cancel it. (If you go ahead with the operation, the measures will consume more memory.)

Message	Pattern won't fit in track.
Description	You have tried to place a pattern in a style track in such a way that it exceeds the length of the track.
Action	Check your pattern assignments, or change the Length parameter for the pattern or Chord Variation (see page 43 or page 22.)

Message	Source includes pattern.
Description	You have specified measures containing pattern assignments as the source for an editing function.
Action	The *i2/i3* cannot complete the operation.

Message	Source is empty.
Description	You have selected as the source for a copy, get, or bounce operation measures which have not yet been recorded into, and therefore do not exist. The *i2/i3* cannot complete the operation as specified.
Action	Check your track and measure selections.

Message	Source overlaps destination.
Description	You have selected as the destination of a copy or bounce operation measures which overlap with the source measures. The *i2/i3* cannot complete the operation as specified.
Action	Check your track and measure selections.

Disk Functions

Message	Can't find file.
Description	You have switched disks after selecting a file to load, delete, or rename.
Action	Make sure the disk in the drive contains the file you want to load, delete, or rename.

Message	Can't load--corrupt file.
Description	The song (.SNG) file you have selected contains invalid information in the header section of its data. The *i2/i3* cannot load it.
Action	Check your file selection. Try to load a backup copy of the file, if you have one.

Message	Can't load empty file.
Description	The file you have selected contains no data. The *i2/i3* cannot load it.
Action	Such files can be created by faulty disk operations. Delete the file using the Delete File operation described on page 245.

Message	Can't load--not SMF.
Description	You have tried to use the Load Std MIDI File function to load a file which does not comply to a Standard MIDI File format. (See page 143 of the Player's Guide for details on the Standard MIDI File formats.)
Action	Check your file selection.

Message	Can't load SMF format 2.
Description	You have tried to load a standard MIDI file which complies to Standard MIDI File format 2. The *i2/i3* can only load standard MIDI files with formats 0 or 1. (See page 143 of the Player's Guide for details on the Standard MIDI File formats.)
Action	Check your file selection.

Message	Can't load--too many tracks.
Description	You have tried to load a standard MIDI file which contains data for more than sixteen tracks.
Action	Check your file selection. The *i2/i3* sequencer cannot hold more than sixteen tracks.

Message	Can't load--track too long.
Description	You have tried to load a standard MIDI file which contains track data for more than 999 measures.
Action	Check your file selection. The *i2/i3* sequencer cannot hold more than 999 measures per track.

Message	Can't load to protected RAM.
Description	You are trying to load data to a protected memory area.
Action	Check the Protect parameters described on page 219. Set the parameter corresponding to the data you are trying to load to **OFF**.

Message	Can't read disk.
Description	The format of the disk in the drive has become corrupted, or it is not a format recognized by the *i2/i3*.
Action	Re-format the disk using the Format Disk function described on page 246.

Message	Can't replace directory.
Description	The disk in the drive is already using the filename you have entered as the name of a sub-directory.
Action	Sub-directories can only be created or changed using a personal computer. Enter a different filename.

Message	Can't replace system file.
Description	You are trying to create a file with the same name as an MS-DOS™ system file.
Action	Enter a different filename.

Message	Can't save empty song.
Description	You have tried to save a song which contains no song data.
Action	Check your song number selection.

Message	Can't write to protected disk
Description	The write protect tab on the disk in the drive is open.
Action	Close the write protect tab and try again.

Message	Can't write to protected file
Description	You have tried to replace the contents of a file with a "read-only" or "locked" attribute.
Action	File attributes can only be set or changed using a personal computer. Use a computer to change the file's attribute, or enter a different filename.

Message	Can't write--full directory.
Description	The directory of the disk in the drive already contains 112 items.
Action	Delete some files (see page 245) to create more directory space, or use another disk.

Message	Corrupt standard MIDI file.
Description	The file you are trying to load has a proper Standard MIDI File header, but contains inappropriate data.
Action	Check your file selection.

Message	Disk already formatted.
Description	The disk in the drive has already been initialized to a format that the *i2/i3* can use. If you proceed with the Format Disk operation, you will lose any data that the disk may currently contain.
Action	Check the disk to make sure it does not contain any data you want to keep. Select **[YES]** to re-format the disk, or **[NO]** to cancel the operation.

Message	Disk contains ??? file(s).
Description	The disk in the drive contains the displayed number of data files. If you proceed with the Format Disk operation, you will lose the data in these files.
Action	Check the disk to make sure the files do not contain any data you want to keep. Select **[YES]** to re-format the disk, or **[NO]** to cancel the operation.

Message	New filename already in use.
Description	You have tried to rename a file using a filename that is already being used by another file.
Action	Enter a different filename.

Message	No disk in drive.
Description	The *i2/i3* could not find a disk in the drive.
Action	Place a disk in the drive before attempting to use Disk mode functions. If the *i2/i3* displays this message when a disk is in the drive, eject and then re-insert the disk to make sure it is set properly.

Message	No MIDI data to save.
Description	You have tried to save a MIDI data file without first receiving MIDI data.
Action	See page 243 for details on the use of the Receive & Save function.

Message	Not enough memory.
Description	There is not enough open sequence memory for the *i2/i3* to create a buffer for a MIDI data file transfer (see page 243).
Action	Save your songs or backing sequences using an appropriate Save function (see page 240 or 241), then use the Erase Song or Erase B.Sequence function (see page 93 or 66) to free up some sequence memory.

Message	Not enough memory to load.
Description	There is not enough room in the *i2/i3* memory to hold the contents of the file you are trying to load.
Action	Save the data in the memory area you are trying to load to using an appropriate Save function (see page 240), then clear some of this data to free up some memory.

Message	Not enough room on disk.
Description	The disk in the drive does not have enough room for the file you are trying to create.
Action	Delete some files (see page 245) to free up some disk capacity, or use another disk.

Message	Not i2/i3 disk format.
Description	The disk in the drive has been formatted in a Korg format other than that used by the *i2/i3*.
Action	The *i2/i3* will display this message if you try to use a disk formatted by a 01/W or other Korg workstation. Re-format the disk using the Format Disk command described on page 246, or use another disk.

Message	Not i2/i3 file format.
Description	The file you have selected has an *i2/i3* filename, but contains data that does not conform to the corresponding *i2/i3* file format. The *i2/i3* cannot load it.
Action	Check your file selection. The *i2/i3* will display this message if you try to load a file that does not contain *i2/i3* data, but which has been given an *i2/i3* extension.

Message	????????.??? not found.
Description	The *i2/i3* could not find the named file while loading files with the Load All Data function.
Action	Select **[YES]** to continue loading the incomplete file set, or **[NO]** to cancel the operation.

Message	????????.??? already exists.
Description	You have asked the *i2/i3* to save data using a filename which is already used by a file on the disk.
Action	Select **[YES]** to replace the old file with the new data, or **[NO]** to cancel the operation.

Style Card Functions

Message	Can't read card.
Description	The format of the card in the card slot has become corrupted, or it is not a format recognized by the *i2/i3*.
Action	Do not try to use any cards other than style cards in the *i2/i3* card slot. If the card in the slot is an *i2/i3* style card, have it checked by your Korg dealer or service representative.

Message	No card in slot.
Description	The *i2/i3* could not find a style card in the card slot.
Action	Place a card in the card slot before attempting to use the functions on the Global mode STYLE CARD page. If the *i2/i3* displays this message when a style card is in the slot, remove and then re-insert the card to make sure it is set properly.

Message	Not i2/i3 card format.
Description	The card in the card slot has been formatted for use by a Korg product other than the *i2/i3*.
Action	Do not try to use any cards other than style cards in the *i2/i3* card slot.

General

Message	Backup battery power is low.
Description	The voltage of the internal backup battery is low.
Action	Contact your Korg dealer or an authorized Korg service center to have the battery replaced. Do not attempt to replace the battery yourself.

Message	Can't write to protected RAM.
Description	You are trying to write data to a protected memory area.
Action	Check the Protect parameters described on page 219. Set the parameter corresponding to the data you are trying to write to **OFF**.

Message	Corrupt exclusive data.
Description	You have sent MIDI system exclusive data which does not follow the proper data format.
Action	Check your data and try again.

Appendix B

General Troubleshooting

Trouble	What To Do
The *i2/i3* cannot be powered up.	Check that the power cable is connected to a suitable AC receptacle.
	Check that the *i2/i3*'s POWER switch is on.
	Check the power cable plug fuse (if fitted).
	If the *i2/i3* still cannot be powered up, consult your Korg dealer.
The *i2/i3* appears to be powered up, but nothing is displayed on the LCD.	Adjust the CONTRAST knob on the rear panel.
The *i2/i3* does not produce any sound.	Check the connections to your amplifier, mixer, etc.
	Check that your amplifier, mixer, etc., is switched on, and the correct settings have been made.
	Check that the *i2/i3* MASTER VOLUME slider is up.
	Is Local Control turned off? It should be on. See page 212.
The wrong sounds are produced when playing an arrangment, style, backing sequence, or song.	Have you changed any of the programs in the D bank, or drum programs Dr7 or Dr8? Load the appropriate data.
	Have you modified either of the two user drum kits? Load the appropriate data.
	Have you modified the arrangement? Load the appropriate data.
An arrangment, or backing sequence is playing the wrong music.	Does the arrangement or backing sequence use one of the user styles? If so, have you modified the user styles by recording or loading from disk? Load the appropriate data.
Sound cannot be stopped.	Make sure that the Damper Switch Polarity is set correctly. See page 215.
	Make sure that the current program's Hold parameter is not set to ON. See page 123.
The selected arrangement, style, backing sequence, or song cannot be played.	Make sure that the MIDI Clock source is set to INT. If you are using an external clock source, make sure that the MIDI Clock Source parameter is set to EXT and the external device is sending the MIDI clock data correctly.
Cannot record in the sequencing modes.	For styles, make sure that the style memory is not protected. See page 219.
	Is the selected track protected? See page 59 or page 87.
	Make sure that the MIDI Clock source is set to INT. If you are using an external clock source, make sure that the MIDI Clock Source parameter is set to EXT and the external device is sending the MIDI clock data correctly.
The *i2/i3* does not respond to incoming MIDI data.	Make sure that all MIDI cables are connected correctly.
	Make sure that the *i2/i3* is set to receive MIDI data on the channel that the sending device is using. See page 213.
	Make sure that the *i2/i3* is not set to filter out the incoming MIDI data. See page 214.
Cannot select VDF2 page, VDA2 page, or Pitch MG2 parameters when editing a program.	The current program is not a Double Oscillator program. See page 123.
Cannot write a program.	Is the Program memory protect function set to ON. Set this to OFF. See page 219.
	Are you trying to write the program to a bank other than D (or programs Dr7–Dr8)? Write programs to these locations only.

Trouble	What To Do
Some drum sounds do not play.	Check the panpot, effect send level, and effect placement parameters. See page 206 for an explanation of how these parameters interact.
Keys do not play the specified drum sounds.	Make sure the Transpose function is set to +00.
	Make sure the oscillator octave parameter is set to 8'.
Cannot play GM compatible song data.	Make sure that the song data is GM compatible.
	If you are sending GM compatible song data to the *i2/i3* via MIDI, you must send a GM Mode ON message to the *i2/i3*.

Floppy Disk & Style Card Troubleshooting

Trouble	What To Do
Cannot format a floppy disk.	Are you using a 3.5 inch 2DD type floppy disk? Use only this type of disk.
	Make sure that the disk is inserted correctly.
	Make sure that the disk's write protect tab is not set to protect.
Cannot save data to a floppy disk.	Make sure that the disk is inserted correctly.
	Make sure that the disk's write protect tab is not set to protect.
Cannot load data from a floppy disk.	Make sure that the disk is inserted correctly.
	Does the disk contain any data?
	Is the program, arrangement, or style memory protected. See page 219.
Cannot load data from a style card.	Make sure that the card is inserted correctly.
	Is the style memory protected. See page 219.

Appendix C

Piano keyboard (88 keys)

MIDI note numbers: 21 23 24 26 28 29 31 33 35 36 38 40 41 43 45 47 48 50 52 53 55 57 59 60 62 64 65 67 69 71 72 74 76 77 79 81 83 84 86 88 89 91 93 95 96 98 100 101 103 105 107 108

A0 C1 C2 C3 C4 Middle C C5 C6 C7 C8

i2 keyboard (76 keys)

MIDI note numbers: 28 29 31 33 35 36 38 40 41 43 45 47 48 50 52 53 55 57 59 60 62 64 65 67 69 71 72 74 76 77 79 81 83 84 86 88 89 91 93 95 96 98 100 101 103

E1 C2 C3 C4 Middle C C5 C6 C7 G8

i3 keyboard (61 keys)

MIDI note numbers: 36 38 40 41 43 45 47 48 50 52 53 55 57 59 60 62 64 65 67 69 71 72 74 76 77 79 81 83 84 86 88 89 91 93 95 96

C2 C3 C4 Middle C C5 C6 C7

Recognized Chords

*All chords are shown in root position, with a root of C. Please note that in order for the **i2/i3** to correctly recognize major 6th and minor 6th chords, you must play them in root position. This is necessary because these chords are made up of the same notes as minor 7th and minor 7th flat 5 chords in the relative minor (for example, C–E–G–A can be either C6 or Am7).*

Major

3-note
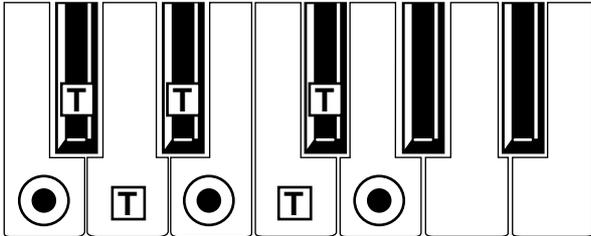
2-note
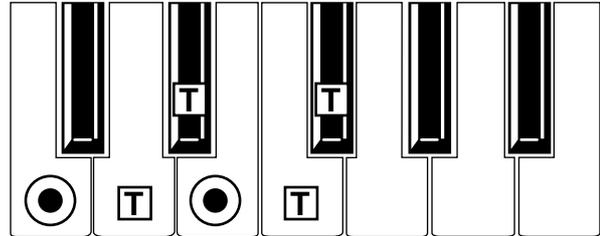
2-note
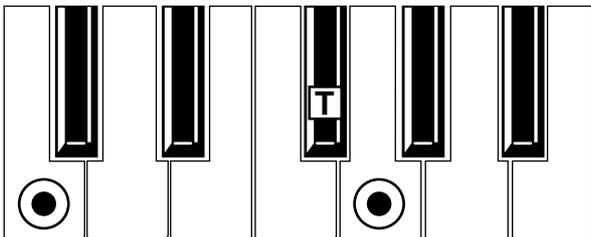
1-note
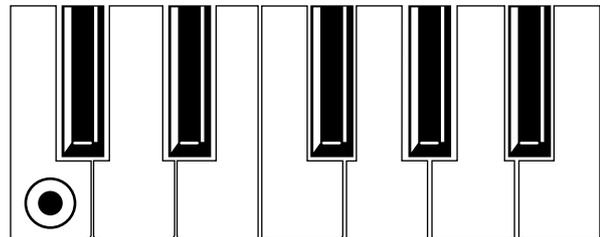
Major 6th

4-note
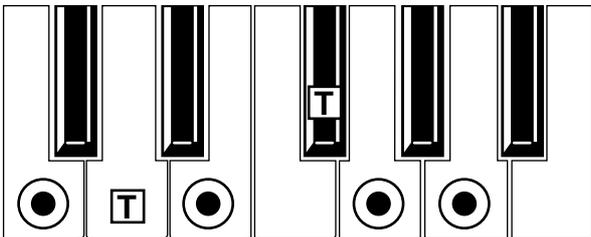
2-note
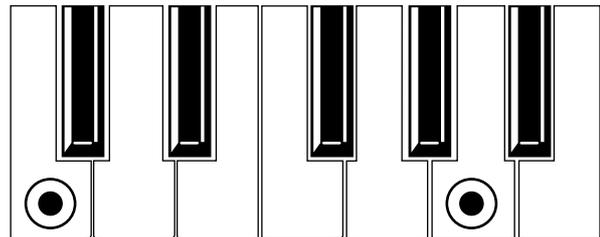
Major 7th

