

KORG opsix native

Owner's Manual

E1



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Introduction

Thank you for purchasing the KORG software synthesizer- opsix native. To help you get the most out of your new instrument, please read this manual carefully.

Main Features

- This is the plugin version of the opsix, KORG's altered FM synthesizer. The plugin features the same synthesizer engine as the hardware version.
- The opsix features an FM sound generator that produces complex harmonics by rapidly modulating the basic waveforms of its oscillators using other oscillators.
- In addition to FM synthesis, the opsix also features various Operator modes such as a ring modulator, wavefolder and so on. The six Operators can be combined to create a wide variety of sounds.
- The opsix includes a rich selection of filters including Polysix and MS-20 models, which covers the bases for making sounds like those generated with subtractive synthesis.
- Three high-definition multi-effects are available, and you can select from 30 types for each.
- 350 preset programs are included in this plugin, including 30 template programs. These programs are compatible with the hardware version of this synth, and you can use sound librarian software to receive and transmit the program data.
- A powerful 16-step polyphonic sequencer is also included.

About the sound generator of the opsix

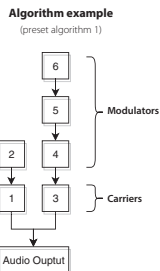
The principles of FM sound generation were discovered and established by Dr. John Chowning at Stanford University in the 1970s, when he was experimenting with vibrato. FM sound generation was later packaged into an LSI chip and put into practical use by Yamaha Corporation. From the beginning of the 1980s, FM tone generation was used as an internal sound source on the DX series, personal computers, game machines and cellphones.

Operator (modulator, carrier)

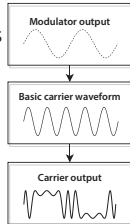
The FM (Frequency Modulation) sound generator is based on synthesis elements called "Operators." Operators are modulated using simple input waveforms (WAVE) such as sine waves, outputting sounds with complex harmonics. Operators can act as either a modulator or a carrier. The output sound from a modulator feeds into another Operator and modifies that Operator's output. Carriers receive the output sound from modulators and output the modulated result as audio.

Algorithms

In the FM sound generator, the combination of the roles and connections of the Operators is called an "algorithm." Selecting an algorithm is a good starting point for creating sound. The opsix sound generator includes six Operators, and more than 40 preset algorithms are provided. You can use the user algorithm function to create new combinations as well.



What happens when modulators modulate the carriers

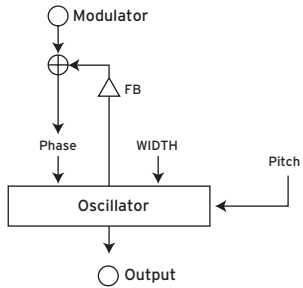
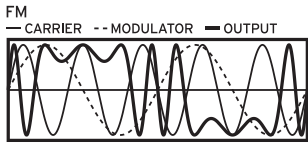


Operator modes

Although the basis of the opsix is the FM sound generator, you can change the Operator mode to perform different kinds of modulation besides FM. The combination of ring modulator, filter, and wavefolder makes it possible to create new kinds of sounds that surpass the range of typical FM sounds.

An Operator includes an input, an output and an oscillator. The carrier's Operator mode determines how the oscillator is modulated by the input of the modulator. This modulation gives the sound its character. To add to the FM, Ring Mod, Filter, Filter FM, Wave Folder and Effect Operator modes, the opsix features Mute and Bypass modes that are useful when editing.

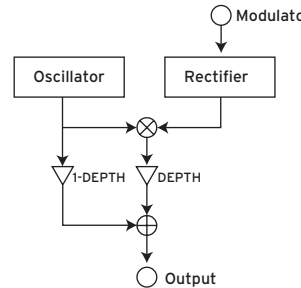
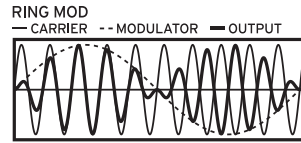
FM



As an example, when the LFO is used to raise and lower the pitch, you will hear a vibrato-like effect. FM (Frequency Modulation) is an ultra high-speed vibrato. The phase of an oscillator is modulated using the input signal from the modulator, which rapidly raises and lowers its pitch. (This works the same as Korg's VPM tone generator and typical FM synthesizers.) As modulation is incredibly fast, we hear the result not as vibrato, but as a change in tone. In this Operator mode, we can use the FB and WIDTH parameters to control the amount of self-feedback and the width of the oscillator waveform.

- **Typical program::** 057: Strum Down, 327: 2OP FM

Ring Mod.

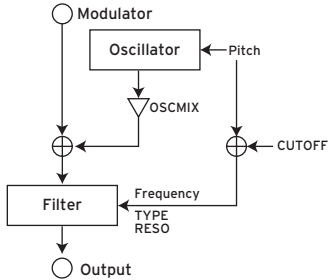
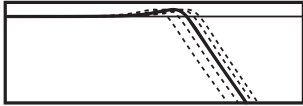


Modulating the amplitude of a signal creates tremolo. Ring modulation, or Ring Mod for short, is ultra-fast tremolo. It is historically called this because of the shape of the electrical circuit originally used to create the effect. The input signal from the modulators are multiplied with the carrier oscillator to rapidly change the amplitude of the signal. As with FM, the extremely fast modulation is perceived as a change in tonal character. The input from the modulator(s) can be processed by a rectifier, where the "SHAPE" parameter controls the amount of rectification. The larger the value, the more overtones will be added.

- **Typical program:** 134: Ring It On, 331: Ring Mod

Filter

FILTER

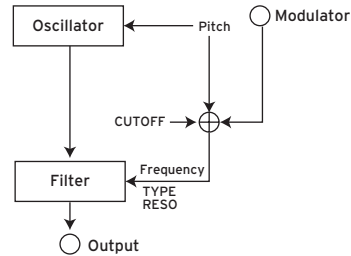
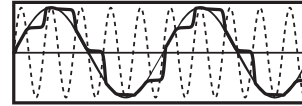


This is a filter with a key tracking function. The input signals from the oscillator and modulator(s) are input into the filter. The “OSCMIX” parameter controls the amount of the oscillator signal fed to the filter. The cutoff frequency is synchronized to the oscillator pitch and the “CUTOFF” parameter adds an offset.

- **Typical program:** 178: Formant Pad, 324: Reso Noise

Filter FM

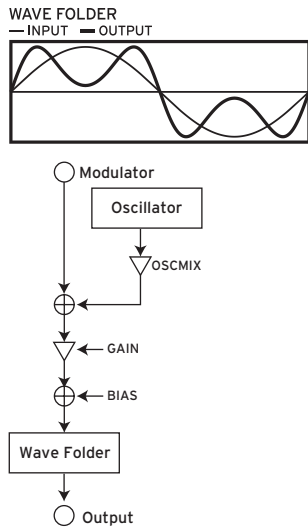
FILTER FM
— CARRIER — MODULATOR — OUTPUT



Modulating a filter's cutoff with an LFO creates an effect like a wah pedal. Filter FM creates an ultra high-speed wah effect. The cutoff frequency is modulated using the input signals from the modulator(s), and the oscillator signal is used as audio input for the filter. As with Filter mode, the modulation center frequency is synchronized with the oscillator pitch, and you can use the CUTOFF parameter to add an offset.

- **Typical program:** 157: FilterFM Pad, 335: Filter FM

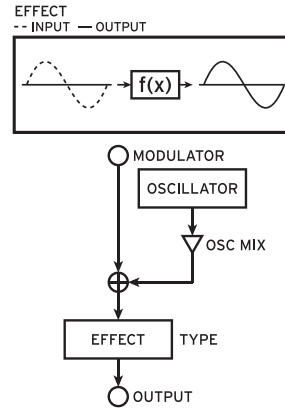
Wave Folder



• **Typical program:** 024: Dynamik, 334: Wavefolder

This is a waveshaping effect. The wave folder circuit generates harmonics by inverting the waveform of the input signals from the oscillator and the modulator at a fixed threshold. The "OSCMIX" parameter controls the amount of the oscillator signal fed into the wavefolder.

Effect

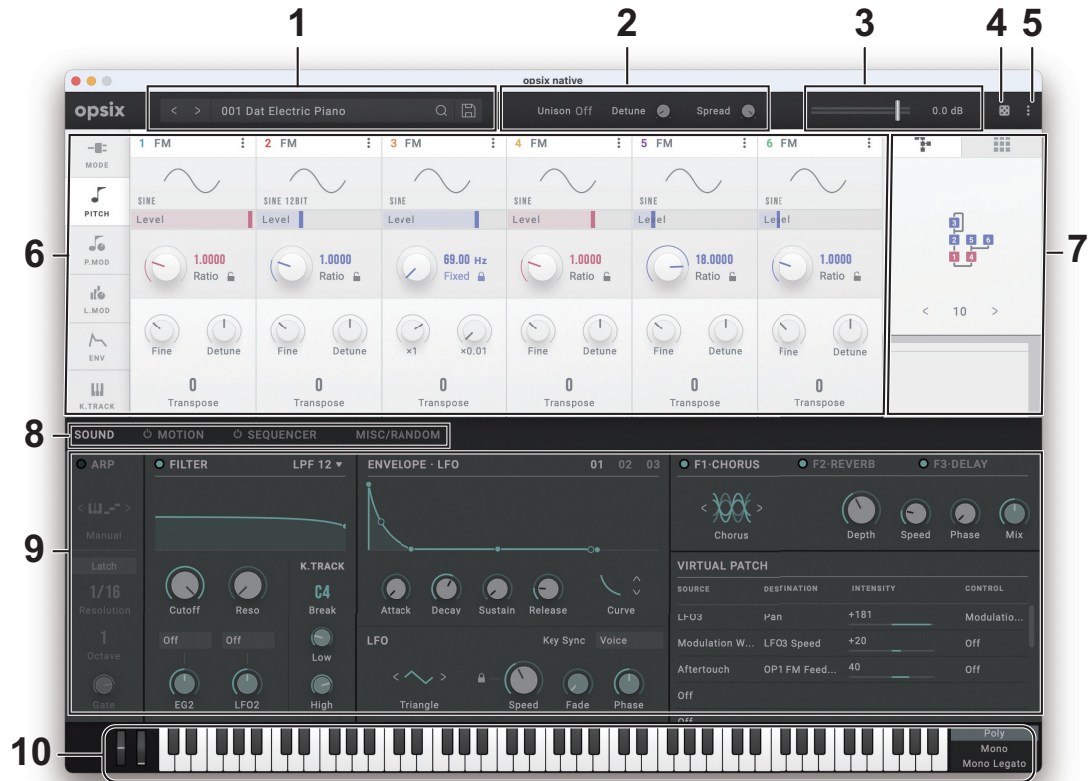


In this mode, the operator functions as an effect like delay, comb filter or distortion. The signal from the oscillator and the input signal from the modulator are inputted into the effect. The OSCMIX parameter controls the input level of the oscillator. Other effect parameters differ depending on the type of effect you select.

• Typical program:

Peaking EQ	020: Ana Eleki Piano, 240: Dirty Trautonium
Shelving EQ	311: KONG's Footstep
Phaser	087: Snow Ball, 340: Phaser Noise
Short Delay	314: Delay Modulator, 337: Delay Mod
Comb Filter	022: Comb Piano, 338: Comb Flanger
Distortion	238: Thick Screamer, 266: Purple Dist EG
Drive	237: Cinematic FB Doom
Decimator	313: Cockpit Emergency
Waveshaper	007: Waveshape EP, 336: Waveshape
Punch	009: Punchy Wire Piano, 086: FM Airy Bell

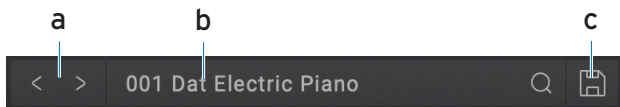
Part Names and functions



Header

1. Display

Shows the names of the programs that are currently loaded.



a. Select button

Use the Select buttons to switch to the programs that are previous or next in the list.

b. Sound Name

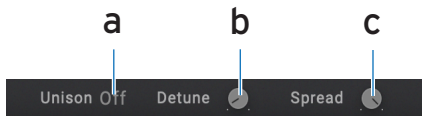
Shows the name of the currently selected sound. Tap the display to show the program browser. You can also specify a category to quickly select programs. (p.12 "Browser functions")

c. Save

Overwrites the currently selected program.

2. Unison

This configures the settings for making multiple voices sound.



a. Unison

Off: Unison is off, and Stereo Spread and Detune do not apply.

