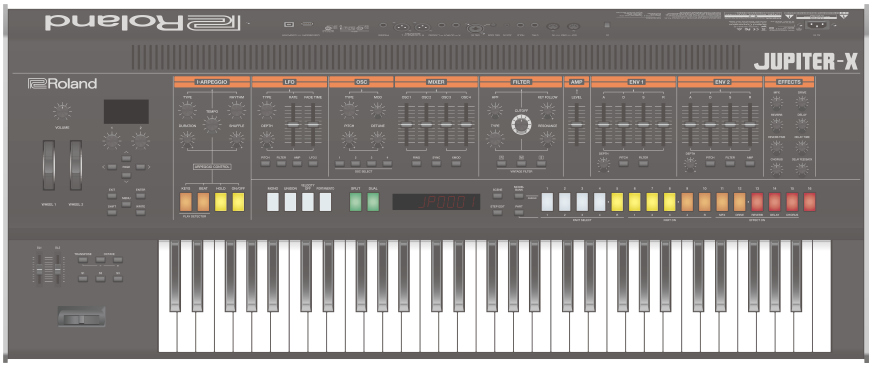




JUPITER-X
JUPITER-Xm

Parameter Guide

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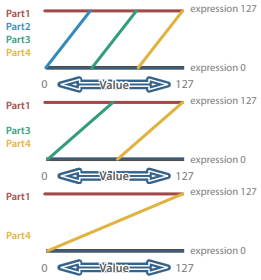
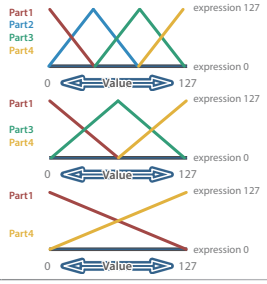
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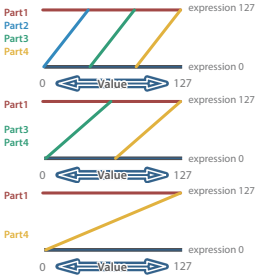
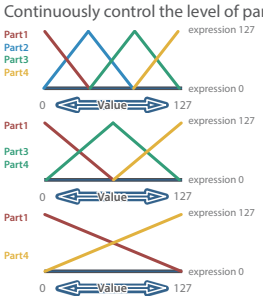
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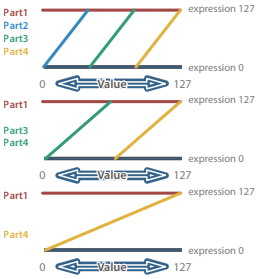
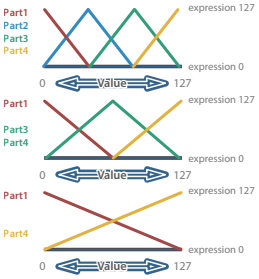
SCENE COMMON

Parameter	Value	Explanation
Scene Level	0–127	Adjusts the overall volume of the scene.
Tempo	20.00–300.00	Specifies the tempo of the scene (including the arpeggio). * **Hold down the [SHIFT] button while operating the controller to edit the value in 0.01 increments.**