4-note
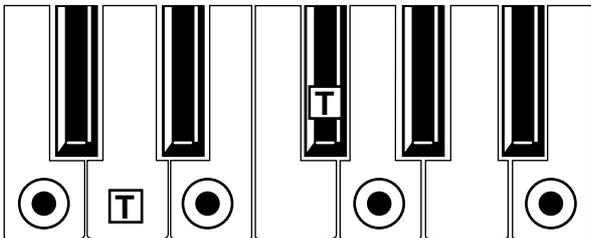
3-note
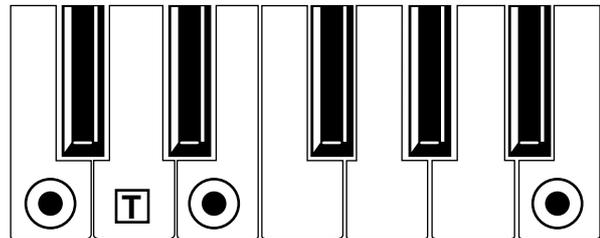
2-note
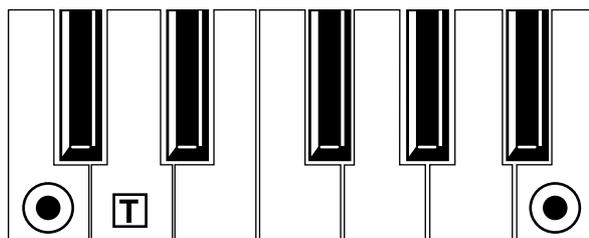
● =chord tone   T =available tension

Sus 4

3-note
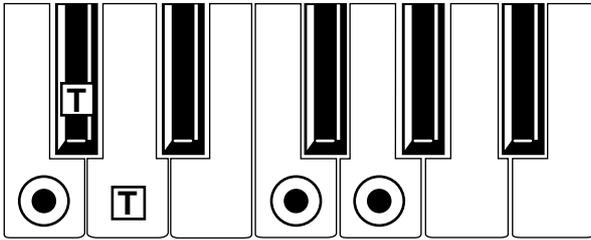
2-note
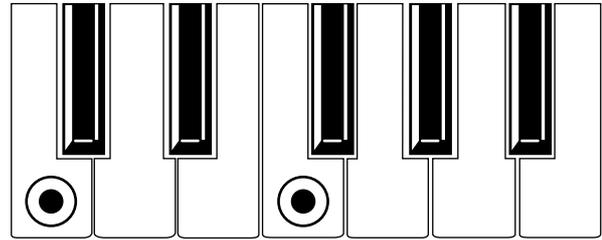
Sus 2

3-note
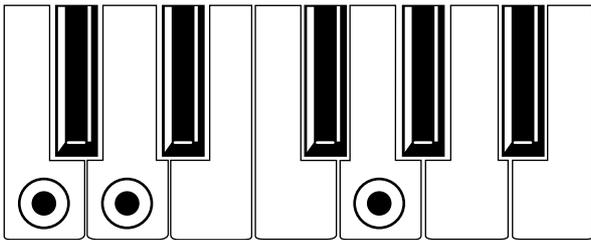
Dominant 7th

4-note
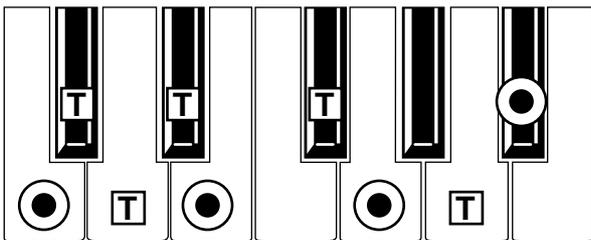
3-note
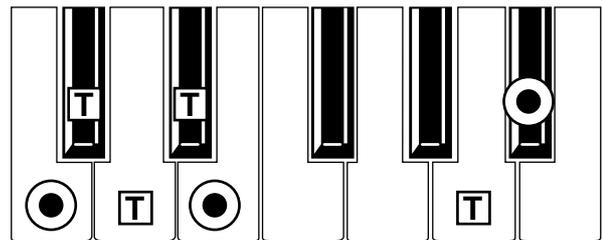
2-note
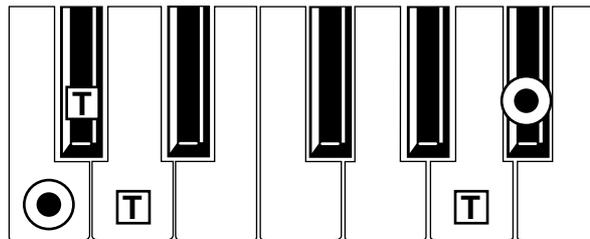
Dominant 7th Sus 4

4-note
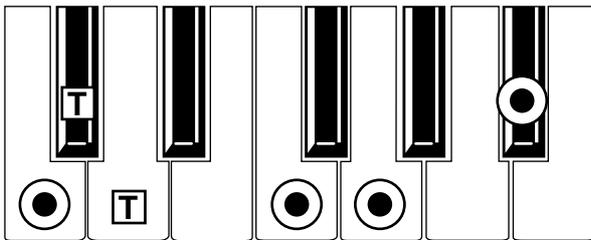
3-note
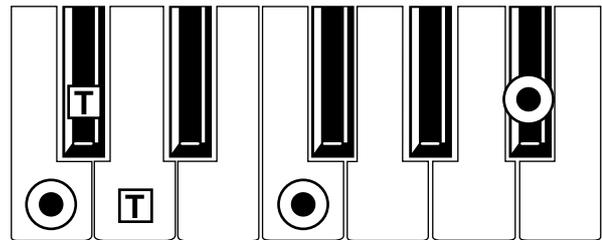
●=chord tone   T=available tension

Minor

3-note
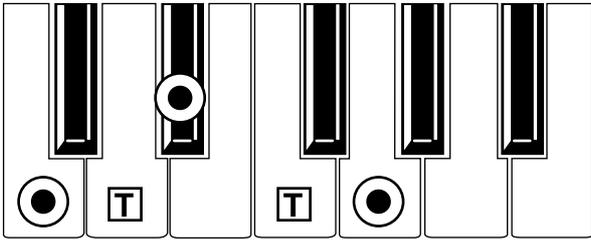
2-note
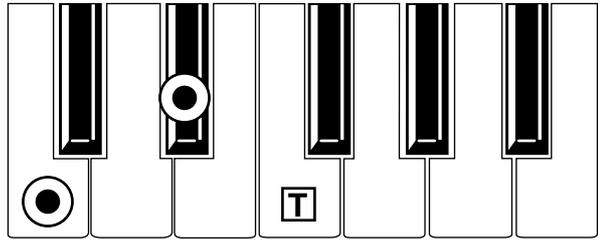
Minor 6th

4-note
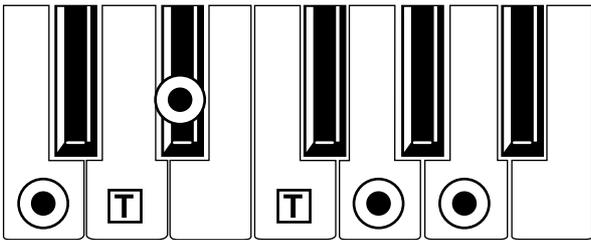
Minor 7th

4-note
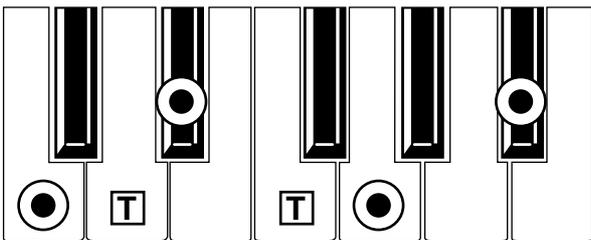
3-note
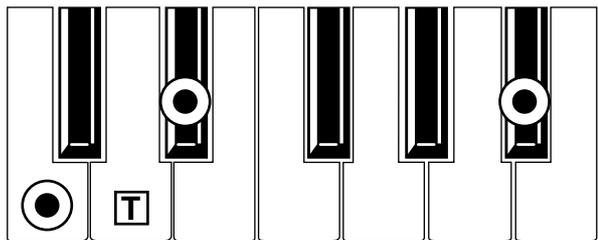
Minor 7th ♭5

4-note
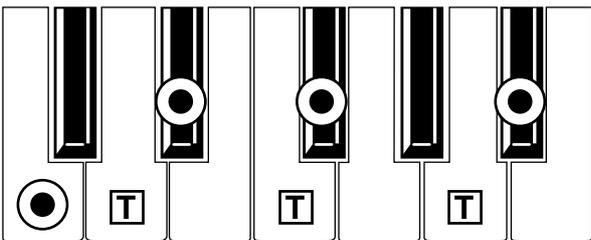
Minor-Major 7th

4-note
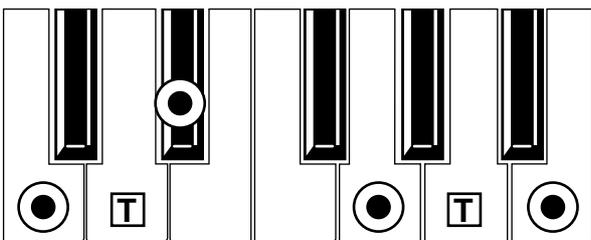
3-note
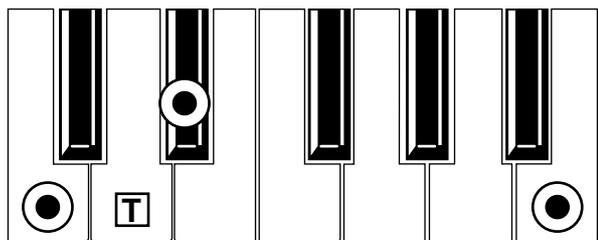
⬤ =chord tone   T =available tension

Diminished
3-note
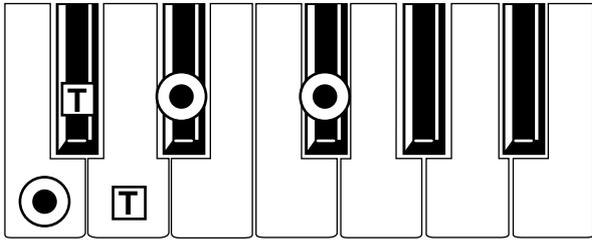
Diminished Major 7th
4-note
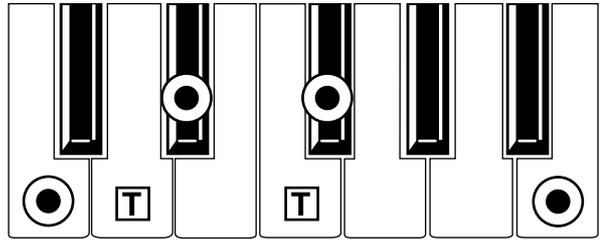
Augmented
3-note
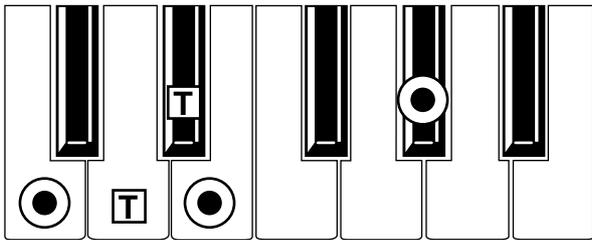
Augmented 7th
4-note
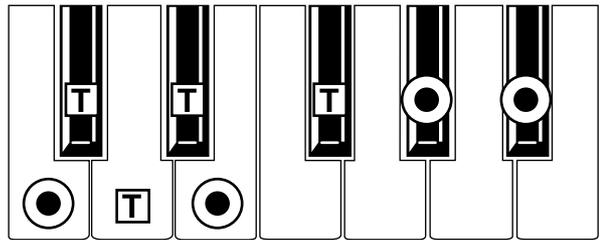
Augmented Major 7th
4-note
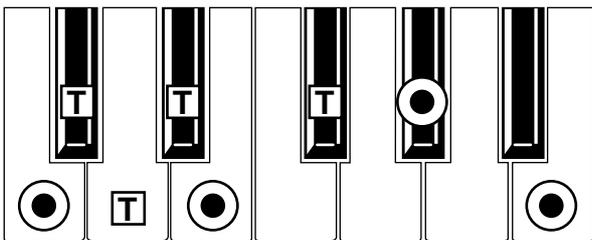
Major 7th ♭5
4-note
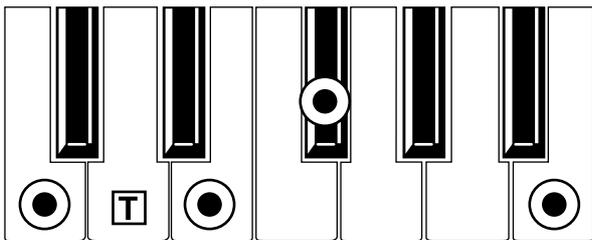
Major 7th Sus 4
4-note
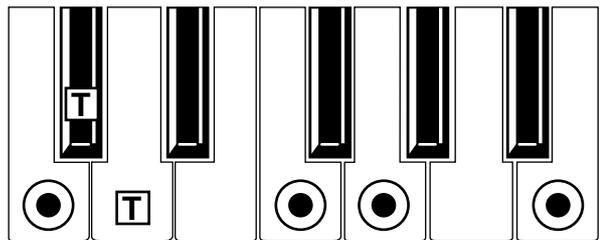
Dominant 7th ♭5
4-note
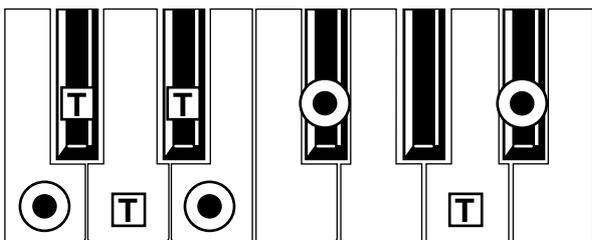
⬤ =chord tone   T =available tension

Kick and Snare Designation Tables

These tables show how an arrangement's Kick Designation and Snare Designation parameters affect the kick and snare sounds you will hear. The left column of each table represents the drum sound used in the style currently being played.

Kick Designation

	A	B	C	D
Kick 1	Kick 1	Kick 2	Kick 3	Kick 4
Kick 2	Kick 2	Kick 3	Kick 4	Kick 1
Kick 3	Kick 3	Kick 4	Kick 1	Kick 2
Kick 4	Kick 4	Kick 1	Kick 2	Kick 3

Snare Designation

	A	B	C	D
Snare 1	Snare 1	Snare 2	Snare 3	Snare 4
Snare 2	Snare 2	Snare 3	Snare 4	Snare 1
Snare 3	Snare 3	Snare 4	Snare 1	Snare 2
Snare 4	Snare 4	Snare 1	Snare 2	Snare 3
Sidestick	Snare 1	Snare 2	Snare 3	Snare 4

Drum Map Tables

These tables show how the specified drum sounds are changed when you select the drum maps. Drum sounds unaffected by the drum maps do not appear here. For this reason, drum map 5 is not listed, as all of the drum sounds remain unaffected when using this map.