2...8: Specifies the number of voices that will sound for each note you play. When this is off, voices will not sound in unison, and "Spread" and "Detune" cannot be applied. You can make up to eight voices play in unison.

b. Detune (Unison Detune)

This controls the chorus feeling for the unison voice (UNISON VOICES). The pitch width between voices is adjustable in one-cent steps (1/100 of a semitone).

c. Spread (Unison Spread)

The spread (UNISON SPREAD) controls how widely the sounds are spread over the stereo field in Unison mode.

3. Volume

Used to adjust the overall volume.

4. Randomize button

This button randomizes all of the parameters in the current program. The strength is the same as that set in the MISC/RANDOM section. (p.48 "RANDOM")

5. MENU

Use this to initialize a program, recall or save the controller settings and perform other operations. (p.16 "MENU")

6. OPERATOR Edit

Use this to edit the parameters of the six operators. The parameters are separated into six groups, and you can select the groups from the tabs on the left edge of the screen.

7. Algorithm select

Along with the 40 preset algorithms, this plugin features user algorithms that let you configure your own modulation routings for the operators. Use the tabs at the top to switch between the two modes.

8. Parameter Group SELECT buttons

Switches between the parameter groups in the edit area (8).

SOUND: SWITCHES TO THE SCREEN WHERE YOU CAN CONFIGURE THE ARPEGGIATOR, FILTER, EGS, LFOS, EFFECTS AND V.PATCH.

MOTION: The opsix has a “motion sequence” feature that lets you automatically “play” the parameters. THIS SWITCHES TO THE SCREEN WHERE YOU CAN CONFIGURE THE SETTINGS. USE THE POWER BUTTON ON THE LEFT SIDE OF THE SCREEN TO TURN AUTO-PLAY ON/OFF.

SEQUENCER: The opsix can automatically play back notes. THIS SWITCHES TO THE SCREEN WHERE YOU CAN CONFIGURE THE SETTINGS. USE THE POWER BUTTON ON THE LEFT SIDE OF THE SCREEN TO TURN AUTO-PLAY ON/OFF.

MISC/RANDOM: This switches to the screen where you can configure and randomize the other parameter settings.

9. Edit area

Here you can edit the parameters that are shown in each edit page. Drag or tap each controller to select it, and then edit its parameter.

10. Controllers

These are the on-screen controllers used when playing (keyboard, wheel, switch). When operating these controllers from an external MIDI device, it is convenient to set the MIDI control numbers in GLOBAL page.

Basic operations

Use the mouse to edit the values of various controllers and parameters.

Keyboard

- Click on the keyboard to play notes.



Pitch bend/Modulation Wheel

- Drag the wheel up and down to control it.

Knob



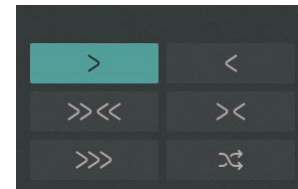
- Drag the knob to adjust its value.
- Double-clicking knobs allows you to edit the parameter value via computer keyboard.

Value slider



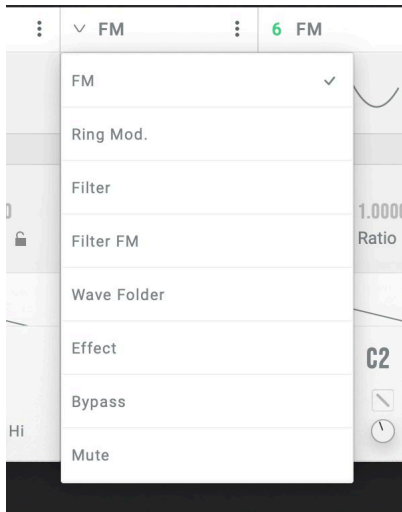
- Drag the value of the slider up and down to adjust a value.

Toggle Switch



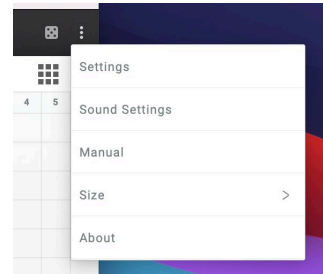
- Click to toggle the setting ON or OFF.

Combo box



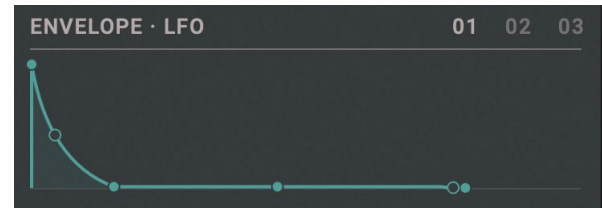
- Click on the combo box to select a value from the pop-up menu that appears.

Menu button



- Click to select a command from the pop-up menu that appears.

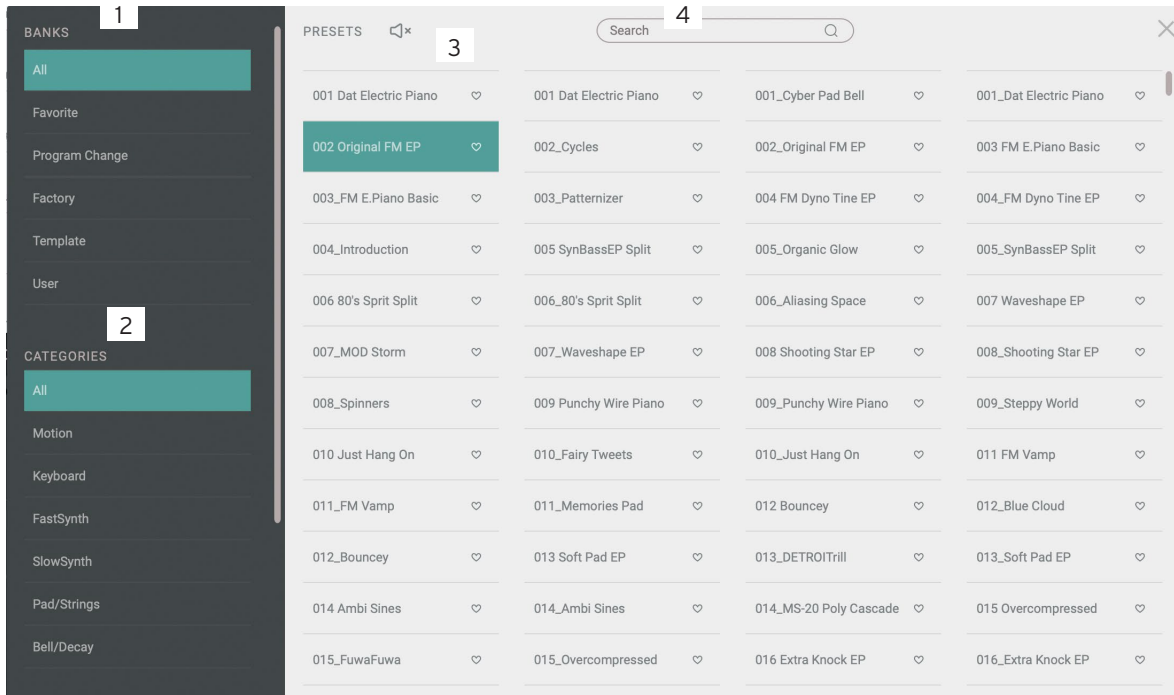
Graphical envelope



- Drag each point to adjust its value (level or time).

Browser functions

The opsix native features a browser search function that lets you quickly find and choose the sounds you want out of the wide range of options, filtering by category.



1. BANKS

All

Displays all program data.

Favorites

Displays only the programs that are added as favorites in the browser. Click the heart (♥) icon to the right of the program name to add or remove that program from the favorites.

Program Change

Displays the program you want to change with program change messages. To add a program, use the right-click context menu in the Programs tab.

Factory

Displays the factory-set (preset) programs. You can't overwrite the factory-set programs.

Template

Displays templates that are useful when creating programs. You can't overwrite the template programs.

User

Displays the programs that are saved. User programs are saved in the folders shown below.

[macOS]

~/Documents/KORG/opsix native/Presets/User

[Windows]

~/Documents/KORG/opsix native/Presets/User



2. Categories

Use the categories when you want to narrow down your selection of programs for the selected bank. Only programs that are registered in categories are shown in "PRESETS."

3. PRESETS

Selects the program you want to use. You can also register favorites or program changes, or edit the program information.

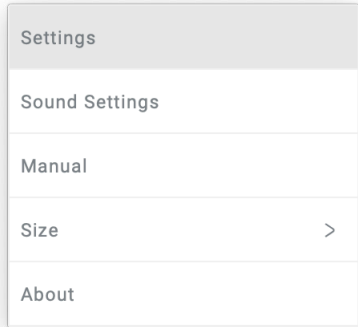
Right-click to add a preset program to a favorite or to a program change. You can also edit the information for user programs.

The preset programs feature audio previews. Select a program and then click the  button to preview the selected program. Click the  button again to stop the preview.

4. Search

You can search for programs by typing some text.

MENU



Settings

Displays the Settings pages, where you can set the master tuning and MIDI message receive settings. (p.51 "SETTINGS")

Sound Settings

Displays a dialog box for connecting MIDI controllers, configuring the audio output settings, etc.

Manual

Displays the manual for the software.

Size

Changes the screen size. Any changes to this setting will take effect the next time the softsynth is launched.

About

Shows the software version.

Quick Start

Playing the synthesizer

Use the on-screen keyboard or an external MIDI keyboard to play sounds with the opsix native.



1. Click the program name in the display to open the browser screen.
2. Select the desired program from the list.
3. Use the on-screen keyboard or an external MIDI keyboard to play sounds with the opsix native.

Using the arpeggiator



Use the arpeggiator to play the opsix native software synthesizer's sounds. This arpeggiator features seven patterns (Manual, Up, Down, Alt1, Alt2, Random and Trigger).

1. Use the Parameter Group Select buttons to press SOUND, which displays the SOUND parameters.
2. Press the ARP button. The button will light up.
This turns the arpeggio function on. Now, when you play a note on the keyboard, you'll hear an arpeggio.
3. Use TEMPO to set the desired tempo.
4. Use PATTERN to switch between arpeggio patterns. Play the chords you like, and see what kind of note patterns are played.
5. To stop the arpeggiator, press the ARP button. The button will go dark.

Using the Step Sequencer

1. Use the Parameter Group Select buttons to press SEQUENCER, which displays the SEQUENCER parameters.
2. Press the  (on/off) button to the left of SEQUENCER to switch to the on position.
3. The sequence plays back transposed to the same key that you played when you play the keyboard or an external MIDI keyboard.
4. To stop the step sequencer, press the  button (on/off) to the left of SEQUENCER to switch to the off position.

Using the Motion Sequencer

1. Use the Parameter Group Select buttons to press MOTION, which displays the Motion parameters.
2. Press the  button (on/off) to the left of MOTION to switch to the on position, which starts the step sequencer.
3. The sequencer starts when you play the keyboard or on an external MIDI keyboard, and the parameters change according to the step.
4. To stop the sequencer, press the  button (on/off) to the left of MOTION to switch to the off position.

Edit the Tone of the Synthesizer

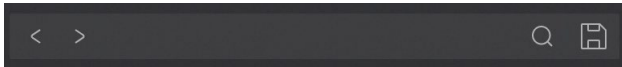
Now, let's try editing sounds on the opsix native.

1. **Select sound 110, "MS-20 Poly Cascade" from the "All" bank on the browser**
2. **Use the Parameter Group Select buttons to press SOUND, which displays the Sound parameters.**
The synth edit screen will be displayed. The main parameters necessary for editing are found on the SOUND page.
3. **Use the on-screen knobs and buttons to edit sounds.**
Try operating the CUTOFF knob in the FILTER section. By doing this, you'll hear how the sound changes in brightness.

Saving a sound

Save the sounds you create, so that you can recall them anytime.

1. **Press the Save button on the header.**

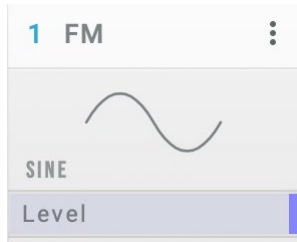


2. **Edit the name of your sound in the dialog shown.**
3. **Press the Save button.**

Parameter Guide

OPERATORS: MODE

MODE



Mode

Selects the Operator mode. (→p.5 “Operator modes”)

Wave

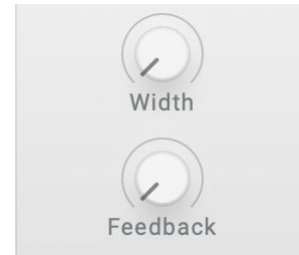
This selects the waveform of the oscillator. (→p.53 “Waveform List”)

Level (OP Level)

Sets the output level of the Operator.