ASSIGN

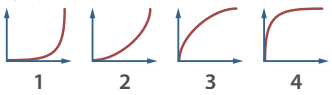
SL1–SL2	SL1, SL2 function assignments	
	OFF	No function is assigned.
	CC01–CC95	Controller number 1–95
	AFT	Aftertouch
	BEND DOWN	Applies the same effect as when the pitch bend wheel is moved downward.
	BEND UP	Applies the same effect as when the pitch bend wheel is moved upward.
	CHO LEVEL	Chorus level is assigned.
	REV LEVEL	Reverb level is assigned.
	DLY LEVEL	Delay level is assigned.
	ARP SHUFFLE	I-ARP's G-Shuffle parameter is assigned.
	ARP DURATION	I-ARP's G-Duration parameter is assigned.
	PART FADE1	Continuously control the level of parts 1–4. 
	PART FADE2	Continuously control the level of parts 1–4. 
	LEVEL P-1–P-R	Each part's volume is assigned.
	AGE	The SYSTEM > AGE parameter is assigned.
S1–S3 Func	S1-S3 function assignments	
	OFF	No function is assigned.
	CC01–CC95	Controller number 1–95
	AFT	Aftertouch
	MONO/POLY	Mono/poly switch is assigned.
	SCENE DOWN (✻)	Switch the scene to the previous number.
	SCENE UP (✻)	Switch the scene to the next number.
	TONE DOWN (✻)	Switch the tone to the previous number.
	TONE UP (✻)	Switch the tone to the next number.
	PANEL DEC (✻)	Applies the same effect as when the panel's [DEC] button is pressed.
	PANEL INC	Applies the same effect as when the panel's [INC] button is pressed.
	CHO SW	Chorus on/off is assigned.
	REV SW	Reverb on/off is assigned.
	DLY SW	Delay on/off is assigned.
	ARP SW (✻)	Applies the same effect as when the panel's I-ARPEGGIO [ON/OFF] button is pressed.
	ARP HOLD (✻)	Applies the same effect as when the panel's I-ARPEGGIO [HOLD] button is pressed.
	DETECT KEYS (✻)	Applies the same effect as when the panel's I-ARPEGGIO [KEYS] button is pressed.
	DETECT BEAT (✻)	Applies the same effect as when the panel's I-ARPEGGIO [BEAT] button is pressed.
	UNISON SW	Unison on/off is assigned.
	BEND MODE	Switches the bend mode.
	AUTO TUNING (✻)	Executes tuning for the voice slot of a model that simulates an analog synthesizer. The tuning will be corrected in a few seconds, but will subsequently return to the pitch discrepancies specified by the tone parameters.
	TAP TEMPO (✻)	Sets the tap tempo function.
	START/STOP (✻)	Starts/stops the step editor. * **On version 1.30 or later, as the functions for S1–S3 in step edit are fixed, START/STOP cannot be assigned.**
	DRV SW	Overdrive on/off is assigned.
	VOC/MIC	When the Vocoder tone is selected, this selects whether to use the vocoder sound or the mic input sound.
S1–S3 Mode	Specifies the operation of the button. * **Buttons to which a function marked with "✻" is assigned will operate in LATCH mode regardless of this setting.**	
	LATCH	The assigned function is switched each time you press the button.
	MOMENTARY	The assigned function is effective only while you hold down the button.
Hold	Hold pedal function assignments	
	OFF	No function is assigned.
	CC01–CC95	Controller number 1–95
	AFT	Aftertouch
	MONO/POLY	Mono/poly switch is assigned.
	SCENE DOWN	Switch the scene to the previous number.
	SCENE UP	Switch the scene to the next number.
	TONE DOWN	Switch the tone to the previous number.
	TONE UP	Switch the tone to the next number.
	PANEL DEC	Applies the same effect as when the panel's [DEC] button is pressed.
	PANEL INC	Applies the same effect as when the panel's [INC] button is pressed.
	CHO SW	Chorus on/off is assigned.
	REV SW	Reverb on/off is assigned.
	DLY SW	Delay on/off is assigned.
	ARP SW	Applies the same effect as when the panel's I-ARPEGGIO [ON/OFF] button is pressed.
	ARP HOLD	Applies the same effect as when the panel's I-ARPEGGIO [HOLD] button is pressed.
	DETECT KEYS	Applies the same effect as when the panel's I-ARPEGGIO [KEYS] button is pressed.
	DETECT BEAT	Applies the same effect as when the panel's I-ARPEGGIO [BEAT] button is pressed.
	UNISON SW	Unison on/off is assigned.
	BEND MODE	Switches the bend mode.
	AUTO TUNING	Executes tuning for the voice slot of a model that simulates an analog synthesizer. The tuning will be corrected in a few seconds, but will subsequently return to the pitch discrepancies specified by the tone parameters.
	TAP TEMPO	Sets the tap tempo function.
	START/STOP	Starts/stops the step editor.
	DRV SW	Overdrive on/off is assigned.
	VOC/MIC	When the Vocoder tone is selected, this selects whether to use the vocoder sound or the mic input sound.
Hold Pole	Specifies the polarity of the pedal connected to the HOLD jack.	
	STANDARD	Specifies standard polarity.
	REVERSE	Specifies reverse polarity.

Parameter	Value	Explanation
Ctrl	Ctrl pedal function assignments	
	OFF	No function is assigned.
	CC01–CC95	Controller number 1–95
	AFT	Aftertouch
	BEND DOWN	Applies the same effect as when the pitch bend wheel is moved downward.
	BEND UP	Applies the same effect as when the pitch bend wheel is moved upward.
	CHO LEVEL	Chorus level is assigned.
	REV LEVEL	Reverb level is assigned.
	DLY LEVEL	Delay level is assigned.
	ARP SHUFFLE	I-ARP's G-Shuffle parameter is assigned.
	ARP DURATION	I-ARP's G-Duration parameter is assigned.
	PART FADE1	Continuously control the level of parts 1–4. 
	PART FADE2	Continuously control the level of parts 1–4. 
	LEVEL P-1–P-R	Each part's volume is assigned.
	AGE	The SYSTEM > AGE parameter is assigned.
Part XFade Pos	0–127	This parameter stores the current value of PART FADE as a scene setting.
Wheel1 JUPITER-X only	Wheel1 function assignments	
	OFF	No function is assigned.
	CC01–CC95	Controller number 1–95
	AFT	Aftertouch
	BEND	Pitch bend is assigned.
Wheel2 JUPITER-X only	Wheel2 function assignments	
	OFF	No function is assigned.
	CC01–CC95	Controller number 1–95
	AFT	Aftertouch
	BEND DOWN	Applies the same effect as when the pitch bend wheel is moved downward.
	BEND UP	Applies the same effect as when the pitch bend wheel is moved upward.
	CHO LEVEL	Chorus level is assigned.
	REV LEVEL	Reverb level is assigned.
	DLY LEVEL	Delay level is assigned.
	ARP SHUFFLE	I-ARP's G-Shuffle parameter is assigned.
	ARP DURATION	I-ARP's G-Duration parameter is assigned.

Parameter	Value	Explanation
Wheel2 JUPITER-X only	PART FADE1	Continuously control the level of parts 1–4. 
	PART FADE2	Continuously control the level of parts 1–4. 
	LEVEL P1–P5	Each part's volume is assigned.
	AGE	The SYSTEM > AGE parameter is assigned.
CTRL SOURCE		
CtrlSrc1–4	OFF, CC01–CC31, CC33–CC95, BEND, AFT	Specify the MIDI messages used for tone control.
VOICE RSRV		
Part1–R	0–10	Specifies the number of voices reserved for each part when the performance exceeds the maximum polyphony.