Drum Map 1 (percussion)

Original note data	Re-mapped to:	Original note data	Re-mapped to:	Original note data	Re-mapped to:
Kick 1 (C2)	Clave	Sidestick (C#2)	Hi Woodblock	Crash 1 (C#3)	Vibraslap
Kick 2 (B1)	Low Woodblock	Snare Roll/ Reversed Snare (A#1)	Bongo Slap	Crash 2 (A3)	Bell Tree
Kick 3 (G1)	Hi Agogo	Closed Hi-hat (F#2)	Shaker	China Crash (E3)	Bell Tree
Kick 4 (E1)	Hi Bongo	Accent Hi-hat (F#1)	Tambourine	Splash (G3)	Jingle
Snare 1 (D2)	Cowbell	Open Hi-hat (A#2)	Cabasa	Hi Tom 1 (D3)	Hi Bongo
Snare 2 (E2)	Castanets	Pedal Hi-hat (G#2)	Maracas	Hi Tom 2 (C3)	Lo Bongo
Snare 3 (A1)	Low Agogo	Ride 1 (D#3)	Muted Triangle	Mid Tom 1 (B2)	Mute Conga
Snare 4 (F1)	Low Bongo	Ride 2 (B3)	Maracas	Mid Tom 2 (A2)	Hi Conga
		Ride Bell (F3)	Open Triangle	Low Tom 1 (G2)	Low Conga
				Low Tom 2 (F2)	Low Timbale

Drum Map 2 (no snare)

Original note data	Re-mapped to:
Snare 1, 2, 3, 4 (D2, E2, A1, F1)	Pedal Hi-hat
Sidestick (C#2)	Closed Hi-hat
Snare Roll/ Reversed Snare (A#1)	Closed Hi-hat

Drum Map 3 (sidestick and hi-hat)

Original note data	Re-mapped to:
Snare 1, 2, 3, 4 (D2, E2, A1, F1)	Sidestick
Sidestick (C#2)	*Snare 1, 2, 3, or 4
Snare Roll/ Reversed Snare (A#1)	Sidestick

The snare sound you hear will be determined by the Snare

Designation setting in the current arrangement.

Drum Map 4 (sidestick and ride)

Original note data	Re-mapped to:	Original note data	Re-mapped to:	Original note data	Re-mapped to:
Snare 1, 2, 3, 4 (D2, E2, A1, F1)	Sidestick	Closed Hi-hat (F#2)	Ride 1	Ride 1 (D#3)	Closed Hi-hat
Sidestick (C#2)	*Snare 1, 2, 3, or 4	Accent Hi-hat (F#1)	Ride 2	Ride 2 (B3)	Accent Hi-hat
Snare Roll/ Reversed Snare (A#1)	Sidestick	Open Hi-hat (A#2)	Ride Bell	Ride Bell (F3)	Open Hi-hat

*The snare sound you hear will be determined by the Snare Designation setting in the current arrangement.

Drum Map 6 (snare and ride)

Original note data	Re-mapped to:	Original note data	Re-mapped to:
Closed Hi-hat (F#2)	Ride 1	Ride 1 (D#3)	Closed Hi-hat
Accent Hi-hat (F#1)	Ride 2	Ride 2 (B3)	Accent Hi-hat
Open Hi-hat (A#2)	Ride Bell	Ride Bell (F3)	Open Hi-hat

Drum Map 7 (open hi-hat)

Original note data	Re-mapped to:	Original note data	Re-mapped to:
Closed Hi-hat (F#2)	Open Hi-hat	Ride 1 (D#3)	Open Hi-hat
Accent Hi-hat (F#1)	Open Hi-hat	Ride 2 (B3)	Open Hi-hat
		Ride Bell (F3)	Open Hi-hat

Drum Map 8 (crash)

Original note data	Re-mapped to:
Accent Hi-hat (F#1)	Crash 2
Open Hi-hat (A#2)	Crash 1

MIDI Implementation Chart

Function		Transmitted	Recognized	Remarks
Basic Channel	Default	1 – 16	1 – 16	Memorized
	Changed	1 – 16	1 – 16	
Mode	Default		3	
	Messages	X	X	
	Altered	************************		
Note Number:		24 – 108	0 – 127	When sequencer data is sent: 0 – 127
	True Voice	************************	0 – 127	
Velocity	Note On	O 9n, V=1 – 127	O 9n, V=1 – 127	When sequencer data is sent: 2 – 126
	Note Off	X	X	
Aftertouch	Polyphonic (Key)	X	X	Sequencer can record and *A
	Monophonic (Channel)	O	O	play polyphonic aftertouch *A
Pitch Bend		O	O	*C
Control Change	0, 32	O	O	Bank Select (MSB, LSB) *P
	1, 2	O	O	Modulation (pitch, cutoff) *C
	4, 64	O	O	Pedal (scale, damper) *C
	6, 38	O	O	Data Entry (MSB, LSB) *C
	7, 11	O	O	Volume, Expression *C
	10, 91, 93	O	O	A:B panpot, send C, D *C
	12, 13	O	O	Effect controller 1, 2 *C
	72, 73, 74	X	O	EG time (Release, Attack), Brightness *C
	92, 94	O	O	Effects 1, 2 on/off *C
	96, 97	O	O	Data Inc, Dec *C
	100, 101	X	O	RPN (LSB, MSB) *1
	120, 121	X	O	All sound off, Reset all Cntrls
	0 – 127	O	O	(Sequencer data)
Program Change	Variable Range	O 0 – 127	O 0 – 127	*P
		************************	0 – 127	
System Exclusive		O	O	*2 *E
System Common	Song Position	O	O	*3
	Song Select	O 0 – 9	O 0 – 9	*3
	Tune	X	X	
System Real Time	Clock	O	O	*3
	Command	O	O	*3
Aux Messages	Local On/Off	X	O	
	All Notes Off	X	O (123 – 127)	
	Active Sense	O	O	
	Reset	X	X	
Notes		*C, *P, *A, *E: Sent and received when MIDI Filter (Controller, Program Change, Aftertouch, System Exclusive) is set to ENA. *1: LSB, MSB = 00,65: pitch bend range, =01,65: fine tune, =02,65: course tune *2: Includes Inquiry, GM Mode On/Off, Master Balance, and Master Volume messages. *3: When clock is set to internal, sent but not received. When set to external, received but not sent.		

Mode 1:OMNI ON, POLY	Mode 2:OMNI ON, MONO	O: Yes
Mode 3:OMNI OFF, POLY	Mode 4:OMNI OFF, MONO	X: No

MIDI Data Format

MIDI IMPLEMENTATION

1. TRANSMITTED DATA

1-1 CHANNEL MESSAGES

Status (Hex)	Second (Hex)	Third (Hex)	Description	ENA
1000 nnnn (8n)	0kkk kkkk (kk)	0100 0000 (40)	Note Off (61Keys↑Transpose) kkk kkkk=24~108	A
1001 nnnn (9n)	0kkk kkkk (kk)	0vvv vvvv (vv)	Note On (61Keys↑Transpose) kkk kkkk=24~108 vvv vvvv=1~127	A
1010 nnnn (An)	0kkk kkkk (kk)	0vvv vvvv (vv)	Poly Key Pressure (Recorded Seq Data)	T,Q
1011 nnnn (Bn)	0000 0000 (00)	0mm mmmm (mm)	Bank Select(MSB) (BANK Key, etc) *1	P
1011 nnnn (Bn)	0000 0001 (01)	0vvv vvvv (vv)	Modulation 1 (Joystick(+Y))	C
1011 nnnn (Bn)	0000 0010 (02)	0vvv vvvv (vv)	Modulation 2 (Joystick(-Y))	C
1011 nnnn (Bn)	0000 0100 (04)	0000 0000 (00)	Foot Pedal (Select Main Scale)	C
1011 nnnn (Bn)	0000 0100 (04)	0111 1111 (7F)	Foot Pedal (Select Sub Scale)	C
1011 nnnn (Bn)	0000 0111 (07)	0vvv vvvv (vv)	Volume (Assign Pedal, etc)	C
1011 nnnn (Bn)	0000 1010 (0A)	0vvv vvvv (vv)	Panpot (by A:B Panpot)	C
1011 zzzz (Bz)	0000 1100 (0C)	0vvv vvvv (vv)	Effect Control (Assignable Pedal)	C
1011 nnnn (Bn)	0010 0000 (20)	0111 1111 (11)	Bank Select(LSB) (BANK Key, etc) *1	P
1011 nnnn (Bn)	0100 0000 (40)	0000 0000 (00)	Hold 1 Off (Damper Pedal)	C
1011 nnnn (Bn)	0100 0000 (40)	0111 1111 (7F)	Hold 1 On (Damper Pedal)	C
1011 nnnn (Bn)	0ccc cccc (cc)	0vvv vvvv (vv)	Control Data (Recorded Seq Data) ccc cccc=00~127	C,Q
1100 nnnn (Cn)	0ppp pppp (pp)	---- ----	Program Change (Prog Change) *1	P
1101 nnnn (Dn)	0vvv vvvv (vv)	---- ----	Channel Pressure (Aftertouch)	T
1110 nnnn (En)	0bbb bbbb (bb)	0bbb bbbb (bb)	Pitch Bend (Joystick(X))	C

nnnn : MIDI Channel No. (0~15) Usually Global Channel. When using sequencer, each track's channel.
zzzz : Always Global Channel No. (0~15)
vvvv : Value

ENA = A : Always Enabled
C : Enabled when Control Filter in GLOBAL Mode is ENA
P : Enabled when Program Filter in GLOBAL Mode is ENA
T : Enabled when Aftertouch Filter in GLOBAL Mode is ENA
Q : Enabled when sequencer is playing (transmitting) or recording (receiving)
T.Q: T and Q
C.Q: C and Q

*1 : Program : MIDI Out (Hex)

A11~A88:	mm.11.pp = 38.00.00~3F	
B11~B88:	"	38.00.40~7F
C11~C88:	"	00.01.00~3F
D11~D88:	"	00.01.40~7F
Dr1	"	3E.00.00
Dr2	"	3E.00.10
Dr3	"	3E.00.19
Dr4	"	3E.00.20
Dr5	"	3E.00.28
Dr6	"	3E.00.40
Dr7	"	3E.00.18
Dr8	"	3E.00.30

1-2 SYSTEM COMMON MESSAGES

Status (Hex)	Second (Hex)	Third (Hex)	Description	
1111 0010 (F2)	0sss ssss (ss)	0ttt tttt (tt)	Song Position Pointer sss ssss : Least significant (LSB) ttt tttt : Most significant (MSB)	*2
1111 0011 (F3)	0000 ssss (ss)	---- ----	Song Select ssss : Song No. = 0~9	*2

Transmitted when in Song mode (Internal Clock)
When the number is changed, the i2/i3 transmits [Song Select], then [Bank Select], [Program Change],[Volume], and [Panpot] for each track whose Status - EXT or BOTH. Then [Song Position Pointer].

*2 : For Example Time Signature = 4/4, 8/8
tt,ss = 00,10 / Measure

1-3 SYSTEM REALTIME MESSAGES

Status (Hex)	Description	
1111 1000 (F8)	Timing Clock	*3
1111 1010 (FA)	Start	*3
1111 1011 (FB)	Continue	*3
1111 1100 (FC)	Stop	*3
1111 1110 (FE)	Active Sensing	

*3 : Transmits when in Song or Backing Sequence mode (internal Clock)

1-4 UNIVERSAL SYSTEM EXCLUSIVE MESSAGES (DEVICE INQUIRY REPLY)

Byte (Hex)	Description
1111 0000 (F0)	Exclusive Status
0111 1110 (7E)	Non Realtime Message
0000 gggg (0g)	MIDI GLOBAL CHANNEL (DEVICE ID)
0000 0110 (06)	INQUIRY MESSAGE
0000 0010 (02)	IDENTITY REPLY
0100 0010 (42)	KORG ID (MANUFACTURERS ID)
0011 1001 (39)	i2/i3 ID (FAMILY CODE (LSB))
0000 0000 (00)	(" (MSB))
0000 000* (0*)	(MEMBER CODE (LSB))*4
0000 0000 (00)	(" (MSB))
0*** **** (**)	EOM No. 1~ (Minor Ver. (LSB))
0000 0000 (00)	(" (MSB))
0*** **** (**)	SOFT VER. 1~ (Major Ver. (LSB))
0000 0000 (00)	(" (MSB))
1111 0111 (F7)	END OF EXCLUSIVE

Transmits when INQUIRY MESSAGE REQUEST Received

*4 : 0000 0000 (00h) = i3 / 0000 0001 (01h) = i2

1-5 STRUCTURE OF KORG SYSTEM EXCLUSIVE MESSAGES

1st Byte = 1111 0000 (F0) : Exclusive Status	
2nd Byte = 0100 0010 (42) : KORG ID	
3rd Byte = 0011 gggg (3g) : Format ID g:Global ch.	EX. Header
4th Byte = 0011 1001 (39) : i2/i3 ID	
5th Byte = 0fff ffff (ff) : Function Code (See Func Code List)	
6th Byte = 0ddd dddd (dd) : Data	
LastByte = 1111 0111 (F7) : End of Exclusive ...... EOX	

1-6 Transmitted Function Code List

Func	Description	R	D	E	C
42	MODE DATA	O			O*4
4E	MODE CHANGE				O*5
41	PARAMETER CHANGE				O*6
53	DRUM KIT PARAMETER CHANGE				O*7
40	PROGRAM PARAMETER DUMP			O	
4C	ALL PROGRAM PARAMETER DUMP		O	O	
64	ALL ARRANGEMENT PARAMETER DUMP		O	O	
65	ALL STYLE DATA DUMP		O	O	
48	ALL SONG DATA DUMP		O	O	
66	ALL BACKING SEQUENCE DATA DUMP		O	O	
51	GLOBAL DATA DUMP		O	O	
52	DRUMS DATA DUMP		O	O	
50	ALL DATA(GLB,DRM,PRG,ARR,STY,SEQ,BSQ)DUMP		O	O	
26	RECEIVED MESSAGE FORMAT ERROR			O	
23	DATA LOAD COMPLETED (ACK)			O	
24	DATA LOAD ERROR (NAK)			O	
21	WRITE COMPLETED			O	
22	WRITE ERROR			O	

Transmitted when
R : Request message is received
D : Data dump from Global mode. Page 9 (Doesn't respond to Exclusive ENA,DIS)
E : Exclusive message is received
C : Mode or No. is changed by switch

Some Request Messages are not received in some modes. See 2-6.

* When transmitting a series of exclusive messages to the 12/13, wait until [DATA LOAD COMPLETED] or [WRITE COMPLETED] is received.

*5 : Transmitted when Mode is changed.
*6 : Transmitted when editing parameters in EDIT PROGRAM, and PROGRAM (Performance Edit) mode.
*7 : Transmitted when editing drum kit's parameters in GLOBAL mode.
*7 : Transmitted when entering EDIT PROGRAM mode, or when editing a Performance Edit parameter.