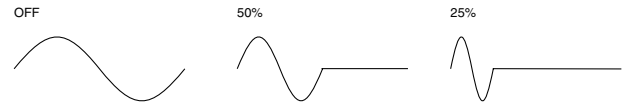
When “MODE” is set to FM (Frequency Modulation)

The pitch of an oscillator can be changed using the input signal from the modulator.



WIDTH (Wave Width)

This sets the width of the waveform that was configured using the “WAVE” parameter. You can control the value using V.Patch to get distinctive sounds like those used in dance music.

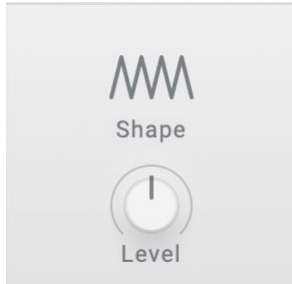


Feedback

Adjusts the amount of self-feedback from the Operator. When “WAVE” is set to “SIN”, the sound will become brighter the closer that the feedback value gets to 75%, sounding more like a sawtooth wave. When the feedback value exceeds 75%, the sound will become more like complex noise as the value gets larger.

When "MODE" is set to RING MOD. (Ring Modulation)

This uses AM (amplitude modulation) to multiply the input signal from the modulator with the oscillator.



Shape

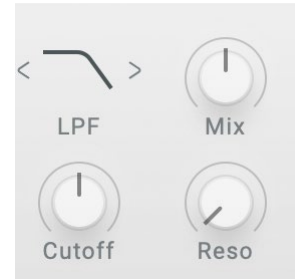
This is used to rectify the input signal from the modulator. A setting of 50% rectifies the waveform halfway, and a setting of 100% produces a fully rectified waveform. The higher the value, the brighter the tone will sound.

Level (Ring Depth)

Sets the balance between the ring modulator and oscillator signals. A setting of 100% outputs only the ring modulator signal, and a setting of 0% outputs only the oscillator signal.

When "MODE" is set to FILTER (Filter)

Filters the input signal to cut out a specified tonal range. You can also mix in the oscillator sound for output. The cutoff frequency works in conjunction with the oscillator pitch.



Filter Type

Sets the type of filter used in the Operator.

Mix (Filter OSC Mix Level)

Sets the oscillator level inputted into the filter.

Cutoff (Filter Cutoff)

Although the filter cutoff frequency works in conjunction with the oscillator pitch, you can use this parameter to add an offset. This is set in semitones.

Reso (Filter Resonance)

Emphasizes the frequencies around the cutoff frequency.

When “MODE” is set to FILTER FM (Filter FM)

In Filter FM, the oscillator signal is used as audio input for the filter. The cutoff frequency is modulated using the input signals from the modulator(s). Depending on the cutoff and filter type settings, this may not have any effect, as the sound outputted from the oscillator may not pass through the filter.

The variations in sound are easier to understand if you set the WAVE parameter to SAW and then change the filter type.



Filter Type

Sets the type of filter used in the Operator.

Cutoff (Filter Cutoff)

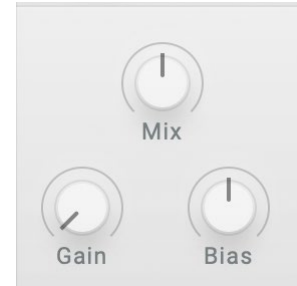
Although the filter cutoff frequency changes with the modulator's input signal, the center frequency changes along with the oscillator pitch, so you can use this parameter to add an offset. This is set in semitones.

Reso (Filter Resonance)

Emphasizes the frequencies around the cutoff frequency.

When “MODE” is set to WAVE FOLDE (Wave Folder)

This “folds” the waveform to create a powerful distortion effect.



Mix (Wave Folder OSC Mix Level)

Sets the oscillator level inputted into the Wave Folder.

Gain (Wave Folder Gain)

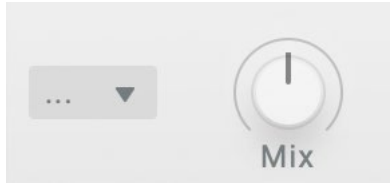
Adjusts the strength of the Wave Folder effect. Increasing this value will increase the number of times that the waveform is folded.

Bias (Wave Folder Bias)

Applies a DC offset to the input signal to change the harmonics.

When “MODE” is EFFECT

In this mode, the operator functions as an effect like delay, comb filter or distortion. The signal from the oscillator and the input signal from the modulator are inputted into the effect.



FX (Effect Type)

Sets the type of effect used in the operator.

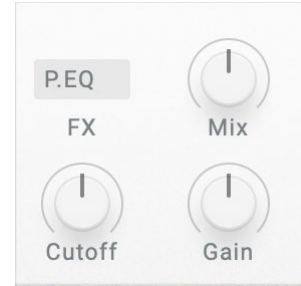
Mix (Effect OSC Mix Level)

Sets the oscillator level inputted into the effect.

The effect parameters for the E and F knobs differ depending on the effect type.

P. EQ (Peaking EQ)

Increases or decreases the level of frequencies within a specific range.



Cutoff (Peaking EQ Frequency)

Adjusts the center frequency that's increased or decreased. This effect works in conjunction with the oscillator pitch.

Gain (Peaking EQ Gain)

Increases or decreases the level of center frequencies.

S.EQ (Shelving EQ)

This is a shelving-type equalizer. This equalizer boosts or cuts the low- and high-end frequencies.

Low (Shelving EQ Low Gain)

Adjusts the low-end frequency level.

High (Shelving EQ High Gain)

Adjusts the high-end frequency level.

Phas (Phaser)

Alters the phase of the sound to create a swelling effect.

Speed (Phaser Frequency)

Adjusts the frequency at which the effect is applied. This effect works in conjunction with the oscillator pitch.

Tip: If you don't want the frequency to be linked with the pitch, set "FREQ" in "PITCH OP1..6" (→p. 25) to "FIXED". This sets the frequency at a fixed frequency, regardless of the note number.

Feedback (Phaser Feedback)

Adjusts the amount of feedback.

Dely (Short Delay)

This effect adds a time delay to the sound.

Time (Short Delay Feedback)

Sets the delay time.

Feedback (Short Delay Feedback)

Adjusts the amount of feedback.

Comb (Comb Filter)

This is a continuous bandpass and band cut filter, which adds a unique character to the sound.

Feedback (Comb Filter Feedback)

Adjusts the amount of feedback.

Cutoff (Comb Filter Frequency)

Adjusts the frequency at which the effect is applied. This effect works in conjunction with the oscillator pitch.

Tip: If you don't want the frequency to be linked with the pitch, set "FREQ" in "PITCH OP1..6" (→p. 25) to "FIXED". This sets the frequency at a fixed frequency, regardless of the note number.

Dist (Distortion)

A distortion effect that heavily distorts the sound.

Amount (Distortion Amount)

Adjusts the amount of distortion by adjusting the input level of the distortion circuit.

Gain (Distortion Low Gain)

Adjusts the low-frequency region.

Driv (Drive)

A drive effect that adds a heavier distorted feel. Effective for bass guitar and kick drum sounds.

Drive (Drive Amount)

Applies drive to the input signal, which works as a booster to create natural distortion.

Gain (Drive Low Gain)

Adjusts the low-frequency region.

Deci (Decimator)

Creates a cheap and rough sampled effect by lowering the sampling frequency and bit rate.

Cutoff (Decimator Frequency)

Adjusts the sampling frequency. Lower values give a more lo-fi sound. This effect works in conjunction with the oscillator pitch.

Tip: If you don't want the frequency to be linked with the pitch, set "FREQ" in "PITCH OP1..6" (→p. 25) to "FIXED". This sets the frequency at a fixed frequency, regardless of the note number.

Bit (Decimator Bit)

Adjusts the bit length. Lower values give a more lo-fi sound.

Shap (Waveshaper)

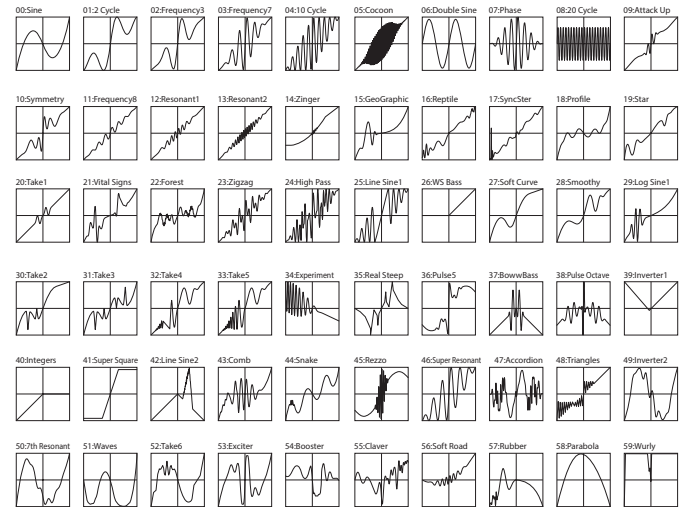
Recreates the waveshaping method of creating sounds that was used on Korg's "O1/W" music workstation, released in 1991.

This effect runs the input sound through a waveshaping table to alter the waveform.

Use the modulator level or OSC MIX to adjust the depth of the waveshaper effect.

Type

Selects the waveshaping table type.



Damp (Wave Shaper High Damp)

Adjusts the high-frequency region. The higher the setting, the more the high-frequency components are cut off.

Punc (Punch)

This sets an effect that emphasizes the attack volume of the input signal.

Punch (Punch Amount)

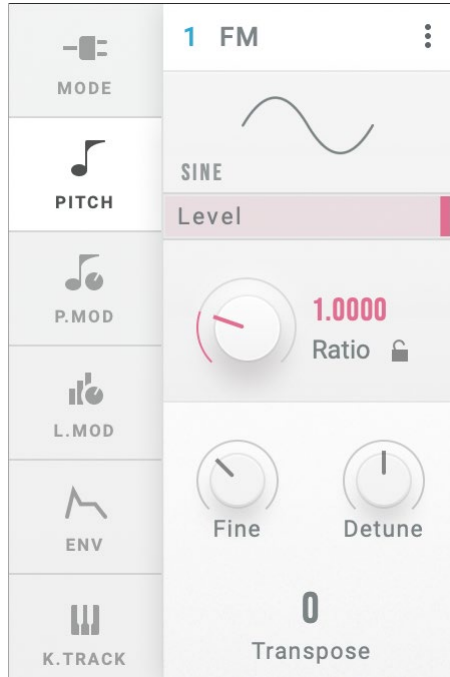
Adjusts the amount of emphasis.

Gain (Punch High Gain)

Adjusts the high-frequency region.

OPERATORS: PITCH

PITCH (Operator Pitch)



FREQ (Frequency Mode)

Use this to select how the oscillator pitch will be set.

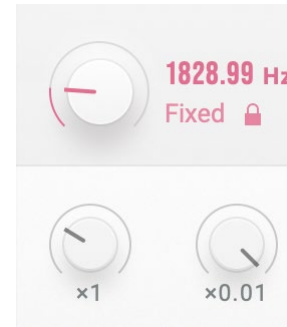
Fixed: With this setting, the oscillator pitch will stay at the same frequency regardless of the note number.

Ratio: With this setting, the frequency of the note number will be multiplied with the ratios set in Coarse Ratio and Fine (Fine Ratio) to set the oscillator pitch.

Transpose

Shifts the oscillator pitch in semitones over a range of ± 1 octave. This setting is enabled only when FREQ (Frequency Mode) is set to "RATIO".

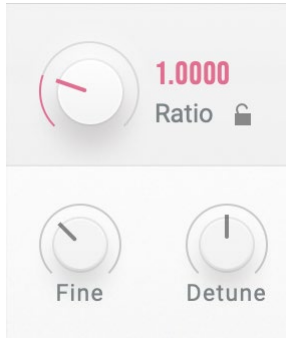
When "FREQ" is FIXED



x100, x1, x0.01

This sets the oscillator frequency over a range of 0.01 to 9999.99 Hz.

When "FREQ" is RATIO



Coarse Ratio

This is used for coarse adjustments of the oscillator pitch. When this setting is "1", the frequency is the same as the note number. When this setting is less than "1", the pitch will shift down in units of octaves. When this setting is more than "1", the pitch will shift up in integer units according to the frequency of the note number.