SCENE PART

Parameter	Value	Explanation
Part Level	0–127	Specifies the volume of each part.
Pan	L64–63R	Specifies the pan of each part's sound when outputting in stereo.
Rev Send	0–127	Specifies the send level to reverb.
Cho Send	0–127	Specifies the send level to chorus.
Delay Send	0–127	Specifies the send level to delay.
Output	THRU, DRIVE	Specifies whether the output of each part goes through the OVER DRIVE effect (DRIVE) or does not go through it (THRU).
Part Sw	OFF, ON	Specifies whether the part is enabled (ON) or disabled (OFF).
Mute Sw	OFF, MUTE	Specifies the part mute setting.
Pitch		
Coarse Tune	-48–+48	Shifts the pitch in units of a semitone.
Fine Tune	-50–+50	Finely adjusts the pitch in units of one cent.
Oct Shift	-3–+3	Shifts the pitch of the keyboard in units of one octave.
Bend Range Part 1–4 only	0–24, TONE	Specifies the range of pitch change controlled by pitch bend, in semitone units. To use the setting of the tone, choose TONE.
Bend Mode Part 1–4 only	Specifies the behavior when the pitch bend controller is operated.	
	NORMAL	The conventional pitch bend effect occurs.
	C+L (CATCH + LAST)	The pitch bend effect applies only to the last-played note. If a note-on occurs while pitch bend is already applied, the new note sounds at the center pitch. The pitch starts changing only after the controller passes through the center position.
	TONE	The tone's settings are used.

Parameter	Value	Explanation
Pit Attack (*1) Part 1–4 only	-64– +63	Specifies the attack time of the pitch envelope.
Pit Decay (*1) Part 1–4 only	-64– +63	Specifies the decay time of the pitch envelope.
Pit Sustain (*1) Part 1–4 only	-64– +63	Specifies the sustain level of the pitch envelope.
Pit Release (*1) Part 1–4 only	-64– +63	Specifies the release time of the pitch envelope.
Pit Env Depth (*1) Part 1–4 only	-64– +63	Specifies the depth of the pitch envelope.
FILTER Part 1–4 only		
Flt Attack (*1)	-64– +63	Specifies the attack time of the filter envelope.
Flt Decay (*1)	-64– +63	Specifies the decay time of the filter envelope.
Flt Sustain (*1)	-64– +63	Specifies the sustain level of the filter envelope.
Flt Release (*1)	-64– +63	Specifies the release time of the filter envelope.
Flt Env Depth (*1)	-64– +63	Specifies the depth of the filter envelope.
Flt KeyFllw (*1)	-64– +63	Specifies the amount by which the keyboard pitch affects the cutoff frequency (key follow). With lower settings of this value, the cutoff frequency becomes lower as you play higher notes on the keyboard.
AMP Part 1–4 only		
Amp Attack (*1)	-64– +63	Specifies the attack time of the amp envelope.
Amp Decay (*1)	-64– +63	Specifies the decay time of the amp envelope.
Amp Sustain (*1)	-64– +63	Specifies the sustain level of the amp envelope.
Amp Release (*1)	-64– +63	Specifies the release time of the amp envelope.
LFO Part 1–4 only		
Pit LFO Dep (*1)	-64– +63	Specifies the amount by which the LFO affects the pitch.
Flt LFO Dep (*1)	-64– +63	Specifies the amount by which the LFO affects the cutoff frequency.
Amp LFO Dep (*1)	-64– +63	Specifies the amount by which the LFO affects the volume.
MODIFY		
Cutoff	-64–+63	Adjusts how far the filter is open. Increasing this value makes the sound brighter, and decreasing it makes the sound darker.
Resonance (*1)	-64–+63	Emphasizes the portion of the sound in the region of the cutoff frequency, adding character to the sound. Excessively high settings can produce oscillation, causing the sound to distort. Increasing this value strengthens the character, and decreasing it weakens the character.
Attack	-64–+63	Adjusts the time over which the sound reaches its maximum volume after you press the key. Higher values produce a milder attack; lower values produce a sharper attack.
Decay	-64–+63	Adjusts the time over which the volume decreases from its maximum value. Larger settings of this value make the decay longer, and smaller settings make the decay shorter.
Release	-64–+63	The time it takes after the key is released for a sound to become inaudible. Larger settings of this value make the sound linger, and smaller settings make the sound end more sharply.
Vib Rate Part 1–4 only	-64–+63	Adjusts the vibrato speed (the rate at which the pitch is modulated). The pitch will be modulated more rapidly for higher settings, and more slowly with lower settings.
Vib Depth Part 1–4 only	-64–+63	Adjusts the depth of the vibrato effect (the depth at which the pitch is modulated). The pitch will be modulated more greatly for higher settings, and less with lower settings.
Vib Delay Part 1–4 only	-64–+63	Adjusts the time until vibrato (pitch modulation) starts to apply. Higher settings will produce a longer delay time before vibrato begins, while lower settings produce a shorter time.
CTRL		
Mono/Poly Part 1–4 only	MONO, POLY, TONE	Choose "MONO" if you want the tone assigned to the part to play monophonically, or "POLY" if you want to play it polyphonically. To use the setting of the tone, choose "TONE."
Legato Sw Part 1–4 only	OFF, ON, TONE	Legato can be applied when playing monophonically. "Legato" is a playing technique that smooths the transition between notes, minimizing the sense of a gap between them. The effect is similar to the guitar performance techniques of hammering-on and pulling-off. Choose "ON" to apply legato, or "OFF" if not. Choose "TONE" if you want to use the setting specified by the tone.
Porta Sw Part 1–4 only	OFF, ON, TONE	Specifies whether portamento is applied. Select "ON" to apply portamento, or "OFF" if you don't want to apply portamento. Choose "TONE" if you want to use the setting specified by the tone.
Porta Time Part 1–4 only	0–127, TONE	When portamento is used, this specifies the time over which the pitch will change. Higher settings will cause the pitch change to the next note to take more time. Choose "TONE" if you want to use the setting specified by the tone.
Unison Sw Part 1–4 only	OFF, ON, TONE	This layers a single sound. Choose "ON" if you want to play using unison, or "OFF" if not. Choose "TONE" if you want to use the setting specified by the tone.
Velo Sens	-63–+63	Adjusts the velocity sensitivity. Larger settings raise the sensitivity.
Voice Assign	Sets the way sounds are played when the same key is pressed a number of times.	
	SINGLE	Only one sound can be played at a time when the same key is pressed. With continuous sounds where the sound plays for an extended time, the previous sound is stopped when the following sound is played.
	LIMIT	Layers notes of the same key so that they sound together. If long-sustaining notes are played consecutively, the previous notes are turned off after a certain number of notes accumulate.
	FULL	Layer the sound of the same keys. Even with continuous sounds where the sound plays for an extended time without previously played sounds being eliminated.
KBD Velo	REAL, FIXED	Specifies whether the velocity value changes according to the actual strength of your playing (REAL) or is always a fixed velocity value regardless of how you play (FIXED).
KBD Fixed Velo	1–127	Specifies the velocity value when KBD Velo is "FIXED."
Velo Curve	OFF, 1–4	For each part, select one of the following four velocity curves as appropriate for the playing touch of your MIDI keyboard. If you want to use the velocity curve of this unit's keyboard, choose "OFF."  1 2 3 4