2. RECOGNIZED RECEIVE DATA

2-1 CHANNEL MESSAGES

Status (Hex)	Second (Hex)	Third (Hex)	Description	ENA
1000 nnnn (8n)	0kkk kkkk (kk)	0xxx xxxx (xx)	Note Off	A
1001 nnnn (9n)	0kkk kkkk (kk)	0000 0000 (00)	Note Off	A
1001 nnnn (9n)	0kkk kkkk (kk)	0vvv vvvv (vv)	Note On	A
			vvv vvvv=1~127	T.Q
1010 nnnn (An)	0kkk kkkk (kk)	0vvv vvvv (vv)	Poly Key Pressure (For Seq.Recording) *1	P
1011 nnnn (Bn)	0000 0000 (00)	0mmm mmmm (mm)	Bank Select(MSB)	C
1011 nnnn (Bn)	0000 0001 (01)	0vvv vvvv (vv)	Modulation1 Depth (Pitch Modulation)	C
1011 nnnn (Bn)	0000 0010 (02)	0vvv vvvv (vv)	Modulation2 Depth (Cutoff Modulation)	C
1011 nnnn (Bn)	0000 0100 (04)	00vv vvvv(40)	Foot Pedal Off (Select Main Scale)	C
1011 nnnn (Bn)	0000 0100 (04)	01vv vvvv()3F)	Foot Pedal On (Select Sub Scale)	C
1011 nnnn (Bn)	0000 0110 (06)	0vvv vvvv (vv)	Data Entry (MSB) (For RPN Edit)	C
1011 nnnn (Bn)	0000 0111 (07)	0vvv vvvv (vv)	Volume	C
1011 nnnn (Bn)	0000 1010 (0A)	0vvv vvvv (vv)	Panpot (A:B Panpot)	C
1011 nnnn (Bn)	0000 1011 (0B)	0vvv vvvv (vv)	Expression	P
1011 nnnn (Bn)	0000 1100 (0C)	0vvv vvvv (vv)	Effect Control (Dyna Mod Src= PEDAL1)	C
1011 nnnn (Bn)	0000 1101 (0D)	0vvv vvvv (vv)	Effect Control (Dyna Mod Src= PEDAL2) *1	C
1011 nnnn (Bn)	0010 0000 (20)	0111 1111 (11)	Bank Select(LSB)	C
1011 nnnn (Bn)	0010 0110 (26)	0vvv vvvv (vv)	Data Entry (LSB) (For RPN Edit)	C
1011 nnnn (Bn)	0100 0000 (40)	00xx xxxx(40)	Hold1 Off (Damper Off)	C
1011 nnnn (Bn)	0100 0000 (40)	01xx xxxx(3F)	" On (Damper On)	C
1011 nnnn (Bn)	0100 1000 (48)	0vvv vvvv (vv)	Release Time (Perf Edit Rel Time)*4	C
1011 nnnn (Bn)	0100 1001 (49)	0vvv vvvv (vv)	Attack Time (" " Atk Time)*4	C
1011 nnnn (Bn)	0100 1000 (4A)	0vvv vvvv (vv)	Brightness (" " Cutoff)*4	C
1011 nnnn (Bn)	0101 1011 (5B)	0vvv vvvv (vv)	Reverb Level (Send C Level)	C
1011 nnnn (Bn)	0101 1100 (5C)	0000 0000 (00)	Effect1 Level (FX1 Off)	C
1011 nnnn (Bn)	0101 1100 (5C)	0xxx xxxx(00)	" (FX1 On)	C
1011 nnnn (Bn)	0101 1101 (5D)	0vvv vvvv (vv)	Chorus Level (Send D Level)	C
1011 nnnn (Bn)	0101 1110 (5E)	0000 0000 (00)	Effect2 Level (FX2 Off)	C
1011 nnnn (Bn)	0101 1110 (5E)	0xxx xxxx(00)	" (FX2 On)	C
1011 nnnn (Bn)	0110 0000 (60)	0000 0000 (00)	DATA Increment (For RPN Edit)	C
1011 nnnn (Bn)	0110 0001 (61)	0000 0000 (00)	DATA Decrement (For RPN Edit)	C
1011 nnnn (Bn)	0110 0100 (64)	0000 00rr (0r)	RPN Parameter No.(LSB) *3	A
1011 nnnn (Bn)	0110 0101 (65)	0000 0000 (00)	RPN Parameter No.(MSB) *3	A
1011 nnnn (Bn)	0111 1000 (78)	0000 0000 (00)	All Sound Off	C
1011 nnnn (Bn)	0111 1001 (79)	0000 0000 (00)	Reset All Controllers	C.Q
1011 nnnn (Bn)	0ccc cccc (cc)	0vvv vvvv (vv)	Control Data (For Seq.Recording)	A
			ccc cccc=00~127	
1011 nnnn (Bn)	0111 1010 (7A)	0000 0000 (00)	Local Control Off	A
1011 nnnn (Bn)	0111 1010 (7A)	0111 1111 (7F)	Local Control On	A
1011 nnnn (Bn)	0111 1011 (7B)	0000 0000 (00)	All Notes Off	A
1011 nnnn (Bn)	0111 110x (7x)	0000 0000 (00)	Omni Mode Off/On	A
1011 nnnn (Bn)	0111 1110 (7E)	000m mmm((11)	Mono Mode On	A
			m mmm=0~16	
1011 nnnn (Bn)	0111 1111 (7F)	0000 0000 (00)	Poly mode On	A
1100 nnnn (Cn)	0ppp pppp (pp)	----- -----	Program Change	P
1101 nnnn (Dn)	0vvv vvvv (vv)	----- -----	Channel Pressure (Prog.Cgab CNG) *1,2	T
1110 nnnn (En)	0bbb bbbb (bb)	0bbb bbbb (bb)	Bender Change (Aftertouch)(Pitch Bend)	C

nnnn : MIDI Channel No. (0~15) ...... Usually Global Channel.
Then in SONG Mode. each track's channel.
kkkk : Always Global Channel No. (0~15)

x : Random

ENA : Same as TRANSMITTED DATA

2-3 SYSTEM REALTIME MESSAGES

Status (Hex)	Description	
1111 1000 (F8)	Timing Clock	*5
1111 1010 (FA)	Start	*5
1111 1011 (FB)	Continue	*5
1111 1100 (FC)	Stop	*5
1111 1110 (FE)	Active Sensing	

*5 : Received when in SONG mode (External Clock)

2-4 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE (NON REALTIME)

Byte (Hex)	Description	
1111 0000 (F0)	EXCLUSIVE STATUS	
0111 1110 (7E)	NON REALTIME MESSAGE	
0ggg gggg (gg)	MIDI CHANNEL	*6
0000 aaaa (0a)	SUB ID 1	*7
0000 00bb (0b)	SUB ID 2	*7
1111 0111 (F7)	END OF EXCLUSIVE	

*6 : gg = 0~F : Received if Global Channel
   = 7F : Received on any Channel

*7 : a,b = 06,01 : INQUIRY MESSAGE REQUEST
   = 09,01 : GENERAL MIDI MODE ON
   (Received anytime except when Seq playing/recording, or when DATA FILER page is selected)

2-5 UNIVERSAL SYSTEM EXCLUSIVE MESSAGE (REALTIME)

Byte (Hex)	Description	
1111 0000 (F0)	EXCLUSIVE STATUS	
0111 1111 (7F)	REALTIME MESSAGE	
0ggg gggg (gg)	MIDI CHANNEL	*6
0000 0100 (04)	SUB ID 1	*8
0000 00bb (0b)	SUB ID 2	*8
0vvv vvvv (vv)	VALUE(LSB)	*8
0mmm mmmm (mm)	VALUE(MSB)	*8
1111 0111 (F7)	END OF EXCLUSIVE	

*8 : b = 01 : MASTER VOLUME (mm,vv = 00,00~7F,7F : Min~Max)
   = 02 : MASTER BALANCE (mm,vv = 00,00~40,00~7F,7F : L~Center~R)

---

*1 :

mm,ll,pp = 00,00,00~3F : Program	MIDI In (Hex): Program
00,00,00~3F	A11~A88
00,00,40~7F	B11~B88
00,01,00~3F	C11~C88
00,01,40~7F	D11~D88
00,02,00~0F	Dr1
00,02,10~17	Dr2
00,02,18	Dr7
00,02,19	Dr3
00,02,1A~1F	Dr7
00,02,20~27	Dr4
00,02,28~2F	Dr5
00,02,30~37	Dr8
00,02,38~3F	Dr1
00,02,40~47	Dr6
00,02,48~7F	Dr1
38,xx,00~3F	A11~A88
38,xx,40~7F	B11~B88
39,xx,00~3F	A11~A88
39,xx,40~7F	B11~B88
3A~3D,xx,xx	OFF *1-1
3E,xx,00~0F	Dr1
3E,xx,10~17	Dr2
3E,xx,18	Dr7
3E,xx,19	Dr3
3E,xx,1A~1F	Dr7
3E,xx,20~27	Dr4
3E,xx,28~2F	Dr5
3E,xx,30~37	Dr8
3E,xx,38~3F	Dr1
3E,xx,40~47	Dr1
3F,xx,xx	OFF *1-1

xx : Random
*1-1: When in PROGRAM Mode, it is ignored.

*2: After processing (while Exclusive = ENA) transmits exclusive message [DATA LOAD COMPLETED] or [DATA LOAD ERROR].

*3: rr = 0 : Pitch Bend Sensitivity
   = 1 : Fine Tune (When Received Ch = Global Ch, Master Tune)
   = 2 : Coarse Tune (Transpose)

*4 : vv < 40: Fast or Dark
   = 40: No change
   > 40: Slow or Bright

2-2 SYSTEM COMMON MESSAGES

Status (Hex)	Second (Hex)	Third (Hex)	Description
1111 0010 (F2)	0sss ssss (ss)	0ttt tttt (tt)	Song Position Pointer
1111 0011 (F3)	000s ssss (ss)	---- ----	Song Select

Received when in SONG mode (External Clock)

2-6 SYSTEM EXCLUSIVE MESSAGES

* Not received when Sequencer is playing, recording, or when the DATA FILER page is selected.

Function Code List

Func	Description	G	P	A	No.
12	MODE REQUEST	O			42
10	PROGRAM PARAMETER DUMP REQUEST	O	O	O	40
1C	ALL PROGRAM PARAMETER DUMP REQUEST	⊙	O	O	4C
30	ALL ARRANGEMENT PARAMETER DUMP REQUEST	⊙	O	O	64
31	ALL STYLE DATA DUMP REQUEST	⊙	O	O	65
18	ALL SONG DATA DUMP REQUEST	⊙	O	O	48
32	ALL BACKING SEQUENCE DATA DUMP REQUEST	⊙	O	O	66
0E	GLOBAL DATA DUMP REQUEST	⊙	O	O	51
0D	DRUMS DATA DUMP REQUEST	⊙	O	O	52
0F	ALL DATA(GLB,DRM,PRG,ARR,STY,SEQ,BSQ)DUMP REQ	⊙	O	O	50
11	PROGRAM WRITE REQUEST	⊙	O	O	21
40	PROGRAM PARAMETER DUMP	⊙	O		23
4C	ALL PROGRAM PARAMETER DUMP	⊙	O		23
64	ALL ARRANGEMENT PARAMETER DUMP	⊙	O		23
65	ALL STYLE DATA DUMP	⊙	O		23
48	ALL SONG DATA DUMP	⊙	O		23
66	ALL BACKING SEQUENCE DATA DUMP	⊙	O		23
51	GLOBAL DATA DUMP	⊙	O		23
52	DRUMS DATA DUMP	⊙	O		23
50	ALL DATA(GLB,DRM,PRG,ARR,STY,SEQ,BSQ) DUMP	⊙	O		23
4E	MODE CHANGE	O	O		23
41	PARAMETER CHANGE		O	O	23
53	DRUM KIT PARAMETER CHANGE			O	23

Received when in
G : GLOBAL Mode
P : PROG, E.PROG mode
A : any other mode

(⊙ Does not respond to Exclusive ENA. DIS on DATA DUMP page)

No.: MIDI Out Function No.
(transmitted after the message has been received.)

---

3. MIDI EXCLUSIVE FORMAT (R: Receive, T: Transmit)

See 1-5 'STRUCTURE OF KORG SYSTEM EXCLUSIVE MESSAGES'

(1) MODE REQUEST   R

Byte	Description
F0,42,3g,39	EXCLUSIVE HEADER
0001 0010 (12)	MODE REQUEST 12H
1111 0111 (F7)	EOX

Receives this message, and transmits Func=42 message.

(2) PROGRAM PARAMETER DUMP REQUEST   R

Byte	Description
F0,42,3g,39	EXCLUSIVE HEADER
0001 0000 (10)	PROGRAM PARAMETER DUMP REQUEST 10H
1111 0111 (F7)	EOX

Receives this message, and transmits Func=40 or Func=24 message.

(3) ALL PROGRAM PARAMETER DUMP REQUEST   R

Byte	Description
F0,42,3g,39	EXCLUSIVE HEADER
0001 1100 (1C)	ALL PROGRAM PARAMETER DUMP REQUEST 1CH
1111 0111 (F7)	EOX

Receives this message, and transmits Func=4C or Func=24 message.

(4) ALL ARRANGEMENT PARAMETER DUMP REQUEST   R

Byte	Description
F0,42,3g,39	EXCLUSIVE HEADER
0011 0000 (30)	ALL ARRANGEMENT PARAMETER DUMP REQUEST 30H
1111 0111 (F7)	EOX

Receives this message, and transmits Func=64 or Func=24 message.

(5) ALL STYLE DATA DUMP REQUEST   R

Byte	Description
F0,42,3g,39	EXCLUSIVE HEADER
0011 0001 (31)	ALL STYLE DATA DUMP REQUEST 31H
1111 0111 (F7)	EOX

Receives this message, and transmits Func=65 or Func=24 message.

(6) ALL SONG DATA DUMP REQUEST   R

Byte	Description
F0,42,3g,39	EXCLUSIVE HEADER
0001 1000 (18)	ALL SONG DATA DUMP REQUEST 18H
1111 0111 (F7)	EOX

Receives this message, and transmits Func=48 or Func=24 message.

(7) ALL BACKING SEQUENCE DATA DUMP REQUEST   R

Byte	Description
F0,42,3g,39	EXCLUSIVE HEADER
0011 0010 (32)	ALL BACKING SEQUENCE DATA DUMP REQUEST 32H
1111 0111 (F7)	EOX

Receives this message, and transmits Func=66 or Func=24 message.

(8) GLOBAL DATA DUMP REQUEST   R

Byte	Description
F0,42,3g,39	EXCLUSIVE HEADER
0000 1110 (0E)	GLOBAL DATA DUMP REQUEST 0EH
1111 0111 (F7)	EOX

Receives this message, and transmits Func=51 or Func=24 message.

(9) DRUMS DATA DUMP REQUEST   R

Byte	Description	
F0,42,3g,39	EXCLUSIVE HEADER	
0000 1101 (0D)	DRUMS DATA DUMP REQUEST	0DH
1111 0111 (F7)	EOX	

Receives this message,and transmits Func=52 or Func=24 message.

(10) ALL DATA(GLB,DRM,PRG,ARR,STY,SEQ,BSQ) DUMP REQUEST   R

Byte	Description	
F0,42,3g,39	EXCLUSIVE HEADER	
0000 1111 (0F)	ALL DATA DUMP REQUEST	0FH
1111 0111 (F7)	EOX	

Receives this message, and transmits Func=50 or Func=24 message.

(11) PROGRAM WRITE REQUEST   R

Byte	Description	
F0,42,3g,39	EXCLUSIVE HEADER	
0001 0001 (11)	PROGRAM WRITE REQUEST	11H
0ppp pppp (pp)	Write Program No.(0-63,64-65)	
1111 0111 (F7)	EOX	

Receives this message, writes the data and transmits Func=21 or Func=22 message.

(12) PROGRAM PARAMETER DUMP   R, T

Byte	Description	
F0,42,3g,39	EXCLUSIVE HEADER	
0100 0000 (40)	PROGRAM PARAMETER DUMP	40H
0ddd dddd (dd)	Data	(NOTE 1,2)
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=10 message, and transmits this message & data.
This message and data is transmitted when entering EDIT PROGRAM mode, or editing a Performance Edit Parameter.

(13) ALL PROGRAM PARAMETER DUMP   R, T

Byte	Description	
F0,42,3g,39	EXCLUSIVE HEADER	
0100 1100 (4C)	ALL PROGRAM PARAMETER DUMP	4CH
0ddd dddd (dd)	Data	(NOTE 1,3)
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=1C message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.

(14) ALL ARRANGEMENT PARAMETER DUMP   R, T

Byte	Description	
F0,42,3g,39	EXCLUSIVE HEADER	
0110 0100 (64)	ALL ARRANGEMENT PARAMETER DUMP	64H
0ddd dddd (dd)	Data	(NOTE1,4)
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=30 message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed

(15) ALL STYLE DATA DUMP   R, T

Byte	Description	
F0,42,3g,39	EXCLUSIVE HEADER	
0110 0101 (65)	ALL STYLE DATA DUMP	65H
0ddd dddd (dd)	Style Header	(NOTE 1.5-1)
0ddd dddd (dd)	Style Data	(NOTE 1.5-2)
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=31 message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.