Fine (Fine Ratio)

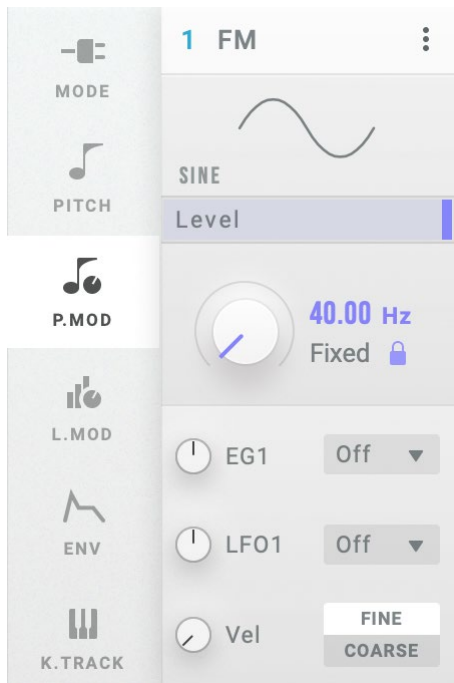
Fine-tunes the oscillator pitch. The oscillator frequency is equal to the Coarse Ratio, Fine (Fine Ratio) and note number frequency values, all multiplied together.

Detune

Detunes the pitch of the oscillator in one-cent steps.

OPERATORS: P.MOD

P.MOD (Operator Pitch Modulation)



EG1 (Pitch EG1 Intensity)

Sets the effect of the EG1 applied to the pitch, in semitone steps.

CTRL (Pitch EG1 Ctrl Src)

Selects the modulation source that controls the EG1 Int. The value selected here is multiplied with EG1 (EG1 Int) to determine the amount of pitch modulation. (→p.54 “Control Source List”)

LFO1 (Pitch LFO1 Intensity)

Sets how much the LFO1 will affect the pitch, in semitone steps.

CTRL (Pitch LFO1 Ctrl Src)

Selects the modulation source that controls the LFO1 Int. The value selected here is multiplied with LFO1 (LFO1 Int) to determine the amount of pitch modulation. (→p.54 “Control Source List”)

Vel (Pitch Velocity Sens)

Sets how much the velocity will affect the pitch.

DEST (Pitch Velocity Mod. Dest.)

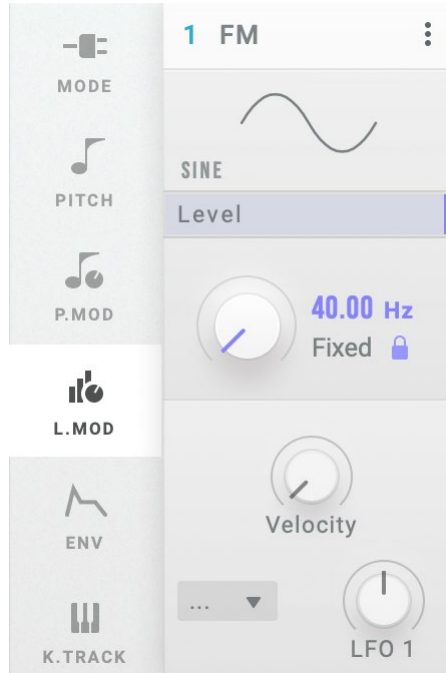
Sets which parameter will be affected by the effect of the velocity on the pitch. This is enabled only when FREQ (Frequency Mode) is set to “RATIO”.

FINE: The effect will be applied to FINE (Fine Ratio). The pitch will be changed continuously by changes in velocity.

COARSE: The effect will be applied to COARSE (Coarse Ratio). Changes to the pitch will be made in stages, with the ratio between the note number and pitch remaining as integers. Using this on Operators that are modulators lets you change the harmonics without muddying the sound.

OPERATORS: L.MOD

L.MOD (Operator Level Modulation)



Velocity (Level Velocity Sens)

This sets how the effect applied to the Operator's output level will change with the velocity.

CTRL (Level LFO1 Ctrl Src)

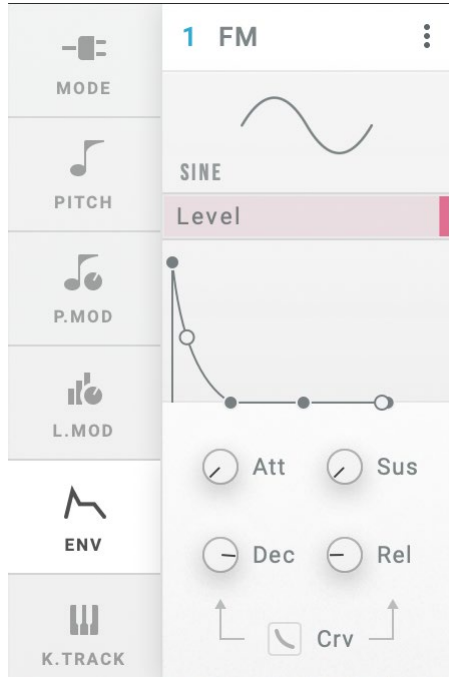
Selects the modulation source that controls the LFO1 Int. The value selected here is multiplied with LFO1 (Level LFO1 Intensity) to determine the amount of output level modulation. (→p.54 "Control Source List")

LFO1 (Level LFO1 Intensity)

This sets how the effect applied to the Operator's output level will change with the LFO1.

OPERATORS: ENV

EG (Operator Level/EG)



Att (Attack Time)

Specifies the time from note-on until the maximum level is reached.

Sus (Sustain Level)

This sets the level at the end of the Decay time.

When the sustain level is reached, this level is maintained until note off.

Dec (Decay Time)

This sets how long it takes to settle from the peak to the Sustain level.

Rel (Release Time)

This sets how long it takes the envelope to fall to 0 after releasing a note.

Crv (EG Curve)

This sets the decay and release curves.



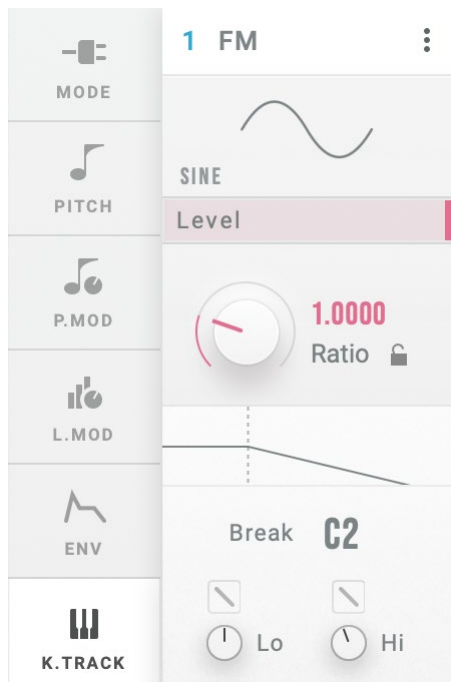
Curve=0 (LIN)



Curve=10 (EXP)

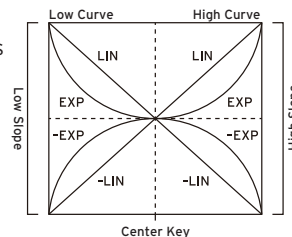
OPERATORS: K.TRACK

K.TRACK (Operator Level Key Track)



CENTER (Keytrack Center Key)

This sets the note on the keyboard that is used as a reference for keyboard tracking. The depth of the effect will change according to how far the note you play is from the CENTER (Center Key).



Low Curve (Keytrack Low Curve)

This sets how the effect will change as you play lower notes in relation to the CENTER (Center Key). Setting this to "LIN" will make the effect progressively stronger at a fixed ratio. Setting this to "EXP" will make the effect gradually deeper around the CENTER (Center Key), but the effect will become exponentially stronger for notes played further away from the CENTER (Center Key).

Lo (Keytrack Low Slope)

Sets the depth of keyboard tracking for notes that are lower than the CENTER (Center Key). When this is set to a positive value, the lower the note is from the CENTER, the greater the Operator's output level will be. When this is set to a negative value, lower notes will produce correspondingly lower output levels.

High Curve (Keytrack High Curve)

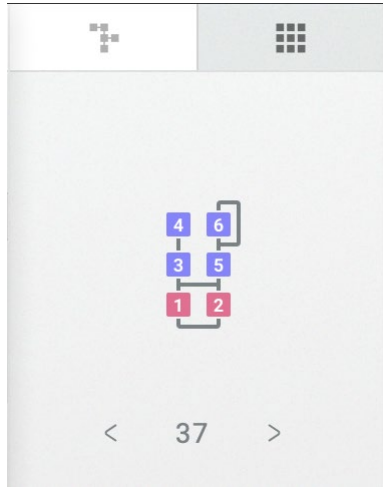
This sets how the effect will change as you play higher notes in relation to the CENTER (Center Key). Setting this to "LIN" will make the effect progressively stronger at a fixed ratio. Setting this to "EXP" will make the effect gradually deeper around the CENTER (Center Key), but the effect will become exponentially stronger for notes played further away from the CENTER (Center Key).

Hi (Keytrack High Slope)

Sets the depth of keyboard tracking for notes that are higher than the

CENTER (Center Key). When this is set to a positive value, the higher the note is from the CENTER, the greater the Operator's output level will be. When this is set to a negative value, the higher notes will produce correspondingly lower output levels.

Algorithm



ALGO (Algorithm)

Selects the algorithm. (→p.52 "Algorithm List")

USER ALG (User Algorithm)

	1	2	3	4	5	6
1						
2						
3						
4						
5			100			
6		55	100			
OUT	↓	↓	↓	↓	↓	↓

Select this page to edit the user algorithms. To finish editing, go to a different page.

FM MATRIX

This configures how the operators are connected and how strongly they connect. The rows show how the operators are lined up, and the columns show whether they send their signals to other operators.

For example, operator 1 is shown in the leftmost column.

The six spaces shown from top to bottom show the signal feed level going from operator 1 to operators 1-6.

The lowest row shows whether the operator itself will output to the filter of the next row. The downward arrow (↓) indicates that the operator is outputting.

Editing the user algorithms

Set how much signal is sent to the operators by adjusting the numbers in the matrix.

This has the same effect as the FB (Feedback) parameter when the operator mode is "FM", but can also be used in other modes besides FM.

In row 1, column 2, set the modulation signal level that's sent from OP2 to OP1.

x	1	2	3	4	5	6
1		100				
2						
3						
4						
5						
6						
OUT	↓	↓	↓	↓	↓	↓

Setting this to 100% will set the same level as when the preset algorithm is connected.

The OUT in the final row determines whether the operator's output signal is output as audio or not.

x	1	2	3	4	5	6
1		100				
2						
3						
4						
5						
6						
OUT	↓	↓	↓	↓	↓	↓

In this example, OP2 modulates OP1 100%, and the OP1 signal is output as audio.



ARP (Arpeggiator)

ARPEGGIATOR



Arpeggiator Run

Switches the arpeggiator between on, off and latch.

Off: The arpeggiator will not operate.

On: The arpeggiator will only operate when a note is played.

Latch: The arpeggiator will begin operating when a note is played, and will keep going even after the note is released.

Pattern (Arpeggiator Pattern)

This parameter specifies the note pattern of the arpeggiator.

MANUAL: The arpeggio is played in the order that note-on signals held down together are played.

UP: The arpeggio is played from the lower tone (note) to the higher note.



DOWN: The arpeggio is played from the higher tone (note) to the lower note.



ALT1: The arpeggio repeatedly plays up and down. (The highest and lowest notes will be played once.)



ALT2: The arpeggio repeatedly plays up and down. (The highest and lowest notes will be played twice.)



RANDOM: The notes are played randomly.



TRIGGER: The notes you hold down will be played simultaneously at the tempo and “RESO” timing.



Resolution

This controls the speed of the Arpeggiator.

Octave

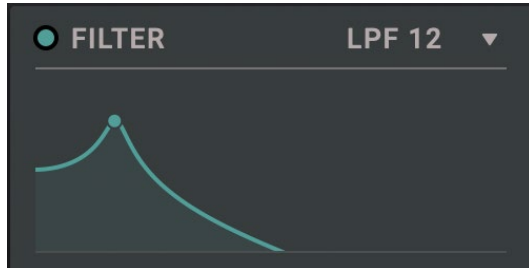
This controls the range of the arpeggiated notes.

Gate (Gate Time)

This sets the length of the arpeggiated notes, as a percentage of the Resolution.

FILTER

FILTER



ENABLE

Switches the filter effect on/off.

TYPE (Filter Type)

This is used to select the filter type. The resulting sound will be different depending on the selected filter type. For LPF, HPF, BPF and BRF, the digits at the end of the filter name (6, 12, 24) indicates the filter characteristics (dB/oct). The larger the value, the more abruptly that the filter will cut off the sound at the cutoff frequency.