*1 There are valid when the model of tone assigned to part 1–4 is other than JUPITER-8, JUNO-106, JX-8P, SH-101, RD-PIANO, or VOCODER.

Parameter	Value	Explanation
MIDI		
Rx PC	OFF, ON	Specifies whether program change is received (ON) or not received (OFF).
Rx Bank	OFF, ON	Specifies whether bank select is received (ON) or not received (OFF).
Rx Bend	OFF, ON	Specifies whether pitch bend is received (ON) or not received (OFF).
Rx Poly Pres	OFF, ON	Specifies whether polyphonic aftertouch is received (ON) or not received (OFF).
Rx Ch Pres	OFF, ON	Specifies whether channel aftertouch is received (ON) or not received (OFF).
Rx Mod	OFF, ON	Specifies whether modulation is received (ON) or not received (OFF).
Rx Volume	OFF, ON	Specifies whether volume is received (ON) or not received (OFF).
Rx Pan	OFF, ON	Specifies whether pan is received (ON) or not received (OFF).
Rx Exp	OFF, ON	Specifies whether expression is received (ON) or not received (OFF).
Rx Hold-1	OFF, ON	Specifies whether hold 1 is received (ON) or not received (OFF).
Rx Ch	1–16	Specifies the MIDI receive channel of each part. * **If Tx Mode is ON, this is also used as the MIDI transmit channel setting.**
SCALE Part 1–4 only		
Type	CUSTOM	**Custom:** This lets you create a custom scale.
	EQUAL	**Equal Temperament:** This tuning divides an octave into 12 equal parts. Every interval produces about the same amount of slight dissonance.
	JUST-MAJ	**Just (Major):** This scale eliminates dissonance in fifths and thirds. It is unsuited to playing melodies and cannot be transposed, but is capable of beautiful sonorities.
	JUST-MIN	**Just (Minor):** The scales of the major and minor just intonations are different. You can get the same effect with the minor scale as with the major scale.
	PYTHAGORE	**Pythagorean:** This scale, devised by the philosopher Pythagoras, eliminates dissonance in fourths and fifths. Dissonance is produced in thirds, but melodies are euphonious.
	KIRNBERGE	**Kirnberger:** This scale is a modification of the meantone and just intonations that permits greater freedom in transposition to other keys. Performances are possible in all keys (III).
	MEANTONE	**Meantone:** This scale makes some compromises in just intonation, enabling transposition to other keys.
	WERCKMEIS	**Werckmeister:** This is a combination of the Meantone and Pythagorean scales. Performances are possible in all keys (first technique, III).
	ARABIC	**Arabic Scale:** This scale is suitable for Arabic music.
Key	C, C#, D, D#, E, F, F#, G, G#, A, A#, B	Sets the keynote.
C–B	-64–+63	Finely adjusts the pitch.
EQ		
Switch	OFF, ON	Turns the equalizer (EQ) on/off.
In Gain	-24–+24 [dB]	Specifies the amount of boost/cut for the input sound.
Low Gain	-24–+24 [dB]	Specifies the amount of boost/cut for the low-frequency region.
Low Freq	20–16000 [Hz]	Specifies the frequency of the low-frequency region.
Mid Gain	-24–+24 [dB]	Specifies the amount of boost/cut for the mid-frequency region.
Mid Freq	20–16000 [Hz]	Specifies the frequency of the mid-frequency region.
Mid Q	0.5–16.0	Specifies the width of the mid-frequency region. Higher values produce a narrower width.
High Gain	-24–+24 [dB]	Specifies the amount of boost/cut for the high-frequency region.
High Freq	20–16000 [Hz]	Specifies the frequency of the high-frequency region.