(16) ALL SONG DATA DUMP   R, T

Byte	Description	
F0,42,3g,39	EXCLUSIVE HEADER	
0100 1000 (48)	ALL SONG DATA DUMP	48H
0sss ssss (ss)	Seq.Data Size	(NOTE 6-1)
0ddd dddd (dd)	Control Data	(NOTE 1.6-2)
0ddd dddd (dd)	Sequence Data	(NOTE 1.6-3)
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=18 message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.

(17) ALL BACKING SEQUENCE DATA DUMP   R, T

Byte	Description	
F0,42,3g,39	EXCLUSIVE HEADER	
0110 0110 (66)	ALL BACKING SEQUENCE DATA DUMP	66H
0sss ssss (ss)	Backing Sequence Data Size	(NOTE 7-1)
0ddd dddd (dd)	Control Data	(NOTE 1.7-2)
0ddd dddd (dd)	Backing Sequence Data	(NOTE 1.7-3)
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=32 message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.

(18) GLOBAL DATA DUMP   R, T

Byte	Description	
F0,42,3g,39	EXCLUSIVE HEADER	
0101 0001 (51)	GLOBAL DATA DUMP	51H
0ddd dddd (dd)	Data	(NOTE 1,8)
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=0E message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.

(24) MODE DATA   T

Byte	Description	
F0,42,3e,39	EXCLUSIVE HEADER	
0100 0010 (42)	MODE DATA	42H
0000 mmmm (0m)	Mode Data	(NOTE 11)
0000 00vv (0v)	Card Status	(NOTE 13)
1111 0111 (F7)	EOX	

Receives Func=12 message, and transmits this message & data.

(25) MIDI IN DATA FORMAT ERROR   T

Byte	Description	
F0,42,3e,39	EXCLUSIVE HEADER	
0010 0110 (26)	MIDI IN DATA FORMAT ERROR	26H
1111 0111 (F7)	EOX	

Transmits this message when there is an error in the MIDI IN message (for example, if other than expected).

(26) DATA LOAD COMPLETED (ACK)   T

Byte	Description	
F0,42,3e,39	EXCLUSIVE HEADER	
0010 0011 (23)	DATA LOAD COMPLETED	23H
1111 0111 (F7)	EOX	

Transmits this message when DATA LOADING and PROCESSING have been completed.

(27) DATA LOAD ERROR (NAK)   T

Byte	Description	
F0,42,3e,39	EXCLUSIVE HEADER	
0010 0100 (24)	DATA LOAD ERROR	24H
1111 0111 (F7)	EOX	

Transmits this message when DATA LOADING and PROCESSING have not been completed (for example, if memory protected).

(28) WRITE COMPLETED   T

Byte	Description	
F0,42,3e,39	EXCLUSIVE HEADER	
0010 0001 (21)	WRITE COMPLETED	21H
1111 0111 (F7)	EOX	

Transmits this message when DATA WRITE via MIDI has been completed.

(29) WRITE ERROR   T

Byte	Description	
F0,42,3e,39	EXCLUSIVE HEADER	
0010 0010 (22)	WRITE ERROR	22H
1111 0111 (F7)	EOX	

Transmits this message when DATA WRITE via MIDI has not been completed.

(19) DRUMS DATA DUMP   R, T

Byte	Description	
F0,42,3e,39	EXCLUSIVE HEADER	
0101 0010 (52)	DRUMS DATA DUMP	52H
0ddd dddd (dd)	Data	(NOTE 1.9)
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=00 message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.

(20) ALL DATA(GLB,DRM,PRG,ARR,STY,SEQ,BSQ) DUMP   R, T

Byte	Description	
F0,42,3e,39	EXCLUSIVE HEADER	
0101 0000 (50)	ALL DATA DUMP	50H
0sss ssss (ss)	Sequence Data Size	(NOTE 6-1)
0sss ssss (ss)	Backing Sequence Data Size	(NOTE 7-1)
0ddd dddd (dd)	Data	(NOTE 1.10)
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.
Receives Func=0F message, and transmits this message & data.
Transmits this message & data when DATA DUMP is executed.

(21) MODE CHANGE   R, T

Byte	Description	
F0,42,3e,39	EXCLUSIVE HEADER	
0100 1110 (4E)	MODE CHANGE	4EH
0000 mmmm (0m)	Mode Data	(NOTE 11)
1111 0111 (F7)	EOX	

Receives this message & data, changes the Mode, and transmits Func=23 or Func=24 message.
When the mode is changed by switch, this message & data is transmitted.

(22) PARAMETER CHANGE   R, T

Byte	Description	
F0,42,3e,39	EXCLUSIVE HEADER	
0100 0001 (41)	PARAMETER CHANGE	41H
0ppp pppp (pp)	Parameter Page	(TABLE 8)
0ppp pppp (pp)	Parameter Stage	(TABLE 8)
0ppp pppp (pp)	Parameter Position	(TABLE 8)
0vvv vvvv (vv)	Value (LSB bit6~0)	(NOTE 12)
0vvv vvvv (vv)	Value (MSB bit13~7)	(NOTE 12)
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.
When the Parameter No. is changed by switch, this message & data is transmitted.

(23) DRUM KIT PARAMETER CHANGE   R, T

Byte	Description	
F0,42,3e,39	EXCLUSIVE HEADER	
0101 0011 (53)	DRUM KIT PARAMETER CHANGE	53H
0000 000k (0k)	Drum Kit No.	(NOTE 14)
00ss ssss (ss)	Index No.(ss=00~59)	(TABLE 9)
0ppp pppp (pp)	Parameter No.	(NOTE 12)
0vvv vvvv (vv)	Value (LSB bit6~0)	(NOTE 12)
0vvv vvvv (vv)	Value (MSB bit13~7)	(NOTE 12)
1111 0111 (F7)	EOX	

Receives this message & data, and transmits Func=23 or Func=24 message.

NOTE 1 :
DUMP DATA CONVERT n=0~   for NOTE 2, 3, 4, 5-1, 5-2, 6-2, 6-3, 7-2, 7-3, 8, 9, 10

DATA (1set = 8bit x 7Byte)

b7	~	b0	b7	~	b0	b7	~	b0
7n+0			7n+1			7n+6		

MIDI DATA (1set = 7bit x 8Byte)

b7b7b7b7b7b7b7	b6	~	b0	b6	~	b0	b6	~	b0
0	7n+0			7n+1			7n+6		

7n+6,5,4,3,2,1,0

NOTE 2 : PROGRAM PARAMETER DUMP FORMAT
[Parameter No.00],......,[Parameter No.163]   (See TABLE 1, NOTE 1)
164Byte = 7x23+3 → 8x23+(1+3) = 188Byte

NOTE 3 : ALL PROGRAM PARAMETER DUMP FORMAT   (See TABLE 1, NOTE 2)
[Prog.Di1(164Byte)],......,[Prog.D88(164Byte)].
[Prog.Dr7(164Byte)], [Prog.Dr8(164Byte)].
164x(54+2)Byte = 7x1546+2 → 8x1546+(1+2) = 12371Byte   (4.0Sec)

NOTE 4 : ALL ARRANGEMENT PARAMETER DUMP FORMAT   (See TABLE 5, NOTE 1)
[ARR11(131Byte)],......,[ARR88(131Byte)]
131x64Byte = 7x1197+5 → 8x1197+(1+5) = 9582Byte   (3.1Sec)

NOTE 5 : ALL STYLE DATA DUMP FORMAT
5-1: Style Header (24Byte)   (See TABLE 6-3, NOTE 1)
5-2: Style Data (3328~65496Byte)   (See TABLE 6-1, TABLE 6-2, NOTE 1)
∴ MIN= 24+3328Byte = 7x478+6 → 8x478+(1+6) = 3831Byte
  MAX= 24+65496Byte = 7x9360+0 → 8x9360 = 74880Byte   (1.2~24.0Sec)

NOTE 6 : ALL SONG DATA DUMP FORMAT
6-1: Sequence Data Size (2Byte)   4Step(16Byte)/1Size
     [Data Size (bit6~0)].
     [Data Size (bit13~7)].
6-2: Control Data Dump Format (3702Byte)   (See TABLE 4-1, NOTE 1)
     [Control Data (Song Size(296) x 10 = 2960Byte)].
     [Pattern Data (200Byte)].
     [Song0-Tr.1 Addr (2Byte)],...,[Song0-Tr.16 Addr].[Song0-Tempo Track Addr],
     [Song1-Tr.1 Addr (2Byte)],...,[Song9-Tempo Track Addr] (340Byte).
     [Pattern0 Addr (2Byte)],...,[Pattern99 Addr] (200Byte).
     [Pattern End Addr(2Byte)]
6-3: Sequence Data Dump Format   (See TABLE 4-2, NOTE 1)
     [Sequence 1st Data(4Byte)],......,[Seq.nth Data]
     n : Seq.Data Step = 0 ~ 40000
     3702Byte+4x[Seq.Data Step]Byte = 7xA+B → 8xA+(1+B)Byte
     ∴ 6-1,6-2,6-3 = 2+8xA+(1+B)Byte   (1.3~58.5Sec)

NOTE 7 : ALL BACKING SEQUENCE DATA DUMP FORMAT
7-1: Backing Sequence Data Size (2Byte)   4Step(16Byte)/1Size   (See 7-3)
     [Data Size (bit6~0)].
     [Data Size (bit13~7)].
7-2: Control Data Dump Format (2292Byte)   (See TABLE 7-1, NOTE 1)
     [Control Data (BSQ Size(195) x 10 = 1950Byte)].
     [BSQ0-Tr.1 Addr (2Byte)],...,[BSQ0-Tr.16 Addr].[BSQ0-Tempo Track Addr].
     [BSQ1-Tr.1 Addr   ],...,[BSQ9-Tr.16 Addr].[BSQ9-Tempo Track Addr] (340Byte).
     [End Addr (2Byte)]
7-3: Backing Sequence Data Dump Format   (See TABLE 7-2, NOTE 1)
     [B.Sequence 1st Data(4Byte)],...,[BSQ nth Data]
     n : BSQ Data Step = 0 ~ 40000
     2292Byte+4x[BSQ Data Step]Byte = 7xA+B → 8xA+(1+B)Byte
     ∴ 7-1,7-2,7-3 = 2+8xA+(1+B)Byte   (0.8~58.0Sec)

NOTE 8 : GLOBAL DATA DUMP FORMAT   (See TABLE 2, NOTE 1)
     [Global Data (28Byte)]
     28 = 7x4+0 → 8x4 = 32Byte   (0.3Sec)

NOTE 9 : DRUMS DATA DUMP FORMAT   (See TABLE 3, NOTE 1)
     [Drum Kit Data (7x60x2Byte)]
     840Byte = 7x120+0 → 8x120 = 960Byte

NOTE 10 : ALL DATA (GLB,DRM,PRG,ARR,STY,SEQ,BSQ) DUMP FORMAT
     [Global Data].   (See NOTE 1)
     [Drums Data].   (See NOTE 8)
     [All Program Parameters].   (See NOTE 9)
     [All Arrangement Parameters].   (See NOTE 3)
     [All Style Data].   (See NOTE 4)
     [All SONG Data]   (See NOTE 5)
     [All Backing Sequence Data]   (See NOTE 6-2, 6-3)
     28+840+10824+8384+sty+3702+4x[Seq.Data Step]Byte+2292+4x[BSQ Data Step]   (See NOTE 7-2, 7-3)
     = 7xC+D → 8xC+(1+D)Byte   (10.5~90.0Sec)

NOTE 11 : mmm = 2 : PROGRAM   10 : ARRANGEMENT
              3 : EDIT PROGRAM   11 : BACKING SEQUENCE
              4 : GLOBAL
              6 : SONG
              8 : DISK
              9 : EDIT STYLE

NOTE 12 : VALUE DATA FORMAT (Use with PARAMETER CHANGE,DRUM KIT PARAMETER CHANGE)
     Bit15~13 of Value Data is the Sign Flag, and each bit has the same value

Value Data

MIDI Data

NOTE 13 : vv = 0 : Card not inserted
              = 1 : Bad card
              = 2 : Style Card

NOTE 14 : kk = 00: DrumKit1
              01:   "   2
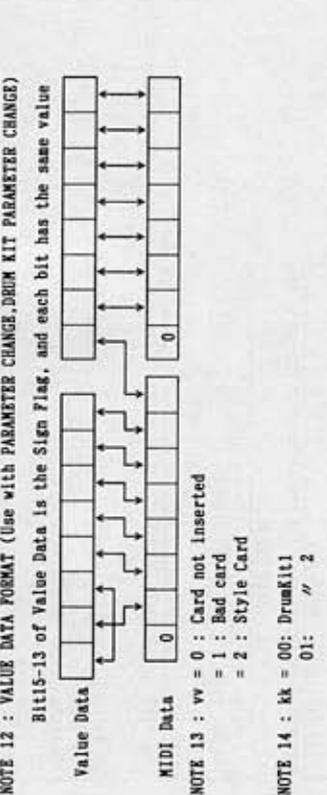
PROGRAM PARAMETERS (TABLE 1)

No.	PARAMETER	DATA(Hex) : VALUE	
00	PROGRAM NAME (Head)	20~7F : ' '~'←'	
09	PROGRAM NAME (Tail)		
	OSCILLATOR		
10	OSCILLATOR MODE	0,1,2	*1
11	ASSIGN	bit0=0:POL.,=1:MON / bit1=0:OFF,=1:ON HOLD	
12	OSC-1 M/D.SOUND(LSB)	0~???? : 0~????	*14
13	OSC-1 M/D.SOUND(MSB)		
14	OSC-1 OCTAVE	FE~01 : 32'~4'	
15	OSC-2 M/D.SOUND(LSB)	0~???? : 0~????	*14
16	OSC-2 M/D.SOUND(MSB)		
17	OSC-2 OCTAVE	FE~01 : 32'~4'	
18	INTERVAL	F4~0C : -12~12	
19	DETUNE	CE~32 : -50~50	
20	DELAY START	00~63 : 00~99	
	PITCH EG		
21	START LEVEL	9D~63 : -99~99	
22	ATTACK TIME	00~63 : 00~99	
23	ATTACK LEVEL	9D~63 : -99~99	
24	DECAY TIME	00~63 : 00~99	
25	RELEASE TIME	00~63 : 00~99	
26	RELEASE LEVEL	9D~63 : -99~99	
27	TIME VELOCITY SENSE	00~63 : 00~99	
28	LEVEL VELOCITY SENSE	9D~63 : -99~99	
	CUTOFF MG		
29	WAVEFORM	bit0~2 : 0~5 *2 / OSC-1 MG ENABLE bit5=0:OFF,=1:ON / OSC-2 MG ENABLE bit6=0:OFF,=1:ON / KEY SYNC bit7=0:OFF,=1:ON	
30	FREQUENCY	00~63 : 00~99	
31	DELAY	00~63 : 00~99	
32	INTENSITY	00~63 : 00~99	
	AFTERTOUCH		
33	PITCH BEND RANGE	F4~0C : -12~12	
34	VDF CUTOFF	9D~63 : -99~99	
35	VDF MG INT.	00~63 : 00~99	
36	VDA AMPLITUDE	9D~63 : -99~99	
	JOYSTICK		
37	PITCH BEND RANGE	F4~0C : -12~12	
38	VDF SWEEP INT.	9D~63 : -99~99	
39	VDF MG INT.	00~63 : 00~99	
	OSC-1 PITCH EG		
40	PITCH EG INT	9D~63 : -99~99	
	OSC-1 PITCH MG		
41	WAVEFORM	bit0~2 : 0~5 *2 / bit7=0:OFF,=1:ON	
42	FREQUENCY	00~63 : 00~99	
43	DELAY	00~63 : 00~99	
44	FADE IN	00~63 : 00~99	
45	INTENSITY	00~63 : 00~99	
46	FREQ MOD BY KBD TRK	9D~63 : -99~99	
47	INTENSITY MOD BY AT	00~63 : 00~99	
48	INTENSITY MOD BY JS	00~63 : 00~99	
49	FREQ MOD BY AT+JS	00~09 : 0~9	