LPF 12, LPF 24: This cuts out the parts of the sound which are higher than the cutoff frequency. Low Pass is the most common type of filter, and is used to make bright timbres sound darker.

LPF MS-20, HPF MS-20: Both of these are 12dB/oct filters that can self-oscillate and replicate the distinctive tonal character of the Korg MS-20. If the input level is high, raising Resonance will cause increasing amounts of saturation and overdrive, creating a more aggressive

tone.

LPF Poly6: This is a 24dB/oct filter that can self-oscillate, which replicates the powerful yet sweet tonal character of the Korg Polysix.

HPF 12, HPF 24: This cuts out the parts of the sound which are lower than the cutoff frequency. These filters are effective when the low end is too strong, or when you want a thinner sound.

BPF 6, BPF 12: This cuts out all parts of the sound, both highs and lows, except for the region around the cutoff frequency. Because of this, the sound can change dramatically depending on the cutoff setting and the Operator's sound settings. With low resonance settings, you can use the Band Pass filter to create telephone or vintage phonograph sounds. With higher resonance settings, it can create buzzy or nasal timbres.

BRF 6, BRF 12: These are also called "notch filters" because of the dip in the midrange levels. Only the parts of the sound at and directly around the cutoff frequency are cut off. Try modulating the cutoff with an LFO to create phaser-like effects.



Cutoff

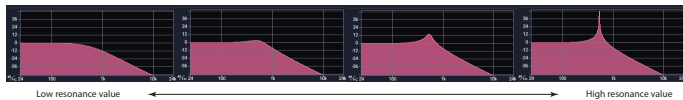
Sets the cutoff frequency of the filter in Hz. As explained above, the cutoff frequency effect will differ depending on the type you select. The range of most filter types is from 6.489 Hz to 23.68 kHz, but the range of the MS-20 LPF/HPF and LPF Poly6 is from 12.98 Hz to +21.10 kHz.

Reso (Resonance)

Resonance emphasizes the frequencies around the cutoff frequency, as shown in the diagram below.

This will have no effect with a setting of 0.

At medium settings, the resonance will alter the timbre of the filter, making it sound more nasal, or more extreme.



Note: For some filter types, oscillation may occur within the filter when RESO (Resonance) is set to a high value. This may cause

the oscillation to continue even after note-off. To avoid this kind of oscillation, use V.Patch to control the resonance value using an EG, or use a filter on the Operator Mode side.

EG2 (EG2 Intensity)

This sets the amount that the EG2 modulates the cutoff parameter.

CTRL (EG2 Ctrl Source)

Selects the modulation source that controls the EG2 Int. The source selected here is multiplied with EG2 Int to determine the amount of cutoff modulation. (→p.54 "Control Source List")

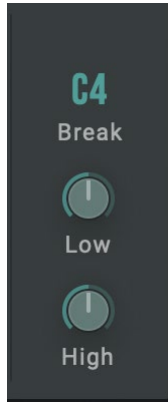
LFO2 (LFO2 Intensity)

This sets the amount that the LFO2 modulates the cutoff parameter.

CTRL (LFO2 Ctrl Source)

Selects the modulation source that controls the LFO2 Int. The source selected here is multiplied with LFO2 Int to determine the amount of cutoff modulation. (→p.54 "Control Source List")

K. Track (Filter Keyboard Tracking)



High (KeyTrk High Slope)

Sets the depth of key tracking for notes that are higher than the Center Key. When this is set to a positive value, the cutoff frequency correspondingly increases for higher notes. When this is set to a negative value, the cutoff frequency correspondingly decreases for higher notes. A setting of "+1.00" will make the cutoff frequency change with the same slope as the key pressed on the keyboard.

Center Key (KeyTrk Center Key)

This sets the note used as a reference for keyboard tracking. The cutoff frequency will change according to the distance between the inputted note and the reference note. When you play the same note as the reference note, the cutoff frequency will be the same as the setting on the Filter page.

Low (KeyTrk Low Slope)

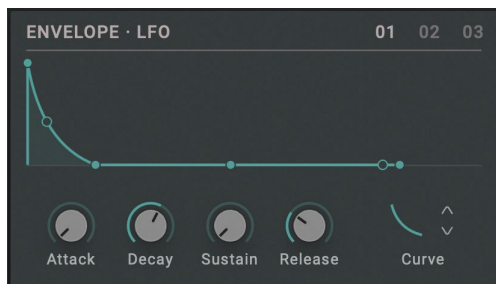
Sets the depth of key tracking for notes that are lower than the Center Key. When this is set to a positive value, the cutoff frequency correspondingly increases for lower notes. When this is set to a negative value, the cutoff frequency correspondingly decreases for lower notes. A setting of "-1.00" will make the cutoff frequency change with the same slope as the key pressed on the keyboard.

ENVELOPE, LFO

EG1 PITCH, EG2 Filter, EG3 (Assignable)

The opsix features three EGs in addition to the EGs that control the levels of each Operator.

By default, EG1 is connected to the Operator pitch and EG2 is connected to the filter. EG3 is not connected to anything, but can be connected with V.Patch.



Attack (Attack Time)

Decay (Decay Time)

Sustain (Sustain Level)

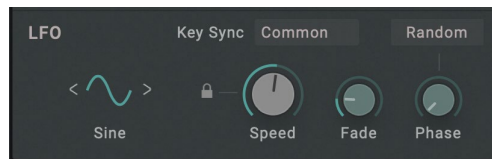
Release (Release Time)

Curve

(→p.29 “EG (Operator Level/EG)”)

LFO

The opsix native features three LFOs. By default, LFO1 is connected to the Operator pitch and level, and LFO2 is connected to the filter. LFO3 is not connected to anything, but can be connected with V.Patch (→p.43 “Virtual Patch 1..12”).



Wave

This selects the LFO waveform.

• LFO Wave List

TRI (Triangle)	X.TRI (Exp. Triangle)	S.RND TIME (StepRnd: Time)
SAW DOWN (Saw Down)	X.SAW DOWN (Exp. Saw Down)	S.RND LVTIME (StepRnd: Lvl&Time)
SAW UP (Saw Up)	X.SAW UP (Exp. Saw Up)	RND LEVEL (Random: Level)
SQR (Square)	TRI4 (Step4 Triangle)	RND TIME (Random:Time)
SIN (Sine)	TRI6 (Step6 Triangle)	RND LVTIME (Random:Lvl&Time)
S/H (Sample&Hold)	SAW4 DOWN (Step4 Saw Down)	TRI+ (Triangle +)
GTR (Guitar)	SAW6 DOWN (Step6 Saw Down)	SAW DOWN+ (Saw Down +)
		SAW UP+ (Saw Up +)
		SQR+ (Square +)

Take a look at the comments below on some of the waveforms.

GTR (Guitar): This is for guitar vibrato. The value is positive only, and when it is set using pitch, only a pitch bend up effect will result.

S/H (Sample&Hold): This is a typical sample/hold waveform, on which the level changes at random in fixed intervals.

S.RND LVTIME (StepRnd: Lvl&Time): Randomly changes the level and timing.

S.RND TIME (StepRnd: Time): Generates a pulse wave at a random timing.

RND LEVEL (Random: Level), RND TIME (Random: Time), RND LVTIME (Random: Lvl&Time): Different from step-based changes, these are smoothed versions of S/H, S.RND TIME and S.RND LVTIME that create non-linear changes. Use these for gradual random changes.

Triangle + ... Square +: This outputs only positive values, as opposed to the waveforms from Triangle to Square that output values from +1 to +1. This is useful when you want a cyclical pitch-up or pitch-down effect.

Tempo Sync

On: The note length will be set using SPEED. The LFO frequency will synchronize to the system tempo, as it is controlled by this speed.

Off: The LFO speed is controlled by the SPEED parameter, in Hz.

Speed (Speed (Frequency))

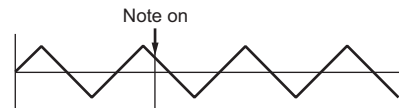
When Tempo Sync is on, this sets the base LFO speed as a note length.

When Tempo Sync is off, this sets the LFO speed in Hz.

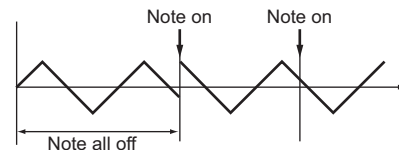
Key Sync

Specifies how the LFO will be applied to a voice when note-on occurs.

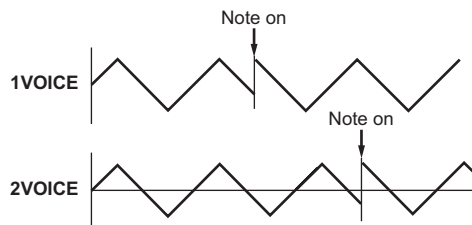
Off: The LFO phase will not be reset when note-on occurs. It will only be reset when selecting a program or starting step sequencer playback.



Common: The phase of the LFO will be reset by the first note-on that occurs from a condition of no keys being held; it will not be reset for subsequently played voices.



VOICE: The LFO phase will be reset with each note-on, and modulation will be applied in differing phases to each voice.



Fade

The LFO can fade in gradually, instead of starting immediately at full strength. This sets the time from note-on until the LFO reaches maximum amplitude.

Note: This will have no effect when “KSYNC” is off.

Phase

This sets the phase when the LFO is reset. When the Random button is on, the LFO will start with a different phase for each note-on message, regardless of the phase setting.

EFFECT

FX 1, 2, 3 (Effect 1, 2, 3)

The opsix features three multi-effectors. These three effectors are connected in a series.



ENABLE

Switches the effect on/off. You can listen and compare how the effects sound by switching them on and off.

Effect Type

Selects the effect type.

Effect Parameter 1...4

This configures the parameters of each effect.

For more on the parameters, see →p.60 "Effect Parameter List".

VIRTUAL PATCH

Virtual Patch 1..12



SOURCE	DESTINATION	INTENSITY	CONTROL
LFO3	Pan	+181	Modulatio...
Modulation W...	LFO3 Speed	+20	Off
Aftertouch	OP1 FM Feed...	40	Off
Off			
Off			

SOURCE (Source Scope), SRC (Source)

Selects the modulation source signal.(→p.57 “Virtual Patch Source List”)

DESTINATION (Dest Scope, Destination)

This sets the parameters and groups to be changed by modulation.
(→p.58 “Virtual Patch Destination List”)

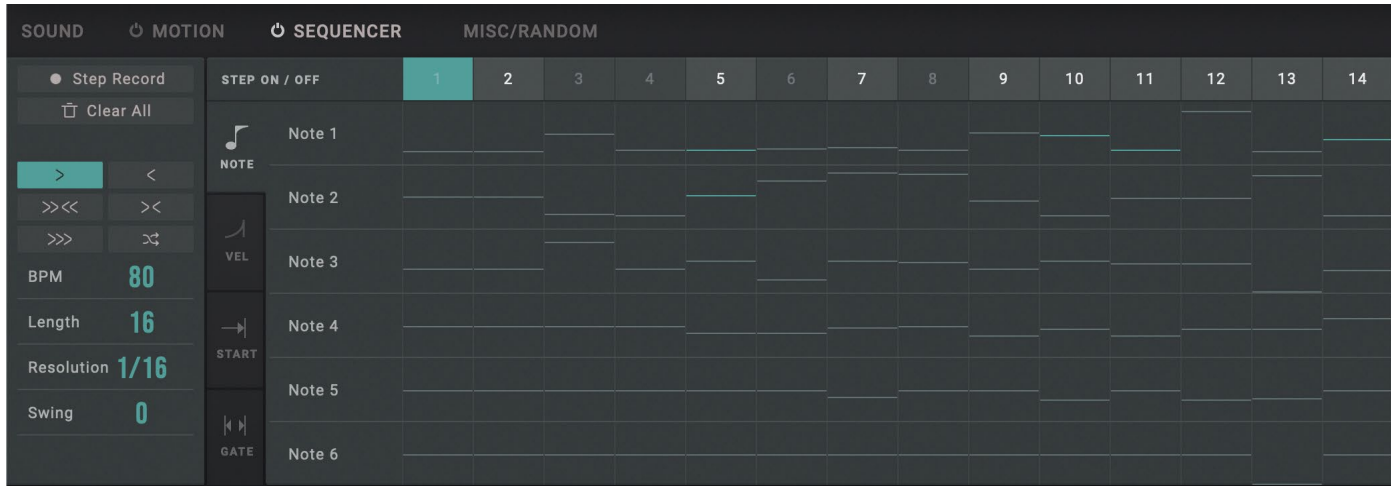
INTENSITY (Mod Int)

Specifies the depth of the effect produced by the modulation source.