SCENE ZONE

Parameter	Value	Explanation
Keyboard Sw	OFF, ON	Turns on/off the part played by the keyboard.
Key Rng Low	C-–G9	Set the keyboard range in which each part will sound. Make these settings when you want different key ranges to play different tones. Specify the lower limit (Key Rng Low) and upper limit (Key Rng Upp) of the key range.
Key Rng Upp	C-–G9	
Key Fade Low	0–127	Specifies the degree to which the part is sounded by notes played below the Key Rng Low. If you don't want the tone to sound at all, set this parameter to "0."
Key Fade Upp	0–127	Specifies the degree to which the part is sounded by notes played above the Key Rng Upp. If you don't want the tone to sound at all, set this parameter to "0."
Velo Rng Low	1–127	Specify the lower limit (Velo Rng Low) and upper limit (Velo Rng Upp) of the velocities that will sound the tone. Make these settings when you want different tones to sound depending on keyboard playing dynamics.
Velo Rng Upp	1–127	
Velo FadeLow	0–127	Specifies the degree to which the part is sounded by notes played more softly than Velo Rng Low. If you don't want the tone to sound at all, set this parameter to "0."
Velo FadeUpp	0–127	Specifies the degree to which the part is sounded by notes played more strongly than Velo Rng Upp. If you don't want the tone to sound at all, set this parameter to "0."
Ctrl Rx	* If a function that is not in units of an individual part is assigned to a controller, the operation is received regardless of the setting.	
Rx S1 -S3	OFF, ON	Specifies whether [S1]–[S3] button operations are received (ON) or not received (OFF).
Rx SL1 -SL2	OFF, ON	Specifies whether [SL1], [SL2] slider operations are received (ON) or not received (OFF).
Rx HoldPdl	OFF, ON	Specifies whether hold pedal operations are received (ON) or not received (OFF).
Rx CtrlPdl	OFF, ON	Specifies whether Ctrl pedal operations are received (ON) or not received (OFF).
Rx Wheel1 JUPITER-X only	OFF, ON	Specifies whether [WHEEL 1] wheel operation is received (ON) or not received (OFF).
Rx Wheel2 JUPITER-X only	OFF, ON	Specifies whether [WHEEL 2] wheel operation is received (ON) or not received (OFF).
Master Kbd		
Tx Mode	ON, OFF, MKB	Specifies whether MIDI messages are transmitted (ON) or not transmitted (OFF). If you're using this unit as a master keyboard, choose "MKB."
Mkb Ch	1–16	Specifies the transmit channel for MIDI messages of the keyboard part.
Mkb MSB	OFF, 0–127	Here you can enter numerical values for program number and bank select MSB/LSB to switch sounds on an external MIDI device.
Mkb LSB	OFF, 0–127	
Mkb PC	OFF, 1–128	
Mkb Volume	OFF, 0–127	Adjusts the volume of an external MIDI device.

SCENE PART MFX

Parameter	Value	Explanation
FllwToneMFX	OFF, ON	If this is OFF, the following parameters are shown.
Type	➡ "MFX List" (p. 40)	
Switch	OFF, ON	Switches the MFX on/off.
Cho Send	0–127	Adjusts the amount of chorus. If you don't want to add the chorus effect, set it to 0.
Rev Send	0–127	Adjusts the amount of reverb. If you don't want to add the reverb effect, set it to 0.
MFX Parameters	➡ "MFX List" (p. 40)	
Src1–4	Specifies the MIDI message that will control the corresponding MFX CONTROL parameter.	
	OFF	MFX CONTROL will not be used.
	CC01–31	Controller number 1–31
	CC33–95	Controller number 33–95
	BEND	Pitch bend
	AFT	Aftertouch
	SYS-CTRL1–4	Use the controller that is assigned by the System Control Source 1–4.
Sens1–4	-63–+63	Specifies the depth of MFX CONTROL. Specify a positive (+) value if you want to change the value of the assigned destination in a positive direction (larger, toward the right, faster, etc.), or specify a negative (-) value if you want to change the value in a negative direction (smaller, toward the left, slower, etc.). Larger values will allow a greater amount of control.
Asgn1–4	➡ "MFX List" (p. 40)	

*** These parameters are not shown if the model assigned to the part is RD-PIANO.**

SCENE EFFECT: Cho (Chorus)

If the **"SYSTEM EFFECT: Cho"** (p. 37) Source parameter is set to **"SCENE,"** the following parameters are shown, allowing you to edit the chorus type and other parameters.

If the parameter is set to **"SYS,"** the screen indicates **"Source is System.,"** and the following parameters are not shown.

Parameter	Value	Explanation
Switch	OFF, ON	Switches chorus on/off.
ChoType	➡ "Chorus Parameters" (p. 7)	
Level	0–127	Specifies the output level of the sound with chorus applied.
Rev Send	0–127	Specifies the send level to reverb.
Chorus Parameters	Edit the parameters of the selected chorus. The available parameters differ depending on the type of chorus you selected in ChoType. ➡ "Chorus Parameters" (p. 7)	

Chorus Parameters

00 OFF

01 Chorus

This is a stereo chorus.