No.	PARAMETER	DATA(Hex) : VALUE	
	VDF-1		
50	CUTOFF VALUE	00~63 : 00~99	
51	KBD TRACK KEY	00~7F : C-1~G9	
52	CUTOFF KBD TRACK	9D~63 : -99~99	
53	EG INTENSITY	00~63 : 00~99	
54	EG TIME KBD TRACK	00~63 : 00~99	
55	EG TIME VEL.SENSE	00~63 : 00~99	
56	EG INT.VEL.SENSE	9D~63 : -99~99	
	VDF-1 EG		
57	ATTACK TIME	00~63 : 00~99	
58	ATTACK LEVEL	9D~63 : -99~99	
59	DECAY TIME	00~63 : 00~99	
60	BREAK POINT	9D~63 : -99~99	
61	SLOPE TIME	00~63 : 00~99	
62	SUSTAIN LEVEL	9D~63 : -99~99	
63	RELEASE TIME	00~63 : 00~99	
64	RELEASE LEVEL	9D~63 : -99~99	
	VDA-1		
65	OSCILLATOR LEVEL	00~63 : 00~99	
66	KBD TRACK KEY	00~7F : C-1~G9	
67	AMP. KBD TRACK INT.	9D~63 : -99~99	
68	AMP. VELOCITY SENSE	9D~63 : -99~99	
69	EG TIME KBD TRACK	00~63 : 00~99	
70	EG TIME VEL.SENSE	00~63 : 00~99	
	VDA-1 EG		
71	ATTACK TIME	00~63 : 00~99	
72	ATTACK LEVEL	00~63 : 00~99	
73	DECAY TIME	00~63 : 00~99	
74	BREAK POINT	00~63 : 00~99	
75	SLOPE TIME	00~63 : 00~99	
76	SUSTAIN LEVEL	00~63 : 00~99	
77	RELEASE TIME	00~63 : 00~99	
	OSC-1 EG TIME KBD TRACK, VEL. SW & POLARITY		
78	F.EG TIME K.T SW&POL	bit0~7	*3
79	F.EG TIME VEL.SW&POL	bit0~7	*3
80	A.EG TIME K.T SW&POL	bit0~7	*3
81	A.EG TIME VEL.SW&POL	bit0~7	*3
	OSC-1 SEND		
82	D SEND LEVEL / C SEND LEVEL	bit0~3 : 0~9 / bit4~7 : 0~9	
	COLOR-1		
83	INTENSITY	00~63 : 00~99	
84	VELOCITY SENSE	9D~63 : -99~99	
	VDF-1, VDA-1 KBD TRACK MODE		
85	F-1, A-1 KBD TRACK MODE		*4
	OSC-1 PANPOT		
86	A:B PAN	00~1E,FF	*5
	OSC-2 PARAMETER		
87		SAME AS OSC-1(40~86)	
133	(RESERVE)	00	
134	EFFECT PARAMETER		
135			
163			*20

GLOBAL PARAMETERS (TABLE 2)

No.	PARAMETER	DATA(Hex) : VALUE	
	GLOBAL PARAMETER		
00	MASTER TUNE	CE~32 : -50~50	
01	KEY TRANSPOSE	F4~0C : -12~12	
02	DAMPER POLARITY	00 : , 01 :	
03	ASSIGNABLE PEDAL 1	00~0B	*8
04	ASSIGNABLE PEDAL 2	00~0B	*8
05	MAIN SCALE TYPE	00~0A	*9
06	MAIN SCALE KEY	00~0B : C~B	
07	USER SCALE	CE~32 : -50~50	
18	VELOCITY CURVE	0~7 : 1~8	
19	AFTER TOUCH CURVE	0~7 : 1~8	
20	SUB SCALE TYPE	00~0A	*9
21	SUB SCALE KEY	00~0B : C~B	
22	RESERVE	00	
23			
27			

DRUM PARAMETERS (TABLE 3)

No.	PARAMETER	DATA(Hex) : VALUE	
	DRUM KIT 1-INDEX#0		
00	INST NO.	00:OFF, 01~:INT	
01	KEY	0C~73 : C0~G8	
02	A:B PAN	bit0~4	*10
	EXCLUSIVE ASSIGN	bit5~7	*10
03	TUNE	88~78 : -120~120	
04	LEVEL	9D~63 : -99~99	
05	DECAY	9D~63 : -99~99	
06	D SEND LEVEL / C SEND LEVEL	bit0~3: 0~9 / bit4~7: 0~9	
	DRUM KIT 1-INDEX#1 ~ DRUM KIT 2-#59		
07		SAME AS DRUM KIT 1-#0(00~06)x(60x2-1)	
839			

---

*1 : 0 : SINGLE
1 : DOUBLE
2 : DRUMS

*2 : 0 : TRIANGLE
1 : UP SAW
2 : DOWN SAW
3 : SQUARE1
4 : RANDOM
5 : SQUARE2

*3 : bit0 : ATTACK TIME SW   =0:OFF, =1:ON
bit1 : DECAY TIME SW   //
bit2 : SLOPE TIME SW   //
bit3 : RELEASE TIME SW   //
bit4 : ATTACK TIME POLARITY =0:+, =1:-
bit5 : DECAY TIME   //
bit6 : SLOPE TIME   //
bit7 : RELEASE TIME   //

*4 : bit0,1 ... VDF   0 : OFF
bit4,5 ... VDA   1 : LOW
2 : HIGH
3 : ALL

*5 : 00 : L15
OF : CNT
1E : R15
1F : PRG (When in SONG Mode)
FF : OFF

*7 : bit0 : PROGRAM CHANGE =0:DIS, =1:ENA
bit1 : DAMPER   //
bit2 : AFTERTOUCH   //
bit3 : CONTROL CHANGE   //
bit7=1 : A11~A88   : B11~B88
: B11~B88   : Dr1~Dr6
: Dr1~Dr6   : C11~C88
=0 : C11~C88   : D11~D88
: D11~D88   : Dr7~Dr8
: Dr7~Dr8

*6 : A11~A88 : 00~3F
B11~B88 : 40~7F
Dr1~Dr6 : 80~85
C11~C88 : 86~C5
D11~D88 : 00~3F
Dr7~Dr8 : 40~41

Program is selected by *6 and *7(bit7)

*15 : SEQUENCE DATA FORMAT

DATA(1-H) DATA(1-L) DATA(2-H) DATA(2-L)

*15-1 NOTE ON/OFF

| 1vvv vvv t | tttt tttt | kkkk kkk g | gggg gggg | Length |

Velocity Event Time Key No.

t = 30 : ,   t = 1FE : Tie from previous bar
g = 30 : ,   g = 1FE : Tie to next bar

*15-2 PITCH BEND

| 0001 000 t | tttt tttt | 0 vvv vvvv | 0 vvv vvvv | Value(L) |

Event Time Value(H)

*15-3 AFTER TOUCH

| 0010 000 t | tttt tttt | 0000 0000 | 0 vvv vvvv | Value |

Event Time

*15-4 PROGRAM CHANGE

| 0011 000 t | tttt tttt | 0000 00bb | 0ppp pppp | Program No. |

Event Time Bank

b = 00~02
p = 00~7F

*15-5 CONTROL CHANGE

| 0100 000 t | tttt tttt | 0vvv vvvv | 0ccc cccc | Control No. |

Event Time Value

c = 00~65 : Same as MIDI Control Change
  = 66 : Assignable Pedal

*15-6 POLY KEY PRESSURE

| 0101 000 t | tttt tttt | 0 vvv vvvv | 0 kkk kkkk | Key No. |

Event Time Value

*15-7 BAR

| 0110 00bb | bbbb bbbb | xx ss ssss | 0ppp pppp | Pattern No. |

Bar No. Type Beat

x = 00 : Pattern not used
  = 10 : Pattern continued
  = 11 : Pattern start
s = 10~18 : 1/4~9/4
  = 20~2F : 1/8~16/8
  = 30~3F :1/16~16/16

bit7 = 0 : High Resolution
       1 : Low Resolution

*15-8 TRACK END

| 0111 000 t | tttt tttt | 0000 00bb | bbbb bbbb | Last Bar No. |

Event Time

---

*9 :
0 : EQUAL TEMP
1 : EQUAL TEMP 2
2 : PURE MAJOR
3 : PURE MINOR
4 : ARABIC
5 : PYTHAGOREAN
6 : WERKMEISTER
7 : KIRNBERGER
8 : SLENDRO
9 : PELOG
A : USER SCALE

*10 : bit0~4 = 00 : L15

OF : CNT
1E : R15
1F : OFF

*11 : bit0,1= 0 : OFF
1 : INT
2 : EXT
3 : BOTH

bit2,3= 0 : Play, = 1 : Mute, = 2 : Solo

bit5~7 = 0 : EX Off
1 : EX Group1
6 : EX Group6
7 : Self

*12 : bit0~5 10~18 : 1/4 ~ 9/4
20~2F : 1/8 ~ 16/8
30~3F : 1/16 ~ 16/16

bit7 = 0 : High Resolution
       1 : Low Resolution

*13 : bit0~6 = 0 : Song0
9 : Song9
7F : OFF

bit7 = 0/1 → Auto Start OFF/ON

*14 : When set to Single/Double Mode
0000 : A.Piano 1
0153 : DJ Kit 2
0154 : A.Piano 3 (i2 only)

When set to Drum Mode
00 : User Kit 1
07 : Percussion

(TABLE 4-1)

No.	PATTERN 0 PARAMETERS		*12
2960	BEAT	01~03 : 1~99	
2961	LENGTH		
	PATTERN 1~99 PARAMETERS		
2962	SAME AS PATTERN 0(2960,2961)	x 99	
3159			
	SONG 0, TRACK 1 DATA ADDRESS		
3160	DATA ADDRESS(LSB)	0000 (Start Addr)	
3161	" " (MSB)		
	SONG 0, TRACK 2 ~ TRACK 16 DATA ADDRESS		
3162	SAME AS SONG 0 TRACK 1 ADDRESS(3160,3161)		
3191			x 15
	SONG 0, TEMPO TRACK DATA ADDRESS		
3192	DATA.ADDRESS (LSB)		
3193	" " (MSB)		
	SONG 1~9 TRACK DATA ADDRESS		
3194	SAME AS SONG 0 TRACK ADDRESS(3160~3193)		
3499			x 9
	PATTERN 0 DATA ADDRESS		
3500	DATA. ADDRESS (LSB)		
3501	" " (MSB)		
	PATTERN 1 ~ PATTERN 99 DATA ADDRESS		
3502	SAME AS PATTERN 0(3500,3501)		
3699			
3700	End Pattern Addr(L)		
3701	" " (H)		

SEQUENCE DATA   (TABLE 4-2)

No.	PARAMETER	DATA(Hex) : VALUE	
	SEQUENCE DATA 1		
3702	DATA (1-L)		*15
3703	DATA (1-H)		*15
3704	DATA (2-L)		*15
3705	DATA (2-H)		*15
	SEQUENCE DATA 2 ~		
3706	SAME AS SEQUENCE DATA 1(3702~3705)		

*8 : 0 : OFF
1 : PROGRAM UP
2 : " DOWN
3 : SEQUENCER START/STOP
4 : SEQUENCER PUNCH IN/OUT
5 : EFFECT 1 ON/OFF
6 : " 2 "
7 : SCALE CHANGE
8 : VOLUME
9 : VDF CUTOFF
A : EFFECT CONTROL
B : DATA ENTRY

SEQUENCER CONTROL DATA

No.	PARAMETER	DATA(Hex) : VALUE	
	SONG 0 CONTROL DATA		
00	MIDI Channel(Tr.1)	00~0F : 1~16	
	......		
15	MIDI Channel(Tr.16)		*11
16	STATUS (Tr.1)		
	......		
31	STATUS (Tr.16)		
32	BEND RANGE (Tr.1)	00~0C : 00~12	
	......		
47	BEND RANGE (Tr.16)		*12
48	BEAT	28~F0 : 40~240	
49	TEMPO	bit0=0:OFF, =1:ON	
50	PROTECT (Tr.1)	bit7	
	......		
	PROTECT (Tr.8)	bit7	
51	PROTECT (Tr.9)	bit0=0:OFF, =1:ON	
	......		
	PROTECT (Tr.16)	bit7	
52	NEXT SONG NO.	20~7F : 'A'~'~'	*13
53	SONG NAME (Head)		
	......		
62	SONG NAME (Tail)		
63	(RESERVE)	00	
64	EFFECT PARAMETER		
	......		*20
92			
	TRACK 1 CONTROL DATA		
93	PROGRAM NO.		*8
94	OUTPUT LEVEL	00~7F : 00~127	
95	KEY TRANSPOSE	E8~18 : -24~24	
96	DETUNE	CE~32 : -50~50	
97	A:B PAN	00~1E,1F,FF	*5
98	D SEND LEVEL	bit0~3 : 0~9,PRG	
	C SEND LEVEL	bit4~7 : 0~9,PRG	
99	KEY WINDOW TOP	00~7F : C-1~G9	
100	KEY WINDOW BOTTOM	00~7F : C-1~G9	
101	VEL WINDOW TOP	01~7F : 01~127	
102	VEL WINDOW BOTTOM	01~7F : 01~127	
103	CONTROL FILTER		*7
104	MIDI CHANNEL	00~0F : 1~16	
105	SAME AS TRACK 1(93~104)		
	TRACK 2~16 CONTROL DATA		x 15
284			
285~290	(RESERVE)	00	
291	METRONOME LEVEL	00~63 : 0~99	
292	METRONOME PAN	00~1E	*5
293	METRONOME LEAD IN	0~2 : 0~2	
294	TEMPO TRACK ON/OFF	0:OFF, 1:ON	
295	(RESERVE)	00	
	SONG 1~9 CONTROL DATA		
296	SAME AS SONG 0 (00~295)	x 9	
2959			

ARRANGEMENT PARAMETERS

No.	PARAMETER	DATA(Hex) : VALUE
00	ARRANGE NAME (Head)	20~7F : ' '~' '
09	ARRANGE NAME (Tail)	
10	STYLE NO.	00~37 : 11~68
11		: 71~84
12	INITIAL VARIATION	00~03 : VAR 1~4
13		
14	INITIAL TEMPO	0A~D2 : 40~240
15	KEYBOARD ASSIGN	00~03 : *16
16	SPLIT POINT	24~60 : C2~C7
17	OCTAVE	F2~02 : -2~+2
18	TRANSPOSE	F5~0B : -C#~+B
19	MANUAL DRUM KIT	00~07 : Dr1~Dr8
	SWITCHES	
20	DYNAMIC VELOCITY	bit0=0:OFF, =1:ON
	TEMPO LOCK	bit1:0:OFF, =1:ON
	KBD1 DAMPER ENABLE	bit2=0:OFF, =1:ON
	KBD2 DAMPER ENABLE	bit3=0:OFF, =1:ON
	CHORD SCANNING TYPE	
21	CHORD SCAN LOW	bit0=0:OFF, =1:ON
	CHORD SCAN HIGH	bit1=0:OFF, =1:ON
	BASS INVERSION	bit2=0:OFF, =1:ON
	CHORD HOLD	bit3=0:OFF, =1:ON
	CHORD LATCH	bit4=0:OFF, =1:ON
22	DEFAULT DRUM MAPPING	00~07 : Dr1~Dr8
25		
26	RESERVE	00
29		
30	FILL1	00~0C : OFF~DOWN
31		
32	FILL2	00~0C : OFF~DOWN
33		
	DRUM PARAMETERS	
34	PROG	*17
35	BANK	
36	VOL	00~7F : 0~127
37	PAN	*5
38	C SEND LEVEL	bit0~3 : 0~9,PRG
	D SEND LEVEL	bit4~7 : 0~9,PRG
39	OCTAVE	F2~02 : -2~+2
40	OUT STATUS	*11
41	WRAP-AROUND	FF~0B : STY~11
	PERCUSSION PARAMETERS	
42	SAME AS DRUMS	
49		
	BASS PARAMETERS	
50	SAME AS DRUMS	
57		