CONTROL (Mod Ctrl Src)

Selects the modulation source that controls Mod Int. The source value selected here is multiplied with Mod Int to determine the depth of the modulation effect. (→p.54 “Control Source List”)

SEQUENCER



SEQUENCER

Step Mode

Specifies how steps advance during playback.

- >> (**Forward**): Makes the sequencer play back forward.
- << (**Backward**): Makes the sequencer play back in reverse.
- >><< (**Bounce**): Makes the sequencer play back forward, and then in reverse.
- >< (**Center**): Playback will occur in the following order: 1, 16, 2, 15, 3, 14...
- >>> (**Even/Odd**): The sequencer plays back only odd-numbered or even-numbered steps.

↻ (**Random**): Makes the sequencer play back randomly.

BPM (Tempo)

Specifies the tempo for the selected program. This setting is applied not only to the sequencer but also to the arpeggiator, LFO and effects that synchronize with the tempo.

If you are synchronizing the tempo with your DAW, the word "SYNC" appears. You can set whether to turn off synchronization from the [SETTINGS](#) page.

Length

Sets the number of steps used in the sequence.

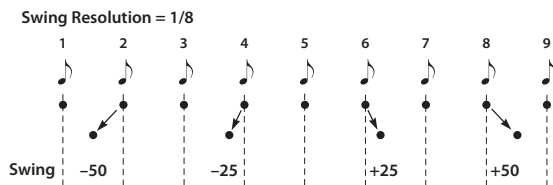
Resolution (Step Resolution)

Sets the length of a step in relation to the tempo.

Swing

Adjusts the intensity of the swing.

Tip: Setting this to “+33%” gives you nearly a full shuffle timing.



Key Sync (Motion Key Sync)

This parameter affects how the motion sequencer behaves in relation to the note sequencer.

TRIG (TRIGGER): the motion sequencer will reset to the beginning of the sequence and begin playback whenever a new note is played.

LEGA (LEGATO): the motion sequencer will reset to the beginning of the sequence and begin playback the first time the note sequencer is triggered, after which it will continue independently until no notes are being played.

FREE: the motion sequencer will run independent of the note sequencer, modulating the destination values for as long as opsix native is running.

Note Sequencer

LANE

Up to six notes can be used in one step on the opsix native. Select the lane where the note will go, from 1 to 6.

ACTIVE

Sets whether this step is triggered or not.

NOTE (Lane Note)

This sets the note number for the selected step and lane.

VEL (Velocity)

Sets the velocity of the selected step and lane.

START (Start Offset)

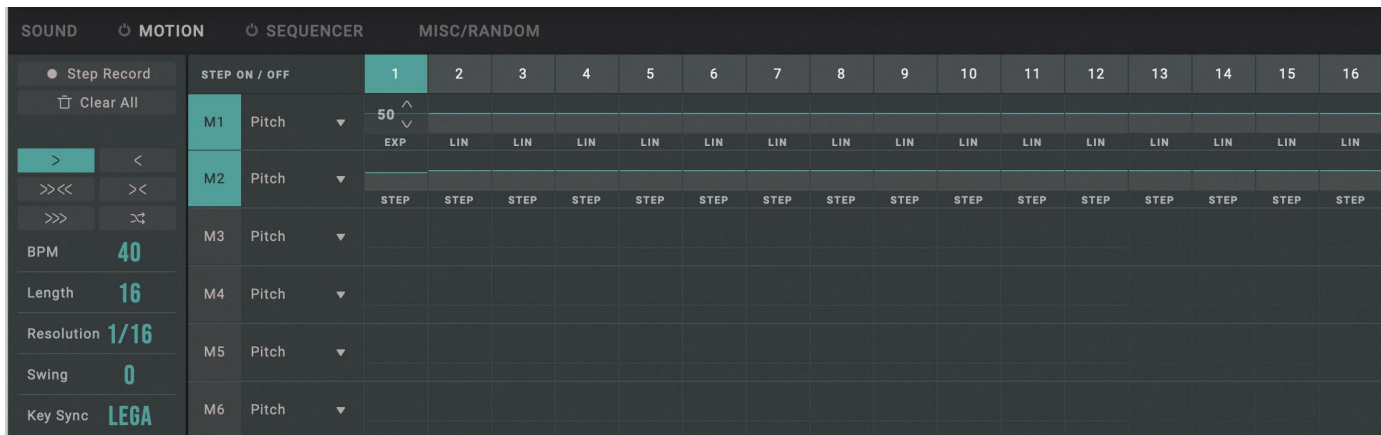
Sets the timing used to trigger a step, as a percentage of the step length.

Increasing the Resolution (Step Resolution) lets you easily create the timings often used in hip-hop and neo-soul music, as well as sounds like strumming and flams.

GATE (Gate Time)

Sets the note length of the selected step and lane. When you want to make a note sound for longer than the step length, use a tie to connect the note to the next step.

MOTION



Motion Sequencer

LANE

The opsix uses six lanes that automatically “play” the parameters (motion sequences). Select a motion sequence lane from 1 to 6.

DEST (Dest Scope, Destination)

This sets the parameters and groups to be changed by the motion sequence. Refer to “Motion Destination List” (→ p.79) for details.

VALUE

This specifies the value of the selected lane and step.

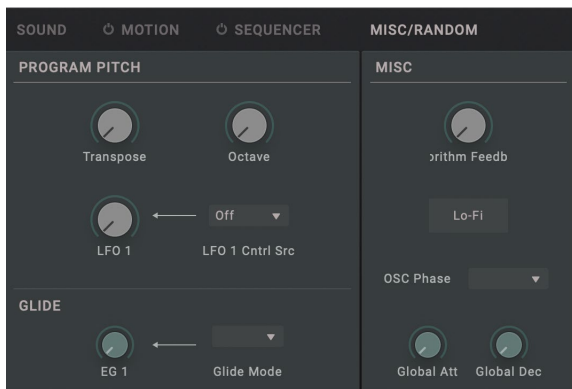
CURVE

Select the curve that connects the values from the selected steps of the currently selected lane to the next step.

You can select “STEP” (no curve), “EXP (Exponential)”, “LIN (Linear)” or “LOG (Logarithmic)”.

To make smooth changes to the parameters, select either “EXP (Exponential)”, “LIN (Linear)” or “LOG (Logarithmic)”. On the other hand, for parameters like “WAVE” and “PTRN”, select “STEP” so that the parameter changes at the beginning of the step in question to produce the desired effect.

MISC/RANDOM



PROGRAM PITCH

Transpose

Adjusts the overall pitch in semitone steps over a range of +1 octave for the entire program.

Octave

This sets the basic pitch, in octaves. The default is 0.

LFO1 (LFO1 Int)

This controls the initial effect of the LFO1 on the pitch, in semitones.

CTRL (LFO1 Ctrl Src)

Selects the modulation source that controls the LFO1 Int. The source value selected here is multiplied with LFO1 Int to determine the depth of

the modulation effect. (→p.54 “Control Source List”)

GLIDE

Glide Time

Sets the amount of time it takes to move from one pitch to the next.

Glide Mode

Glide mode makes the pitch change smoothly between different notes.

Off: The glide effect will be disabled, and notes will always play at their correct pitch.

On: The pitch will change smoothly between notes.

Legato: The pitch will change smoothly between notes only when playing legato.

MISC

Algorithm Feedback

Aside from the user algorithms, feedback algorithms are connected like a feedback loop that sends signals upwards through the algorithm. (ALGO X, X, .. X) This parameter sets the signal level that flows through the feedback loop. The feedback loop is picked up following the LEVEL (Program Level) of the Operator, which lets you use the changes in LEVEL (Program Level) to affect the feedback as well, creating complex effects.

Lo-Fi

When this is turned on, the oscillator waveform and level control signals are tuned more roughly, creating a slightly noisy sound that is like an older digital synth.

OSC Phase

This sets this oscillator's phase for each note-on as follows.

Sync: Sets the oscillator phase to "0".

Free: Sets the value for all oscillators to the same random value.

Random: Sets and changes the value for each oscillator's phase randomly.

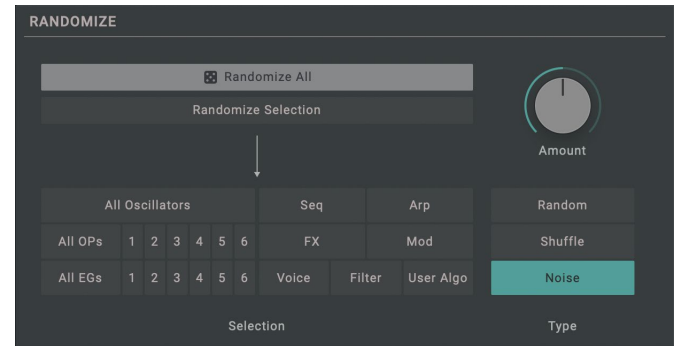
Global Atk (Global Attack)

Sets the attack time (how quickly the note starts) for all Operators.

Global Dec (Global Decay)

Sets the decay/release time (how quickly the note fades out) for all Operators.

RANDOM



Randomize All

Randomizes all the parameters.

Randomize Selection

Randomizes all the parameters selected using "Selection".

Amount

Use "Amount" to adjust the randomization strength.

Selection

Select the scope of parameters to randomize.

Type

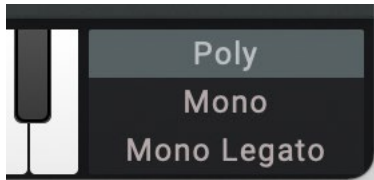
Set how the randomization will be done with the "Type" parameter.

Random: Changes the selected range of parameters by randomly creating values for each.

Shuffle: Randomly shuffles (exchanges) the values of the selected range of parameters.

Noise: Adds a random noise value to the selected range of parameters.

Controller



ASSIGN (Voice Assign)

Specifies how notes are produced.

Poly: Play polyphonically. The program can be played using chords.

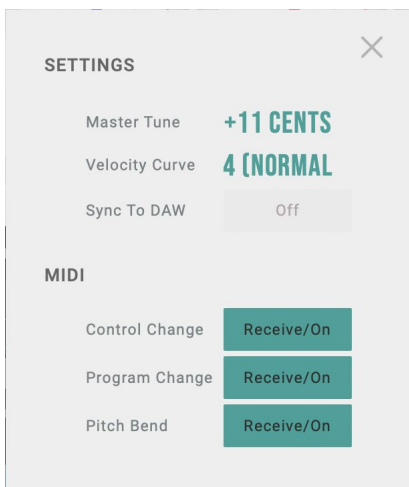
Mono: Play monophonically. Only one note can be played at a time with the program.

Mono Legato: Play monophonically. When you play a legato phrase by pressing the next key while the previous key is still pressed down, the first note in the phrase sounds normally, but the following notes sound without a break in the note. As an example, the notes sound but the envelope is not restarted.

SETTINGS

This page is for configuring the overall settings of the opsix native.

SETTINGS



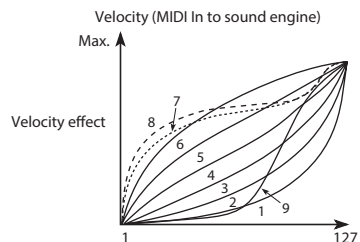
Master Tune

This adjusts the overall tuning for the entire opsix in one-cent units (semitone = 100 cents), over a range of ± 50 cents. When the value is set to 0 cents, A4 is equal to 440 Hz.

Velocity Curve

This controls how the volume and/or tone responds to variations in keyboard playing dynamics (velocity). Choose the curve that is most

appropriate for your playing strength and style.



Sync To DAW

Enable this when you want to sync the tempo of the opsix native with your DAW.

When this is OFF, each program will sound using their own tempo values.

MIDI

Control Change

Selects whether MIDI control change messages will be received.

Tip: CC#1 (Modulation Wheel), CC#64 (Damper) and CC#120 onward cannot be controlled using this setting.