Parameter	Value	Explanation
Rate	0–127	Frequency of modulation
Depth	0–127	Depth of modulation
Feedback	0–127	Level at which chorus sound is returned to the input

02 CE-1 (Chorus)

This models the classic BOSS CE-1 chorus effect unit. It provides a chorus sound with a distinctively analog warmth.

Parameter	Value	Explanation
Intensity	0–127	Chorus depth

03 SDD-320 (Dimension D)

This models Roland's DIMENSION D (SDD-320). It provides a clear chorus sound.

Parameter	Value	Explanation
Mode	1, 2, 3, 4, 1+4, 2+4, 3+4	Switches the mode.

04 Delay

This is a stereo delay.

Parameter	Value	Explanation
Dly Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
Dly Msec	1–1300	Adjusts the delay time from the direct sound until the delay sound is heard.
Dly Note	Note	
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200–8000 [Hz], BYPASS (*1)	Adjusts the frequency above which the delay sound fed back to the effect is filtered out (BYPASS: no cut).

05 T-Ctrl Dly (Time Control Delay)

A stereo delay in which the delay time can be varied smoothly.

Parameter	Value	Explanation
Dly Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
Dly Msec	1–1300	Adjusts the delay time from the direct sound until the delay sound is heard.
Dly Note	Note	
Acceleration	0–15	When you change the delay time, this specifies the time over which the current delay time changes to the specified delay time. This affects the speed of pitch change as well as the delay time.
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200–8000 [Hz], BYPASS (*1)	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.

06 Delay → Trem (Delay → Tremolo)

Tremolo is applied to the delay sound.

Parameter	Value	Explanation
Input	MONAURAL	The input is mono-mixed.
	STEREO	The sound is input in stereo.
Dly Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
Dly Msec	1–1300	Adjusts the delay time from the direct sound until the delay sound is heard.
Dly Note	Note	
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200–8000 [Hz], BYPASS (*1)	Adjusts the frequency above which the filtered out (BYPASS: no cut).
Trm Switch	OFF, ON	Switches the tremolo effect on/off
Trm ModWave	Modulation Wave	
	TRI	Triangle wave
	SQR	Square wave
	SIN	Sine wave
	SAW1	Sawtooth wave
	SAW2	
	TRP	Trapezoidal wave
Trm Sync	OFF, ON	If this is ON, the tremolo synchronizes with the tempo.
Trm Hz	0.05–10.00 [Hz]	Adjusts the tremolo rate.
Trm Note	Note	
Trm Depth	0–127	Adjusts the tremolo depth.

07 2Tap PanDly (2 Tap Pan Delay)

Delayed sound is heard from the two locations you specify.

Parameter	Value	Explanation
Dly Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
Dly Msec	1–1300	Adjusts the delay time from the direct sound until the second delay sound is heard.
Dly Note	Note	
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200–8000 [Hz], BYPASS (*1)	Adjusts the frequency above which the delay sound fed back to the effect is filtered out (BYPASS: no cut).
Dly1 Pan	L64–63R	Adjusts the stereo location of delay 1.
Dly2 Pan	L64–63R	Adjusts the stereo location of delay 2.
Dly1 Level	0–127	Adjusts the volume of delay 1.
Dly2 Level	0–127	Adjusts the volume of delay 2.

08 3Tap PanDly (3 Tap Pan Delay)

Delayed sound is heard from the three locations you specify.

Parameter	Value	Explanation
Dly Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
Dly Msec	1–2600	Adjusts the delay time from the direct sound until the third delay sound is heard.
Dly Note	Note	
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200–8000 [Hz], BYPASS (*1)	Adjusts the frequency above which the delay sound fed back to the effect is filtered out (BYPASS: no cut).
Dly1 Pan	L64–63R	Adjusts the stereo location of delay 1.
Dly2 Pan	L64–63R	Adjusts the stereo location of delay 2.
Dly3 Pan	L64–63R	Adjusts the stereo location of delay 3.
Dly1 Level	0–127	Adjusts the volume of delay 1.
Dly2 Level	0–127	Adjusts the volume of delay 2.
Dly3 Level	0–127	Adjusts the volume of delay 3.

09 JUNO Chorus (JUNO-106 Chorus)

This models the chorus effects of the Roland JUNO-106.

Parameter	Value	Explanation
Mode	I, II, I+II, JX I, JX II	Type of Chorus **I+II:** The state when two buttons are pressed simultaneously.
Noise Level	0–127	Amount of noise produced by the chorus

10 JV Chorus

Parameter	Value	Explanation
Filter Type	OFF	The filter is not used.
	LPF	This filter cuts off the high frequencies.
	HPF	This filter cuts off the low frequencies.
Cutoff Freq	200–8000 [Hz]	Adjusts the center frequency used when the filter cuts a specific frequency region.
Pre Delay	0.0–100.0 [ms]	Adjusts the delay time from when the direct sound plays until the reverb sound is heard.
Rate Sync	OFF, ON	When this is ON, the delay synchronizes with the tempo.
Rate Hz	0.05–10.00 [Hz]	Adjusts the frequency of modulation.
Rate Note	Note	
Depth	0–127	Adjusts the depth of modulation.
Phase	0–180 [deg]	Adjusts the depth of the chorus sound.
Feedback	0–127	Adjusts how much of the sound that is fed into the chorus is returned to the input.