(TABLE 5)

No.	PARAMETER	DATA(Hex) : VALUE
	ACC 1~3 PARAMETERS	
58	SAME AS DRUMS	
81		
	KBD 1~2 PARAMETERS	
82	SAME AS DRUMS	
97		
	KBD1 VELOCITY WINDOW	
98	TOP	01~7F : 1~127
99	BOTTOM	01~7F : 1~127
	KBD2 VELOCITY WINDOW	
100	TOP	01~7F : 1~127
101	BOTTOM	01~7F : 1~127
102	EFFECT PARAMETERS	*20
130		

*16 : 00 : SINGLE
01 : LAYER
02 : SPLIT
03 : M.DRUMS

*17 : BANK = 00, PROG = 00~7F : A11~A88~B88
= 01, = 00~7F : C11~C88~D88
= 02, = 00~07 : Dr1~Dr8

STYLE CONTROL DATA

No.	PARAMETER	DATA(Hex) : VALUE
00	STYLE NAME (Head)	20~7F : ' '~' '
08	STYLE NAME (Tail)	
09		
10	STYLE TYPE	0. USER CREATED
		1. BUILT-IN
		2. CARD OR DISK
11	TEMPO	0A~D2 : 40~240
12	TIME SIGNATURE	Hi Res only *12
	NOTE RETRIGGER SWITCH	
13	BASS	bit2=0:OFF, =1:ON
	ACC1	bit3=0:OFF, =1:ON
	ACC2	bit4=0:OFF, =1:ON
	ACC3	bit5=0:OFF, =1:ON
	NOTE SHIFT UP RANGE	
14	BASS	00~0B : 0~11
15	ACC1	00~0B : 0~11
16	ACC2	00~0B : 0~11
17	ACC3	00~0B : 0~11
	TENSION AVAILABLE	
18	ACC1	bit3=0:OFF, =1:ON
	ACC2	bit4=0:OFF, =1:ON
	ACC3	bit5=0:OFF, =1:ON
19	RESERVE	00
37		
	DRUM PARAMETERS	
38	PROG	*17
39	BANK	
40	VOL	00~7F : 0~127
41	PAN	*5
	PERCUSSION PARAMETERS	
42	SAME AS DRUMS	
45		
	BASS PARAMETERS	
46	SAME AS DRUMS	
49		
	ACC 1~3 PARAMETERS	
50	SAME AS DRUMS	
61		
	VARIATION1, CHORD VARIATION1 PARAMETERS	
62	KEY	*18
63	LENGTH	00~10 : 0~16
	VARIATION1 CHORD VARIATION2~6 PARAMETERS	
64	SAME AS VARIATION1 CHORD VARIATION1	
73		
	VARIATION 2~4 PARAMETERS	
74	SAME AS VARIATION1	
109		

(TABLE 6-1)

No.	PARAMETER	DATA(Hex) : VALUE
	INTRO1 CHORD VARIATION1 PARAMETERS	
110	KEY	*18
111	LENGTH	00~10 : 0~10
	INTRO1 CHORD VARIATION2 PARAMETERS	
112	KEY	*18
113	LENGTH	00~10 : 0~16
	INTRO2 PARAMETERS	
114	SAME AS INTRO1	
117		
	ENDING 1~2 PARAMETERS	
118	SAME AS INTRO1	
125		
	FILL 1~2 PARAMETERS	
126	SAME AS INTRO1	
133		
	VARIATION 1 CHORD VARIATION TABLE	
134	Major	00~05 : 1~6
135	M6	00~05 : 1~6
136	M7	00~05 : 1~6
137	M7b5	00~05 : 1~6
138	sus4	00~05 : 1~6
139	sus2	00~05 : 1~6
140	M7sus4	00~05 : 1~6
141	minor	00~05 : 1~6
142	m6	00~05 : 1~6
143	m7	00~05 : 1~6
144	m7b5	00~05 : 1~6
145	mM7	00~05 : 1~6
146	7th	00~05 : 1~6
147	7b5	00~05 : 1~6
148	7sus4	00~05 : 1~6
149	dim	00~05 : 1~6
150	dimM7	00~05 : 1~6
151	aug	00~05 : 1~6
152	aug7	00~05 : 1~6
153	augM7	00~05 : 1~6
	VARIATION 2~4 CHORD VARIATION TABLE	
154	SAME AS VARIATION1	
213		

*18 : 00 : C MAJOR
01 : C MINOR
02 : C#MAJOR
03 : C#MINOR

16 : B MAJOR
17 : B MINOR

BACKING SEQUENCE CONTROL DATA

No.	PARAMETER	DATA(Hex) : VALUE	
	BSEQ 0 CONTROL DATA		
00	BSEQ NAME (Head)	20~7F : ' '~'—'	
...			
09	BSEQ NAME (Tail)	20~7F : ' '~'—'	
10	ARRANGEMENT NO.	00~3F : 11~88	
11			
12	STYLE NO.	00~37 : 11~68	
13		71~84	
14	VARIATION	00~03 : VAR 1~4	
15			
16	TEMPO	0A~D2 : 40~240	*16
17	KEYBOARD ASSIGN		
18	CHORD SCANNING TYPE		
	CHORD SCAN LOW	bit0=0:OFF, =1:ON	
	CHORD SCAN HIGH	bit1=0:OFF, =1:ON	
	BASS INVERSION	bit2=0:OFF, =1:ON	
	CHORD HOLD	bit3=0:OFF, =1:ON	
	CHORD LATCH	bit4=0:OFF, =1:ON	
19	KBD1 PROG		*17
20	KBD1 BANK		
21	KBD1 OCTAVE	FE~02 : -2~+2	
22	KBD2 PROG		*17
23	KBD2 BANK		
24	KBD2 OCTAVE	FE~02 : -2~+2	
25	KEYBOARD TRK STATUS		*21-1
26	CONTROL TRK STATUS		*21-1
27	CHORD TRK STATUS		*21-1
28	AUTOTEMPO	0A~D2 : 40~240	
29	BEAT	Hi Res only	*12
30	SPLIT POINT	24~60 : C2~C7	
31	TRANSPOSE	F5~0B : C#~B	
	SWITCHES		
32	DYNAMIC VELOCITY	bit0=0:OFF, =1:ON	
33	RESERVE	00	
...			
39			
40	METRONOME SWITCH		*21-2
41	METRONOME LEVEL	00~63 : 0~99	
42	METRONOME PAN		*5
43	METRONOME LEAD-IN	0~2 : 0~2	
44	NEXT BSEQ No.		*21-3
45	AUTO START		*21-4

No.	PARAMETER	DATA(Hex) : VALUE	
	EXTRA TRACK 1 CONTROL DATA		*17
46	PROG		
47	BANK		
48	VOL.	00~7F : 0~127	
49	PAN		*5
50	C SEND LEVEL	bit0~3 : 0~9,PRG	
	D SEND LEVEL	bit4~7 : 0~9,PRG	
51	TRACK STATUS		*11
52	BEND RANGE	00~0C : 00~12	
53	KEY TRANSPOSE	E8~18 : -24~24	
54	DETUNE	CE~32 : -50~50	
55	PROTECT	: OFF/ON	
56	MIDI CHANNEL	00~0F : 1~16	
57	VEL WINDOW TOP	01~7F : 1~127	
58	VEL WINDOW BOTTOM	01~7F : 1~127	
59	KEY WINDOW TOP	00~7F : C-1~G9	
60	KEY WINDOW BOTTOM	00~7F : C-1~G9	
61	EXTRA TRACK 2~8 CONTROL DATA		
	SAME AS TRACK 1		
...			
165			
166	EFFECT PARAMETER		*20
...			
194			
195	BSEQ 1~9 CONTROL DATA		
	SAME AS BSEQ 0		
...			
1949			
1950	BSEQ TRACK1 DATA ADDRESS		
1951	DATA ADDRESS (LSB)		
	DATA ADDRESS (MSB)		
1952	BSEQ TRACK 2~16 DATA ADDRESS		
	SAME AS BSEQ0 TRACK1 DATA ADDRESS		
...			
1981	BSEQ0 TEMPO TRACK DATA ADDRESS		
1982	SAME AS BSEQ0 TRACK1 DATA ADDRESS		
1983			
1984	BSEQ 1~9 DATA ADDRESS		
	SAME AS BSEQ0 TRACK DATA ADDRESS		
...			
2289			
2290	END ADDRESS (LSB)		
2291	END ADDRESS (MSB)		

*21-1 : Track Status
  00 : MUTE
  01 : PLAY

*21-2 : Metronome Switch
  00 : OFF
  01 : ON
  02 : REC

*21-3 : Next BSeq No.
  FF : OFF
  00 : BSeq 0
  09 : BSeq 9

*21-4 : Auto Start
  00 : OFF
  01 : ON

INTRO1 CHORD VARIATION TABLE

214	Major	00~01 : 1~2	
215	M6	00~01 : 1~2	
216	M7	00~01 : 1~2	
217	M7b5	00~01 : 1~2	
218	sus4	00~01 : 1~2	
219	sus2	00~01 : 1~2	
220	M7sus4	00~01 : 1~2	
221	minor	00~01 : 1~2	
222	m6	00~01 : 1~2	
223	m7	00~01 : 1~2	
224	m7b5	00~01 : 1~2	
225	mM7	00~01 : 1~2	
226	7th	00~01 : 1~2	
227	7b5	00~01 : 1~2	
228	7sus4	00~01 : 1~2	
229	dim	00~01 : 1~2	
230	dimM7	00~01 : 1~2	
231	aug	00~01 : 1~2	
232	aug7	00~01 : 1~2	
233	augM7	00~01 : 1~2	

INTRO2 CHORD VARIATION TABLE

234	SAME AS INTRO1		
...			
253			

ENDING 1~2 CHORD VARIATION TABLE

254	SAME AS INTRO1		
...			
293			

FILL 1~2 CHORD VARIATION TABLE

294	SAME AS INTRO1		
...			
333			

PATTERN 0 CONTROL DATA

334	BEAT	:	*12
335	LENGTH	01~63 : 1~99	

PATTERN 1~99 CONTROL DATA

336	SAME AS PATTERN 0		
...			
533			

VARIATION1 ACC1 DATA ADDRESS

534	DATA ADDRESS (LSB)		
535	DATA ADDRESS (MSB)		

VARIATION1 ACC 2~3 DATA ADDRESS

536	SAME AS VARIATION1 ACC1 DATA ADDRESS		
...			
539			

VARIATION1 BASS, DRUMS, PERC. DATA ADDRESS

540	SAME AS VARIATION1 DATA ADDRESS		
...			
545			

VARIATION 2~4 DATA ADDRESS

546	SAME AS VARIATION1 DATA ADDRESS		
...			
581			

ENDING 1~2 DATA ADDRESS

582	SAME AS VARIATION1 DATA ADDRESS		
...			
605			

FILL 1~2 DATA ADDRESS

606	SAME AS VARIATION1 DATA ADDRESS		
...			
629			

PATTERN 0 DATA ADDRESS

630	DATA ADDRESS (LSB)		
631	DATA ADDRESS (MSB)		

PATTERN 1~99 DATA ADDRESS

632	SAME AS PATTERN 0		
...			
829			
830	END PATTERN ADDR(L)		
831	END PATTERN ADDR(M)		

STYLE DATA (TABLE 6-2)

No.	PARAMETER	DATA(Hex) : VALUE	
	STYLE 1 DATA		
0	DATA (1-L)		*15
1	DATA (1-H)		*15
2	DATA (2-L)		*15
3	DATA (2-H)		*15
	STYLE 2 DATA ~		
4	SAME AS STYLE1		

STYLE HEADER (TABLE 6-3)

No.	PARAMETER	DATA(Hex) : VALUE	
	STYLE 1		
0	STYLE1 ADDRESS		
...			
3			
4	STYLE1 SIZE		
5			
	STYLE 2~4		
6	SAME AS STYLE1		
...			
23			

(TABLE 7-1)

B. SEQUENCE DATA (TABLE 7-2)

No.	PARAMETER	DATA(Hex) : VALUE
	BACKING SEQUENCE DATA 1	
0	DATA (1-L)	#19
1	DATA (1-H)	#19
2	DATA (2-L)	#19
3	DATA (2-H)	#19
	BACKING SEQUENCE DATA 2~	
4	SAME AS BACKING SEQUENCE DATA 1 (0~3)	

#19 : BACKING SEQUENCE DATA FORMAT

DATA(1-H) DATA(1-L) DATA(2-H) DATA(2-L)
→   →   →   →

#19-1 : BACKING CONTROL EVENT

1011 111 t	tttt tttt	vvvv vvvv	vvvv vvvv
EventID	EventTime	Value 2	Value 1

	EventID	Value	
0	Arrangement	0~63	11~88
1	Style	0~55	#19-1-1
2	Variation	0~9	#19-1-2
3	Keyboard Assign	0~3	#19-1-3
4	Chord Scan	0~3	#19-1-4
5	Chord Hold	0/1	OFF/ON
6	Bass Inversion	0/1	//
7	Transpose	-11~+11	//
8	Drum Mute	0/1	MUTE/PLAY
9	Perc.Mute	//	//
10	Bass Mute	//	//
11	ACC1 Mute	//	//
12	ACC2 Mute	//	//
13	ACC3 Mute	//	//
14	Drum Map	0~7	1~8
15	KBD1 Prog	V1 = PROG	V2 = BANK
16	KBD2 Prog	//	//
17	KBD1 Octave	-2~+2	
18	KBD2 Octave	-2~+2	

#19-1-1 : 0~55 : P11~P68, U1~U4, C1~C4

#19-1-2 : 0 : Variation1
3 : Variation4
4 : Intro1
5 : Intro2
6 : Ending1
7 : Ending2
8 : Fill1
9 : Fill2

#19-1-3 : 0 : SINGLE
1 : LAYER
2 : SPLIT
3 : M.DRUM

#19-1-4 : 0 : OFF
1 : LOWER
2 : UPPER
3 : FULL

#19-2 : CHORD EVENT

1111 111 t	tttt tttt	nnnn nnnn	bbbb rrrr
ChordID	EventTime	TensionNote	Bass Root

ChordID = 0 : No Chord
1 : Major
2 : Major 6th
3 : Major 7th
4 : Major 7th Flatted 5th
5 : Suspended 4th
6 : Suspended 2nd
7 : Major 7th Suspended 4th
8 : Minor
9 : Minor 6th
10 : Minor 7th
11 : Minor 7th Flatted 5th
12 : Minor Major 7th
13 : Dominant 7th
14 : 7th Flatted 5th
15 : 7th Suspended 4th
16 : Diminished
17 : Diminished Major 7th
18 : Augmented
19 : Augmented 7th
20 : Augmented Major 7th

TensionNote = 0000 0001 : Flatted 9th
0000 0010 : 9th
0000 0100 : Sharped 9th
0000 1000 : 11th
0001 0000 : Sharped 11th
0010 0000 : Flatted 13th
0100 0000 : 13th

Bass = 0~11 (C~B)
Root = 0~11 (C~B)