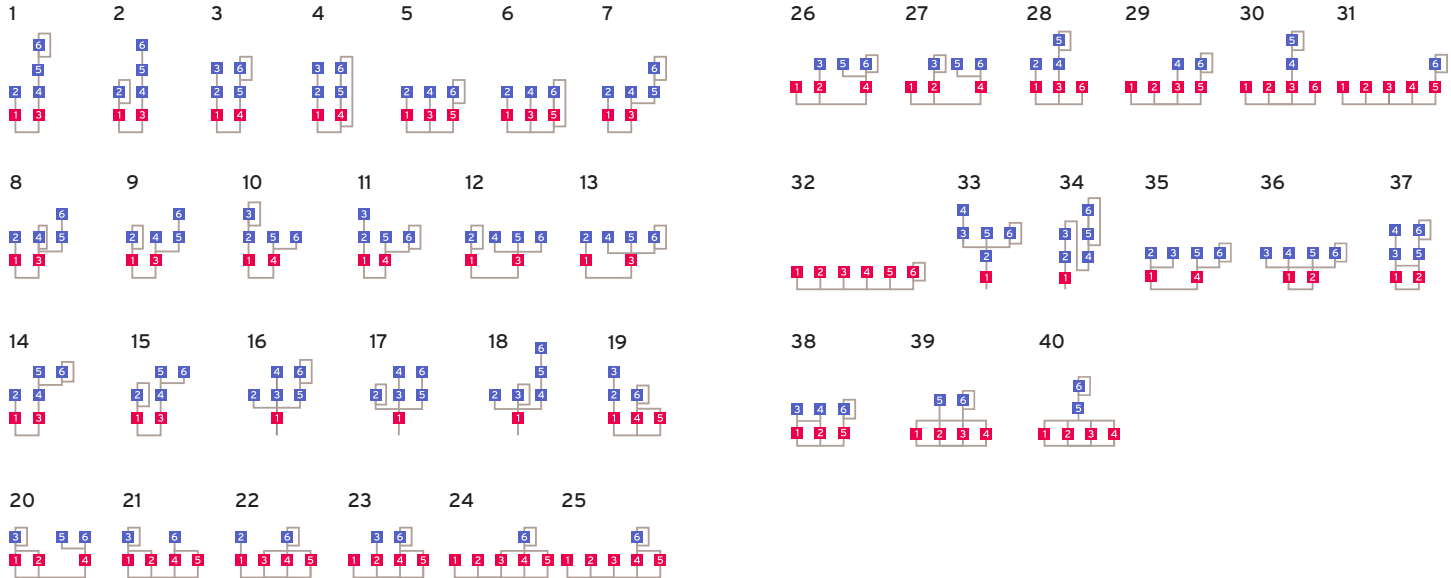
Program Change

Selects whether MIDI program change messages will be received.

Pitch Bend

Selects whether MIDI pitch bend messages will be received.

Algorithm List



Waveform List

Full name	Notes
Sine	Generates a sine wave. This is the basic waveform used in FM synthesizers, as it contains a fundamental tone but no overtones.
Sine 12bit	Generates a sine wave with coarse resolution such as that used in old digital synthesizers.
Sine 8bit	Generates a sine wave with even coarser resolution. This is effective for making sounds with noise.
Triangle	Generates a triangle wave. Unlike the sine wave, this waveform contains harmonics, but also has a rounder feel than the sawtooth or square wave.
Saw	Generates a sawtooth wave. This waveform is used to create sounds typical of analog synthesizers, such as synth basses and brass.
Saw HD	Generates a sawtooth wave with richer high-end overtones than the normal sawtooth wave, by using a large amount of CPU power.
Square	Generates a square wave. This waveform is used for electronic and wind instrument sounds.
Square HD	Generates a square wave with richer high-end overtones than the normal square wave, by using a large amount of CPU power.
Additive Saw3	Generates the first three harmonics of a sawtooth wave.
Additive Sqr3	Generates the first three harmonics of a square wave.
Additive Tri3	Generates the first three harmonics of a triangle wave.
Additive 12345	Generates an amplitude equal to the first through fifth harmonics. This is like a filtered sawtooth wave.
Additive 1+2	Generates a wave with an amplitude equal to the fundamental tone and second harmonic. This is like the 8' and 4' stops on an organ.
Additive 1+3	Generates an amplitude equal to the fundamental tone and third harmonic. This is like the 8' and +2 2/3' stops on an organ.
Additive 1+4	Generates a wave with an amplitude equal to the fundamental tone and fourth harmonic. This is like the 8' and +2' stops on an organ.
Additive 1+5	Generates an amplitude equal to the fundamental tone and fifth harmonic. This is like the 8' and +1 3/5' stops on an organ.

Full name	Notes
Additive 1+6	Generates a wave with an amplitude equal to the fundamental tone and sixth harmonic. This is like the 8' and +1 1/3' stops on an organ.
Additive 1+7	Generates an amplitude equal to the fundamental tone and seventh harmonic.
Additive 1+8	Generates a wave with an amplitude equal to the fundamental tone and eighth harmonic. This is like the 8' and +1' stops on an organ.
Noise S/H	Generates noise with a musical element, by means of a sample hold circuit.
Noise White	Generates white noise. A certain level of noise is added to the sound throughout the frequency spectrum.
Noise Pink	Generates pink noise. Noise is added to the sound in inverse proportion to the frequency.
Noise Blue	Generates blue noise. Noise is added to the sound in proportion to the frequency.

Control Source List

Full name
Modulation Wheel
Pitch Wheel
Pitch Wheel +
Pitch Wheel –
Damper Pedal
Note Number
Velocity
Exp. Velocity
Release Velocity
Aftertouch*
EG1 (Pitch)
EG2 (Filter)
EG3 (Assignable)
LFO1 (Operator)
LFO2 (Filter)
LFO3 (Assignable)

Motion Destination List

Scope	Destination	Notes
Off	---	---
Program	Pitch	---
	Octave	---
	Transpose	---
	Level	---
	Pan	Controls the fixed left-right PAN position.
	Attack Time	This is the Attack parameter on the ALGO page. This controls the relative decay and release times for all Operators.
	Decay Time	Controls the relative decay times for all Operators.
	Release Time	Controls the relative release times for all Operators.
	Sustain Level	Controls the relative sustain levels for all Operators.
	Decay/Release	This is the Decay/Release parameter on the ALGO page. This controls the relative decay and release times for all Operators.
	Glide Mode	---
	Glide Time	---
	Unison Voices	---
	Unison Detune	---
	Unison Spread	---
	Tempo	---
	Algorithm	---
	Algorithm FB	---

Scope	Destination	Notes
OP1...6	Pitch	---
	Coarse Ratio	---
	Fine Ratio	---
	Detune	---
	Transpose	---
	Fixed Frequency	---
	Level	---
	Attack Time	---
	Decay Time	---
	Release Time	---
	Sustain Level	---
	FM Feedback	---
	FM Wave Width	---
	Ring Mod. Depth	---
	Ring Mod. Shape	---
	Filter Cutoff	---
	Filter Resonance	---
	Filter OSC Mix	---
	Wave Folder Gain	---
	Wave Folder Bias	---
	WaveFolder OSCMix	---
	Effect OSC Mix	---
	Peak.EQ Frequency	---
	Peak.EQ Gain	---
	Shelv.EQ Low Gain	---
	Shelv.EQ High Gain	---
	Phaser Frequency	---
	Phaser Feedback	---
	S.Delay Time	---
	S.Delay Feedback	---
Comb Frequency	---	
Comb Feedback	---	

Scope	Destination	Notes
OP1...6	Distortion Amount	---
	Distortion Low Gain	---
	Drive Amount	---
	Drive Low Gain	---
	Decimator Freq.	---
	Decimator Bit	---
	WS High Damp	---
	Punch Amount	---
	Punch High Gain	---
	Keytrack Low	---
Keytrack High	---	
Level Mod Velocity	---	
EG1..3	Attack Time	---
	Decay Time	---
	Release Time	---
	Sustain Level	---
LFO1..3	Wave	---
	Speed	---
	Sync Speed	---
	Fade	---
Filter	Cutoff	---
	Resonance	---
FX1..3		Depends on the effect type.
Arpeggiator	Run	---
	Pattern	---
	Resolution	---
	Gate Time	---
	Octave	---
Sequencer	Swing	---
User algorithm	1→1..6→5	---
MIDI	Pitch Wheel	---
	CC 1...118	---

Virtual Patch Source List

Scope	Source	Notes
Off		---
Controller	Modulation Wheel	---
	Pitch Wheel	---
	Pitch Wheel +	This effect will be applied when the PITCH wheel is moved in the + direction (away from you).
	Pitch Wheel –	This effect will be applied when the PITCH wheel is moved in the – direction (towards you).
	Damper Pedal	---
Keyboard	Note Number	The effect will be applied according to the note number. The center note is 60 (C4).
	Velocity	---
	Exp. Velocity	The effect will be applied exponentially in relation to the velocity. The effect will not be readily evident at lower velocity values, but will be applied at a steep curve with higher velocity values.
	Release Velocity	The effect will be applied according to release velocity (how quickly you release the key after you play a note).
EG/LFO	EG1 (Pitch)	---
	EG2 (Filter)	---
	EG3 (Assignable)	---
	LFO1 (Operator)	---
	LFO2 (Filter)	---
	LFO3 (Assignable)	---
CC + (Unipolar)	CC 1..119 +	When the CC value is "0", the V.Patch effect will also be "0". When the intensity is a positive value, increasing the CC value will result in a positive effect only. (this works the opposite with a negative value).
CC +/- (Bipolar)	CC 1..119 +/-	When the CC value is "64", the V.Patch effect will be "0". When the intensity is a positive value, increasing the CC value above 64 will result in a positive effect, and reducing the value will result in a negative effect. (this works the opposite with a negative value).
MIDI	Aftertouch	---
	Poly Aftertouch	---





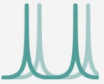
Virtual Patch Destination List






Scope	Destination	Notes
Off		---
Program	Pitch	---
	Octave	---
	Transpose	---
	Level	---
	Pan	Controls the left-right position in the stereo field.
	Attack Time	Controls the relative attack times for all Operators.
	Decay Time	Controls the relative decay times for all Operators.
	Release Time	Controls the relative release times for all Operators.
	Sustain Level	Controls the relative sustain levels for all Operators.
	Tempo	---
	Algorithm	---
	Algorithm Feedback	---
	Glide Time	---
	Unison Voices	---
	Unison Detune	---
Unison Spread	---	
OP1...6	Pitch	---
	Coarse Ratio	---
	Octave	---
	Transpose	---
	Level	---
	Attack Time	---
	Decay Time	---
	Release Time	---
	Sustain Level	---
	FM Feedback	---
	FM Wave Width	---






Scope	Destination	Notes
OP1...6	Ring Mod. Depth	---
	Ring Mod. Shape	---
	Wave Folder Gain	---
	Wave Folder Bias	---
	Wave Folder OSC Mix	---
	Filter Cutoff	---
	Filter Resonance	---
	Filter OSC Mix	---
	Effect OSC Mix	---
	Peak.EQ Frequency	---
	Peak.EQ Gain	---
	Shelv.EQ Low Gain	---
	Shelv.EQ High Gain	---
	Phaser Frequency	---
	Phaser Feedback	---
	S.Delay Time	---
	S.Delay Feedback	---
	Comb Frequency	---
	Comb Feedback	---
	Distortion Amount	---
	Distortion Low Gain	---
	Drive Amount	---
	Drive Low Gain	---
	Decimator Freq.	---
	Decimator Bit	---
	WS High Damp	---
	Punch Amount	---
Punch High Gain	---	
EG1..3	Attack Time	---
	Decay Time	---
	Release Time	---
	Sustain Level	---






Scope	Destination	Notes
LFO1..3	Waveform	---
	Speed	---
	Phase	---
	Fade	---
Filter	Cutoff	---
	Resonance	---
FX1..3	Param1..4	Depends on the effect type.
Arpeggiator	Arpeggiator Resolution	---
	Arpeggiator Gate Time	---
	Arpeggiator Octave	---
Sequencer	Swing	---

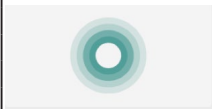

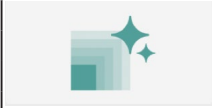

Effect Parameter List

Effect name		Parameter name		Range
Display	Full name	Display	Full name	
	Chorus	Mix	Dry:Wet Mix	0–100
		Depth	Depth	0–100 [%]
		Speed	Speed	0.020–20.000 [Hz]
		Phase	LFO Phase	0.0–100.0 [%]
		Varies the delay time of the input signal to create a thicker or warmer sound. Use the PHASE parameter to shift the left and right LFOs for control of how the sound spreads out.		
	Unison Ensemble	Mix	Dry:Wet Mix	0–100
		Depth	Depth	0–100 [%]
		Rate	Rate	0–100 [%]
		Voices	Voices	2–8
		Creates a rich, wide sound like multiple oscillators playing in unison. The DEPTH and RATE parameters simulate the detuning of the oscillators, and the VOICE parameter is used to simulate the number of oscillators.		
	Phaser/Phaser (BPM)	Mix	Dry:Wet Mix	0–100
		Depth	Depth	0–100 [%]
		Speed	Speed	0.020–20.000 [Hz] / 1/48–4/1
		Reso	Resonance	0.0–100.0 [%]
		Alters the phase of the sound to give the sound a swelling effect. This is effective for electric pianos and similar sounds. Use the PHASE parameter to shift the left and right LFOs for control of how the sound spreads out.		
	Auto Pan/Auto Pan (BPM)	Depth	Depth	0–100 [%]
		Waveform	Waveform Type	Triangle, Sine, Vintage, Up, Down, Square
		Speed	Speed	0.020–20.000 [Hz] / 1/48–4/1
		Phase	LFO Phase	0.0–100.0 [%]
		This is an auto pan that moves the sound to the left and right. Moving the left and right LFOs gives effects such as both channels crossing past or following each other.		
	Flanger/Flanger (BPM)	Mix	Dry:Wet Mix	0–100
		Depth	Depth	0–100 [%]
		Speed	Speed	0.020–20.000 [Hz] / 1/48–4/1
		Feedback	Feedback	–100 – +100 [%]
		An effect that creates a wild swelling sound and a sense of motion in pitch. This is effective for sounds that contain many overtones.		