NOTE

Note 1/64T, 1/64, 1/32T, 1/32, 1/16T, 1/32., 1/16, 1/8T, 1/16., 1/8, 1/4T, 1/8., 1/4, 1/2T, 1/4., 1/2, 1T, 1/2., 1, 2T, 1., 2

(*1) 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz], BYPASS

SCENE EFFECT: Dly (Delay)

If the **"SYSTEM EFFECT: Dly"** (p. 37) Source parameter is set to **"SCENE,"** the following parameters are shown, allowing you to edit the delay type and other parameters.

If the parameter is set to **"SYS,"** the screen indicates **"Source is System.,"** and the following parameters are not shown.

Parameter	Value	Explanation
Switch	OFF, ON	Switches the delay on/off.
DlyType	➡ "Delay Parameters" (p. 9)	
Level	0–127	Specifies the output level of the sound with delay applied.
Rev Send	0–127	Specifies the send level to reverb.
Delay parameters	Edit the parameters of the selected delay. The available parameters differ depending on the type of chorus you selected in DlyType. ➡ "Delay Parameters" (p. 9)	

Delay Parameters

00 OFF

01 Delay

This is a stereo delay.

Parameter	Value	Explanation
Dly Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
Dly Msec	1–1300	Adjusts the delay time from the direct sound until the delay sound is heard.
Dly Note	Note	
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200–8000 [Hz], BYPASS (*1)	Adjusts the frequency above which the delay sound fed back to the effect is filtered out (BYPASS: no cut).

02 T-Ctrl Dly (Time Control Delay)

A stereo delay in which the delay time can be varied smoothly.

Parameter	Value	Explanation
Dly Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
Dly Msec	1–1300	Adjusts the delay time from the direct sound until the delay sound is heard.
Dly Note	Note	
Acceleration	0–15	When you change the delay time, this specifies the time over which the current delay time changes to the specified delay time. This affects the speed of pitch change as well as the delay time.
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200–8000 [Hz], BYPASS (*1)	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.

03 Delay → Trem (Delay → Tremolo)

Tremolo is applied to the delay sound.

Parameter	Value	Explanation
Input	MONAURAL	The input is mono-mixed.
	STEREO	The sound is input in stereo.
Dly Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
Dly Msec	1–1300	Adjusts the delay time from the direct sound until the delay sound is heard.
Dly Note	Note	
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200–8000 [Hz], BYPASS (*1)	Adjusts the frequency above which the filtered out (BYPASS: no cut).
Trm Switch	OFF, ON	Switches the tremolo effect on/off
Trm ModWave	Modulation Wave of panning	
	TRI	Triangle wave
	SQR	Square wave
	SIN	Sine wave
	SAW1	Sawtooth wave
	SAW2	
	TRP	Trapezoidal wave
Trm Sync	OFF, ON	If this is ON, the tremolo synchronizes with the tempo.
Trm Hz	0.05–10.00 [Hz]	Adjusts the tremolo rate.
Trm Note	Note	
Trm Depth	0–127	Tremolo depth

04 2Tap PanDly (2 Tap Pan Delay)

Delayed sound is heard from the two locations you specify.

Parameter	Value	Explanation
Dly Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
Dly Msec	1–1300	Adjusts the delay time from the direct sound until the second delay sound is heard.
Dly Note	Note	
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200–8000 [Hz], BYPASS (*1)	Adjusts the frequency above which the delay sound fed back to the effect is filtered out (BYPASS: no cut).
Dly1 Pan	L64–63R	Adjusts the stereo location of delay 1.
Dly2 Pan	L64–63R	Adjusts the stereo location of delay 2.
Dly1 Level	0–127	Adjusts the volume of delay 1.
Dly2 Level	0–127	Adjusts the volume of delay 2.

05 3Tap PanDly (3 Tap Pan Delay)

Delayed sound is heard from the three locations you specify.

Parameter	Value	Explanation
Dly Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
Dly Msec	1–2600	Adjusts the delay time from the direct sound until the third delay sound is heard.
Dly Note	Note	
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200–8000 [Hz], BYPASS (*1)	Adjusts the frequency above which the delay sound fed back to the effect is filtered out (BYPASS: no cut).
Dly1 Pan	L64–63R	Adjusts the stereo location of delay 1.
Dly2 Pan	L64–63R	Adjusts the stereo location of delay 2.
Dly3 Pan	L64–63R	Adjusts the stereo location of delay 3.
Dly1 Level	0–127	Adjusts the volume of delay 1.
Dly2 Level	0–127	Adjusts the volume of delay 2.
Dly3 Level	0–127	Adjusts the volume of delay 3.

NOTE

Note 1/64T, 1/64, 1/32T, 1/32, 1/16T, 1/32., 1/16, 1/8T, 1/16., 1/8, 1/4T, 1/8., 1/4, 1/2T, 1/4., 1/2, 1T, 1/2., 1, 2T, 1., 2

(*1) 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz], BYPASS

SCENE EFFECT: Rev (Reverb)

If the **"SYSTEM EFFECT: Rev"** (p. 37) Source parameter is set to **"SCENE,"** the following parameters are shown, allowing you to edit the reverb type and other parameters.