#20 EFFECT PARAMETERS

No.	PARAMETER	DATA(Hex) : VALUE
(00)	Effect 1 Type No.	0.1~2F:OFF,1~47
(01)	" 2 " "	0.1~2F:OFF,1~47
(02)	" 1 L-Ch R.Balnc	00~64 : 00~100
(03)	" 1 R-Ch "	00~64 : 00~100
(04)	" 2 L-Ch "	00~64 : 00~100
(05)	" 2 R-Ch "	00~64 : 00~100
(06)	Output 3 Pan	00,01~65 *20-1
(07)	" 4 "	00,01~65 *20-1
(08)	Effect I/O	bit5~0 *20-2
(09)	Effect 1 Parameters	*20-3
(16)		*20-4
(17)	Effect 1 Mod Source	00~0D
(18)	Effect 1 Mod Amount	F1~0F : -15~15
(19)	Effect 2 Parameters	*20-3
(26)		*20-4
(27)	Effect 2 Mod Source	00~0D
(28)	Effect 2 Mod Amount	F1~0F : -15~15

*20-2 :
```
00 : Off      R     bit0=0:Efct1 L-Ch Off,=1:On
01 :          R     bit1=0:  // 1 R-Ch Off,=1:On
02 : 01~99          bit2=0:  // 2 L-Ch Off,=1:On
                    bit3=0:  // 2 R-Ch Off,=1:On
64 : 99:01          bit4,5=0:Serial
65 : L                       1:Parallel
                             2:Parallel 2
                             3:Parallel 3
```

*20-3 : Effect Parameters (8Byte) 47 Types

offset	PARAMETER	DATA(Hex) : VALUE
	1~3:Hall, (4,5:Room, 6:Live Stage)	
(00)	Reverb Time	00~61(2F):0.2~9.9(4.9)
(01)	" " (H)	00
(02)	High Damp	00~63 : 00~99
(03)	Pre Delay	00~C8 : 00~200
(04)	E.R Level	00~63 : 00~99
(05)	(NUL)	00
(06)	EQ High	F4~0C : -12~12
(07)	EQ Low	F4~0C : -12~12

NUL not listed from here on, Value must be 00.

offset	PARAMETER	DATA(Hex) : VALUE
	7:Wet Plate, 8:Dry Plate, 9:Spring	
(00)	Pre Delay(L)	00~C8 : 00~200
(01)	" " (H)	
(02)	E.R Level	01~0A : 01~10
(03)	Reverb Time	00~63 : 00~99
(04)	High Damp	00~63 : 00~99
(06)	EQ Low	F4~0C : -12~12
(07)	EQ High	F4~0C : -12~12

offset	PARAMETER	DATA(Hex) : VALUE
	10~12:Early Reflection 1,2,3	
(00)	E.R Time	00~46 : 100~800
(01)	Pre Delay	00~C8 : 00~200
(06)	EQ High	F4~0C : -12~12
(07)	EQ Low	F4~0C : -12~12

13:Stereo Delay, 14:Cross Delay

	PARAMETER	DATA(Hex) : VALUE
(00)	Delay Time L (L)	00~1F4: 00~500
(01)	" " (H)	
(02)	Feedback	9D~63 :-99~99
(03)	High Damp	00~63 : 00~99
(04)	Delay Time R (L)	00~1F4: 00~500
(05)	" " (H)	
(06)	EQ High	F4~0C : -12~12
(07)	EQ Low	F4~0C : -12~12

15:Dual Delay

	PARAMETER	DATA(Hex) : VALUE
(00)	Delay Time L (L)	00~1F4: 00~500
(01)	" " (H)	
(02)	Feedback L	9D~63 :-99~99
(03)	High Damp L	00~63 : 00~99
(04)	Delay Time R (L)	00~1F4: 00~500
(05)	" " (H)	
(06)	Feedback R	9D~63 :-99~99
(07)	High Damp R	00~63 : 00~99

16~18:Multitap Delay 1,2,3

	PARAMETER	DATA(Hex) : VALUE
(00)	Delay Time A(L)	00~1F4: 00~500
(01)	" " (H)	
(02)	Delay Time B(L)	00~1F4: 00~500
(03)	" " (H)	
(04)	Feed back	9D~63 :-99~99
(06)	EQ Low	F4~0C : -12~12
(07)	EQ High	F4~0C : -12~12

19,20:Stereo Chorus 1,2

	PARAMETER	DATA(Hex) : VALUE
(00)	Mod Depth	00~63 : 00~99
(01)	Mod Speed	00~D8 : *20-3-2
(02)	MG Status *20-3-3	bit0=0:Sin,=1:Tri / bit1 ← 1 / bit2 ← 0
(03)	Delay Time	00~C8 : 00~200
(06)	EQ High	F4~0C : -12~12
(07)	EQ Low	F4~0C : -12~12

21:Quadrature Chorus, 22:X Over Chorus

	PARAMETER	DATA(Hex) : VALUE
(00)	Delay Time L	00~FA : 00~250
(01)	Delay Time R	00~FA : 00~250
(02)	Mod Speed	01~63 : 01~99
(03)	Mod Depth	00~63 : 00~99
(04)	Mod Waveform	EB~14 : *20-3-4
(06)	EQ Low	F4~0C : -12~12
(07)	EQ High	F4~0C : -12~12

23:Harmonic Chorus

	PARAMETER	DATA(Hex) : VALUE
(00)	Delay Time A (L)	00~1F4: 00~500
(01)	" " (H)	
(02)	Delay Time B (L)	00~1F4: 00~500
(03)	" " (H)	
(04)	Mod Speed	01~63 : 01~99
(05)	Mod Depth	00~63 : 00~99
(06)	Filter Split Point	00~12 : 00~18

24:Symphonic Ensemble

	PARAMETER	DATA(Hex) : VALUE
(00)	Mod Depth	00~63 : 00~99
(06)	EQ High	F4~0C : -12~12
(07)	EQ Low	F4~0C : -12~12

25,26:Flanger1,2, 27:X Over Flanger

	PARAMETER	DATA(Hex) : VALUE
(00)	Delay Time	00~1F4: 00~500
(01)	Mod Depth	00~C8 : 00~200
(02)	Mod Speed	01~63 : 01~99
(03)	Feedback	9D~63 :-99~99
(06)	EQ Low	F4~0C : -12~12
(07)	EQ High	F4~0C : -12~12

28:Exciter

	PARAMETER	DATA(Hex) : VALUE
(00)	Harmonic density	9D~63 :-99~99
(01)	Hot Spot	00~09 : 01~10
(06)	EQ High	F4~0C : -12~12
(07)	EQ Low	F4~0C : -12~12

29:Enhancer

	PARAMETER	DATA(Hex) : VALUE
(00)	Harmonic Density	01~63 : 01~99
(01)	Hot Spot	01~14 : 01~20
(02)	Stereo Width	00~63 : 00~99
(03)	Delay	01~63 : 01~99
(06)	EQ Low	F4~0C : -12~12
(07)	EQ High	F4~0C : -12~12

30:Distortion, 31:Over Drive

	PARAMETER	DATA(Hex) : VALUE
(00)	Drive	01~6F : 01~111
(01)	Hot Spot	00~63 : 00~99
(02)	Resonance	00~63 : 00~99
(03)	Distortion Level	00~63 : 00~99
(06)	EQ Low	F4~0C : -12~12
(07)	EQ High	F4~0C : -12~12

32,33:Phaser 1,(2)

	PARAMETER	DATA(Hex) : VALUE
(00)	Mod Depth	00~63 :: 00~99
(01)	Mod Speed	00~D8 :: *20-3-2
(02)	MG Status *20-3-3	bit0=0:Sin,=1:Tri / bit1 ← 1,(0) / bit2 ← 0
(03)	Feedback	9D~63 : -99~99
(04)	Hot Spot	00~63 : 00~99

34:Rotary Speaker

	PARAMETER	DATA(Hex) : VALUE
(00)	Vibrato Depth	00~0F : 00~15
(01)	Acceleration	01~0F : 01~15
(02)	Slow Speed	01~63 : 01~99
(03)	Fast Speed	00~63 : 00~99

35:Auto Pan, (36:Tremolo)

	PARAMETER	DATA(Hex) : VALUE
(00)	Depth	00~63 : 00~99
(01)	Speed	00~D8 : *20-3-2
(02)	MG Status *20-3-3	bit0=0:Sin,=1:Tri / bit1 ← 1, (0) / bit2 ← 0
(03)	Shape	9D~63 : -99~99
(06)	EQ High	F4~0C : -12~12
(07)	EQ Low	F4~0C : -12~12

37:Parametric EQ

	PARAMETER	DATA(Hex) : VALUE
(00)	Low Freq	00~1D : 00~29
(01)	Low Gain	F4~0C : -12~12
(02)	Mid Freq	00~63 : 00~99
(03)	Mid Gain	F4~0C : -12~12
(04)	Mid Width	00~63 : 00~99
(05)	High Freq	00~1D : 00~29
(06)	High Gain	F4~0C : -12~12

38:Chorus-Delay, 39:Flanger-Delay

	PARAMETER	DATA(Hex) : VALUE
(00)	Delay Time	00~32 :: 00~50
(01)	Mod Speed	01~63 :: 01~99
(02)	Mod Depth	00~63 :: 00~99
(03)	Feedback	9D~63 :-99~99
(04)	Delay Time	F4~0C :: 00~450
(05)	Feedback	9D~63 :-99~99

40:Delay / Hall

	PARAMETER	DATA(Hex) : VALUE
(00)	Delay Time (L)	9D~63 :-99~99 / 00~1F4 : 00~500
(01)	Delay Time (H)	00~09 : 01~10
(02)	Feedback	F4~0C : -12~12
(03)	High Damp	9D~63 :-99~99
(04)	Reverb Time	00~63 : 00~99
(06)	High Damp	00~61 : 0.2~9.9
(07)	Pre Delay	00~96 :: 00~150

41:Delay / Room

	PARAMETER	DATA(Hex) : VALUE
(00)	Delay Parameter	*20-3-1
(03)		
(04)	Reverb Time	00~2F : 0.2~4.9
(06)	High Damp	00~63 :: 00~99
(07)	Pre Delay	00~96 :: 00~150

42:Delay / Chorus, (43:Delay / Flanger)

	PARAMETER	DATA(Hex) : VALUE
(00)	Delay Parameter	*20-3-1
(03)		
(04)	Depth	00~63 :: 00~99
(05)	Speed	00~D8 :: *20-3-2
(06)	MG Status *20-3-3	bit0=0:S,=1:T(←0) / bit1 ← 0, / bit2 ← 0, (←-1)
(07)	Feedback	0,(9D~63:-99~99)

44:Delay / Distortion, 45:Delay / Over Drive

	PARAMETER	DATA(Hex) : VALUE
(00)	Delay Time (L)	00~1F4: 00~500
(01)	" " (H)	
(02)	Feedback	9D~63 : -99~99
(03)	Drive	01~6F : 01~111
(04)	Hot Spot	01~63 : 01~99
(05)	Resonance	00~63 : 00~99
(06)	Distortion Level	01~63 : 01~99

46:Delay / Phaser

	PARAMETER	DATA(Hex) : VALUE
(00)	Delay Parameter	*20-3-1
(03)		
(04)	Depth	00~63 : 00~99
(05)	Speed	00~D8 : *20-3-2
(06)	Feedback	9D~63 :-99~99

47:Delay / Rotary Speaker

	PARAMETER	DATA(Hex) : VALUE
(00)	Delay Time (L)	00~1F4: 00~500
(01)	" " (H)	
(02)	Feedback	9D~63 :-99~99
(03)	Acceleration	00~0F : 01~15
(04)	Slow Speed	01~63 : 01~99
(05)	Fast Speed	01~63 : 01~99

*20-3-1 : Delay Parameter
Same as 40-(00)~(03)

*20-3-2 : Data(Hex) Value[Hz]
00~63 0.03~ 3.00 (0.03step)
64~C7 3.1 ~13.0 (0.1 step)
C8~D8 14 ~30.0 (1 step)

*20-3-3 : MG Status
bit0 : Waveform =0:Sin, =1:Tri
bit1 : Phase =0:0°, =1:180°
bit2 : Wave Shape =0: Normal
=1: for Flanger

*20-3-4 : Waveform
EB : T+10
::
FF : T-10
00 : S-10
::
14 : S+10

*20-4 : Dynamic Modulation Source
0 : None
1 : Joy Stick (+Y)
2 : Joy Stick (-Y)
3 : Aftertouch
4 : Assignable Pedal 1
5 : Assignable Pedal 2
6 : VDA EG

PROGRAM PARAMETERS : PAGE/STAGE/POSITION TO OFFSET (TABLE 8)

STAGE	PARAMETER	A	B	C	D	E	F	G	H
PAGE 0 : OSCILLATOR									
0	OSCILLATOR MODE	10				11		6	7
1	OSC-1	12	13		65	14	40	86	82
2	OSC-2	15	16		112	17	87	133	129
3		18	19			20			
4		21	22	23	24	25	26	28	27
5	PITCH EG								
PAGE 1 : VDF 1									
0	CUTOFF	50		53		51	83	85	
1	KEYBOARD TRACKING	52							
2	EG TIME KEYBOARD TRACKING	54			78	78	78	78	78
3	EG INTENSITY	56					84		
4	EG TIME VELOCITY SENSE	55	58			79	79	79	79
5	ENVELOPE	57	58	59	60	61	62	63	64
PAGE 2 : VDF 2									
0	CUTOFF	97		100		98		132	
1	KEYBOARD TRACKING	99							
2	EG TIME KEYBOARD TRACKING	101			125	125	125	125	125
3	EG INTENSITY	103					131		
4	EG TIME VELOCITY SENSE	102	105			126	126	126	126
5	ENVELOPE	104	105	106	107	108	109	110	111
PAGE 3 : VDA 1									
0		0	1	2	3		5	6	7
1	KEYBOARD TRACKING	67				66		85	
2	EG TIME KEYBOARD TRACKING	69				80	80	80	80
3	EG INTENSITY	68							
4	EG TIME VELOCITY SENSE	70				81	81	81	81
5	ENVELOPE	71	72	73	74	75	76	77	78
PAGE 4 : VDA 2									
0		0	1	2	3	4	5	6	7
1	KEYBOARD TRACKING	114				113		132	
2	EG TIME KEYBOARD TRACKING	116				127	127	127	127
3	EG INTENSITY	115							
4	EG TIME VELOCITY SENSE	117							
5	ENVELOPE	118	119	120	121	122	123	124	125
PAGE 5 : PITCH MG									
0		0	1	2	3	4	5	6	7
1	OSC-1	41			45	43	44	48	47
2	OSC-1	42			92	46	49	41	41
4	OSC-2	88				90	91	95	94
5	OSC-2	89				93	96	96	88
PAGE 6 : VDF MG/JS									
0	VDF MG/JS	0	1	2	3	4	5	6	7
1	VDF MG INT	29			30		31	32	
3	PITCH BEND	29					35	39	29
4	CUTOFF	37					33		
5	LEVEL	38					34		
		36							
PAGE 7 : EFFECT									
0	EFFECT1 TYPE	0	1	2	3	4	5	6	7
		155				157	166		167
1	EFFECT1 PARAMETERS	168 – 176							
3	EFFECT2 TYPE	156				158	177		178
4	EFFECT2 PARAMETERS	179 – 187							
5	EFFECT PLACMENT	165			161	162		163	164

DRUM KIT PARAMETERS
PARAM No. for DRUM PARAM CHANGE
n : 0~59 (Index)

(TABLE 9)

No.	PARAMETER	No. from TABLE 3
0	INST NO.	0+7n
1	KEY	1+7n
2	TUNE	3+7n
3	OUTPUT LEVEL	4+7n
4	DECAY	5+7n
5	EXCLUSIVE ASSIGN	2+7n b5~7
6	A:B PAN	2+7n b0~4
7	C SEND LEVEL	6+7n b4~7
8	D SEND LEVEL	6+7n b0~3