Effect name		Parameter name		Range
Display	Full name	Display	Full name	
	Rotary Speaker	Balance	Horn/Rotor Balance	R100:H0–R0:H100 [%]
		Speed Sw.	Speed Switch	Slow, Fast
		Speed	Speed	–100.0 – +100.0 [%]
		Type	Speaker Type	Natural, Natural + Direct, Resonant, Resonant + Direct, Bright, Bright + Direct, Original CX-3
		An effect that realistically simulates a vintage rotary speaker. By assigning the MODULATION wheel on the V.PATCH page to the SPD SW parameter, you can use the wheel to switch between slow and fast, which is effective for performance.		
	Auto Wah	Mix	Dry:Wet Mix	0–100
		Sens	Envelope Sens	0.0–100.0 [%]
		Shape	Envelope Shape	–100 – +100 [%]
		Reso	Resonance	0–100 [%]
		This effect simulates an auto-wah. The effect sweeps according to changes in input signal strength (the envelope). This sound is often used in funk music for choppy guitar rhythms, clav sounds and so on.		
	Exciter	Mix	Dry:Wet Mix	0–100
		Freq	Emphasis Frequency	3000–24000 [Hz]
		Blend	Blend	–100 – +100 [%]
		This effect adds dynamics to the sound and emphasizes its clarity. FREQ controls the frequencies to be emphasized, and BLEND controls the effect depth.		
	Enhancer	Mix	Dry:Wet Mix	0–100
		Depth	Depth	0–100 [%]
		Delay	Delay	0.0–100.0 [%]
		Spread	Spread	0.0–100.0 [%]
		This effect widens out and adds presence to the sound.		
	LFO Filter	Cutoff	Cutoff Frequency	0–100 [%]
		Reso	Resonance	0–100 [%]
		Depth	LFO Depth	0–100 [%]
		Speed	LFO Speed	0.020–20.000 [Hz]
		This effect uses an LFO to shift the cutoff frequency of the low-pass filter. Effective for adding a sense of motion to a phrase.		

Effect name		Parameter name		Range
Display	Full name	Display	Full name	
	3-Band EQ	Lo Gain	Band1 Low Gain	-18.0 – +18.0 [dB]
		Hi Gain	Band3 High Gain	-18.0 – +18.0 [dB]
		Mid Gain	Band2 Mid Gain	-18.0 – +18.0 [dB]
		Mid Freq	Band2 Mid Frequency	20–20000 [Hz]
		This is a three-band equalizer. Used to adjust the sound at the final stage.		
	Distortion	Drive	Drive	0–100 [%]
		Level	Level	-Inf, -84.9 – 0.0 [dB]
		Freq	PEQ Frequency	20–20000 [Hz]
		Gain	PEQ Gain	-18.0 – +18.0 [dB]
		Use the DRIVE parameter to get effects from a gentle vacuum tube-like distortion to a powerful wave-crunching distorted sound. A parameter equalizer is placed later in the series, which lets you create a diverse range of sounds.		
	Guitar Amp	Drive	Drive	0.0–100.0 [%]
		Model	Amp Type	VOX AC15, VOX AC15TB, VOX AC30, VOX AC30TB, UK Blues, UK 70'S, UK 80'S, UK 90'S, UK Modern, US Modern, US HiGain, Boutique OD, Boutique CL, Black 2x12, Tweed 1x12, Tweed 4x10
		High EQ	High EQ	0–100 [%]
		Volume	Volume	-Inf, -84.9 – +12.0 [dB]
		This monaural effect models guitar amp and speaker effects ranging from delicate saturation to roaring distortion.		
	Decimator	Mix	Dry:Wet Mix	0–100
		Freq	Sampling Frequency	1000–48000 [Hz]
		Reso	Bit Resolution	4.0–24.0
		Damp	High Damping	0–100 [%]
		This monaural effect models guitar amp and speaker effects ranging from delicate saturation to roaring distortion.		
	Grain Shifter	Mix	Dry:Wet Mix	0–100
		Time	Time Frame	0–100 [%]
		Speed	LFO Speed	1/48–4/1
		Retrig	Retrigger	Off, Mod Whl, Damper, Note On, Velocity, LFO1, LFO2, LFO3
		This cuts out the short waveforms from the input signal and plays them back repeatedly, for an effect that changes the signal into a mechanical sound. The TIME parameter sets the length of the waveform to cut, and the SPEED parameter sets how fast to switch between the waveforms.		

Effect name		Parameter name		Range
Display	Full name	Display	Full name	
	Master Limiter	Threshold	Threshold	-30.0 – 0.0 [dB]
		Ceil	Out Ceiling	-30.0 – 0.0 [dB]
		Release	Release	0.65–1000.00 [msec]
		This effect averages out the changes in volume of the input signal. Only signals that exceed the specified level will be compressed, which brings down unnecessary peaks in sound. The THRE parameter sets the level at which the compression is applied, and the CEIL parameter sets the output level.		
	Compressor	Mix	Dry:Wet Mix	0–100
		Sens	Sensitivity	0–100
		Attack	Attack	0–100
		Level	Output Level	-Inf, -84.9–0.0 [dB]
		This compressor models the extremely popular clean-sounding pedal effects.		
	Delay/Delay (BPM)	Level	Delay Level	0–100
		Feedback	Feedback	0–100 [%]
		Time L	Delay Time L	0 [msec] – 2.73 [sec] / 1/48–4/1
		Time R	Delay Time R	0 [msec] – 2.73 [sec] / 1/48–4/1
		This is a simple stereo delay with feedback.		
	Autopan Dly/Autopan Dly(BPM)	Level	Delay Level	0–100
		Depth	Auto Pan Depth	0–100 [%]
		Delay	Delay Time	0 [msec] – 1.36 [sec] / 1/48–4/1
		Speed	Speed	0.020–20.000 [Hz] / 1/48–4/1
		A stereo delay that pans the delay sound left and right using an LFO.		
	Tape Echo/Tape Echo (BPM)	Level	Delay Level	0–100
		Feedback	Feedback	0–100 [%]
		Time	Delay Time	0 [msec] – 2.7000 [sec] / 1/48–4/1
		Damping	Damping	-100.0 – +100.0 [%]
		This effect models tape saturation and tape echo. The DAMP parameter sets the amount of high-end and low-end attenuation.		

Effect name		Parameter name		Range
Display	Full name	Display	Full name	
	Early Reflection	Level	Reverb Level	0–100
		Type	Type	Sharp, Loose, Modulated, Reverse
		Time	Reverb Time	10 [msec] – 1.600 [sec]
		High EQ	High EQ Gain	–15.0 – +15.0 [dB]
		This effect extracts only the initial reflections of the sound from the simulated reverb sounds, giving a feeling of intimacy and presence. You can select the decay curve of the reverb using the TYPE parameter.		
	Reverb	Level	Reverb Level	0–100
		Type	Type	Hall, Large Hall, Smooth Hall, Chamber, Plate, Room, Wet Room, Space
		Time	Reverb Time	200 [msec] – 10.000 [sec] (note: this differs with each reverb type)
		Tone	Tone	500–20000 [Hz]
		A smooth, high-definition reverb with a natural echoing sound. A "Space" type is also available with a long pre-delay and release, to add to the standard Room, Hall, Chamber and Plate types.		
	Shimmer Reverb	Level	Reverb Level	0–100
		Type	Type	Clear, Riser, Submarine, Horror
		Time	Reverb Time	0–100 [%]
		Tone	Tone	0–100 [%]
		A reverb with an added pitch-shifter effect. The pitch shift width changes depending on the TYPE parameter, with sounds ranging from sparkling to mysterious effects.		
	Spring Reverb	Level	Reverb Level	0–100
		Length	Spring Length	0–100 [%]
		Time	Reverb Time	49 [msec] – 4.0000 [sec]
		Chirp	Chirp	0–100 [%]
		This reverb simulates the spring reverb sound used in some guitar amps and organs. You can control the characteristics of the spring to be modeled using the LENGTH and CHIRP parameters.		

Appendices

Troubleshooting

Please check the following points if you experience problems.

No sound

- Are the “Audio/MIDI Settings” (shown when you select “Sound Settings” for the menu) correctly configured?
- Is the Master Level or any other volume-related parameters set to 0?
- Is your computer set to produce sound?
 - If you’re using Windows, open the Control Panel and check [Sound and Audio Device Properties].
 - If you’re using macOS, check [System Settings] → [Sound] and Application folder → Utility folder → [Audio MIDI Settings] → [Audio Devices].
- If you’re using your computer’s sound card, is the sound card set up correctly?
- If you’ve connected an audio device to your computer, is the audio device set up so that sound can be output from it?

The sound has clicks, pops, or noise

You may experience clicks, pops, or noise if your computer’s CPU is experiencing a heavy load.

If you are having this type of problem, try the following.

- If other applications are running, close them.
- Reduce the maximum polyphony of the synthesizer you’re using.
- In the “Audio/MIDI Settings” (shown when you select “Sound Settings” for the menu), increase the audio buffer size. However, increasing this too much will also increase the latency (delay before you hear sound).

Sound is delayed

- Latency is determined by “the number of samples” x “the number of buffers.” In the “Audio/MIDI Settings” (shown when you select “Sound Settings” for the menu), set the “Audio buffer size” and the “Sample rate” to the lowest setting that still allows stable operation.

Can't control the software synthesizer from a MIDI device connected to the computer

- Are your computer and MIDI device connected correctly?
- Is the connected MIDI device detected by your computer?
 - If you're using Windows, open the Control Panel and check [Sound and Audio Device Properties] → [Hardware].
 - If you're using macOS, open the Application folder → Utility folder → [Audio MIDI Settings] → [MIDI Device], and make sure that your MIDI device is detected.
- Are the "Audio/MIDI Settings" (shown when you select "Sound Settings" for the menu) correctly configured?

Specifications

- Maximum polyphony: 32 notes (depending on the computer's CPU)
- Presets: 350
- Standalone operation or as a VST3/AU/AAX plug-in instrument
- Realtime MIDI control and automation is supported

Operating requirements

for Mac

- OS: macOS 10.14 Mojave or later (Latest updates)
- CPU: Apple M1 or better, or Intel Core i5 or better (Core i7 or better recommended)
- Memory: 8 GB RAM or more (16 GB RAM or more recommended)
- Storage: 8 GB or more free space (SSD recommended)
- Internet connection
- Plug-in: AU, VST3, AAX (Only 64bit plug-in is supported)

for Windows

- OS: Windows 10 64bit* or later (Latest updates)
 - * This software will not run on a 32-bit OS.
- CPU: Intel Core i5 or better (Core i7 or better recommended)
- Memory: 8 GB RAM or more (16 GB RAM or better recommended)
- Storage: 8 GB or more free space (SSD recommended)
- Internet connection
- Plug-in: VST3, AAX (Only 64bit plug-in is supported)

* Appearance and specifications of this product are subject to change without notice.

Support and service

If you have questions about the product, please contact the Korg distributor for the country in which you purchased it.

Information to provide when contacting us

In order for us to help you, we'll need the following information since product support cannot be provided without it:

- Your name
- The name and version of the product (How to check the version)
- The name of the device that you're using
- The version of the operating system
- Your question (provide as much detail as possible)

Before you contact us

- Before you contact us, check whether this manual or KORG app Help Center has an answer for your question.
- Please be aware that we cannot answer questions about products that are not made by Korg, such as basic operation of your hardware device, or general questions about creating songs or sounds.

KORG INC.

4015-2 Yanokuchi, Inagi-City, Tokyo 206-0812 JAPAN

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