If the parameter is set to **"SYS,"** the screen indicates **"Source is System.,"** and the following parameters are not shown.

Parameter	Value	Explanation
Switch	OFF, ON	Switches the reverb on/off.
RevType	➡ "Reverb Parameters" (p. 10)	
Level	0–127	Specifies the output level of the sound with reverb applied.
Reverb Parameters	Edit the parameters of the selected reverb type. The available parameters differ depending on the type of reverb you selected in ReveType. ➡ "Reverb Parameters" (p. 10)	

Reverb Parameters

00 OFF

01 INTEGRA7Rev (INTEGRA 7 Reverb)

Parameter	Value	Explanation
Char	ROOM1, ROOM2, HALL1, HALL2, PLATE	Selects the type of reverb.
PreDelay	0–100	Adjusts the delay time from the direct sound until the reverb sound is heard.
Time	0.1–10.0 [sec]	Adjusts the decay length of the reverb sound.
Density	0–127	Adjusts the density of the reverb sound.
Diffusion	0–127	Adjusts the change in the density of the reverb over time. The higher the value, the more the density increases with time. (The effect of this setting is most pronounced with long reverb times.)
LF Damp	0–100	Adjusts the low-frequency portion of the reverb.
HF Damp	0–100	Adjusts the high-frequency portion of the reverb.
Spread	0–127	Adjusts the reverb spread.
Tone	0–127	Adjust the tonal character of the reverb.

02 Warm Hall

Parameter	Value	Explanation
PreDelay	0.0–100.0	Adjusts the delay time from the direct sound until the reverb sound is heard.
Time	0.3–30.0 [sec]	Adjusts the decay length of the reverb sound.
Pre LPF	16–15000 [Hz], BYPASS (*1)	Frequency above which to cut the high-frequency portion of the sound entering the reverb
Pre HPF	16–15000 [Hz], BYPASS, (*2)	Frequency below which to cut the low-frequency portion of the sound entering the reverb
PreLpLPF	16–15000 [Hz], BYPASS (*1)	Frequency above which to cut the high-frequency portion of the extended reverberation
Diffusion	0–127	Adjusts the change in the density of the reverb over time.
HF Damp F	1000–8000 [Hz] (*3)	Adjusts the frequency above which to cut the high-frequency portion of the reverb.
HF Damp R	0.1–1.0	Adjusts the amount by which to attenuate the high-frequency portion of the reverb.

03 Hall

Parameter	Value	Explanation
PreDelay	0.0–100.0	Adjusts the delay time from the direct sound until the reverb sound is heard.
Time	0–127	Adjusts the decay length of the reverb sound.
Size	1–8	Size of room/hall
High Cut	160–12500 [Hz], BYPASS (*4)	Adjusts the frequency above which the high-frequency portion of the final output sound is cut (**BYPASS:** no cut)
Density	0–127	Adjusts the density of the reverb sound.
Diffusion	0–127	Adjusts how reverb density increases over time. (This effect is especially noticeable with long reverb times.)
LF Damp F	50–4000 [Hz] (*5)	Adjusts the frequency below which the low-frequency portion of the reverb sound is cut.
LF Damp G	-36–0 [dB]	LF damp attenuation amount (0: no effect)
HF DampF	4000–12500 [Hz] (*6)	Adjusts the frequency above which the high-frequency portion of the reverb sound is cut.
HF Damp G	-36–0 [dB]	HF damp attenuation amount (0: no effect)

04 GS Reverb

Parameter	Value	Explanation
Char	ROOM1, ROOM2, ROOM3, HALL1, HALL2, PLATE, DELAY, PAN-DELAY	Selects the type of reverb.
Pre LPF	0–7	Adjusts the amount of high-frequency attenuation for the sound being input to the reverb.
Time	0–127	Adjusts the decay length of the reverb sound.
Feedback	0–127	Adjusts the level at which the reverb sound is returned to the input.

05 SRV-2000

Parameter	Value	Explanation
Selection	R0.3, R1.0, R7.0, R15, R22, R26, R32, R37, H15, H22, H26, H32, H37, P-B, P-A	Selects the type of reverb offered by the Roland SRV-2000 digital reverb.
PreDelay	0–160	Adjusts the delay time from the direct sound until the reverb sound is heard.
Time	0.1–99.0 [sec]	Adjusts the decay length of the reverb sound.
HF Damp	0.05–1.00	Adjusts the high-frequency portion of the reverb.
Density	0–9	Adjusts the density of the late reverberation.
Attack Gain	0–9	Adjusts the gain of the early reflections.
Attack Time	0–9	Adjusts the time of the early reflections.
ER Density	0–9	Adjusts the density of the early reflections.
ER Level	0–99	Adjusts the volume of the early reflections.
Low Freq	0.04–1.00 [kHz]	Frequency of the low range.
Low Gain	-24–+12 [dB]	Gain of the low range.
Mid Freq	0.25–9.99 [kHz]	Frequency of the middle range.
Mid Gain	-24–+12 [dB]	Gain of the middle range.
Mid Q	0.2–9.0	Width of the middle range. Set a higher value to narrow the range to be affected.
HighFreq	0.80–9.99 [kHz]	Frequency of the high range.
HighGain	-24–+12 [dB]	Gain of the high range
High Q	0.2–9.0	Specifies the width of the high-frequency range. Set a higher value to narrow the range to be affected.

06 SRV-2000NL (NON-LINEAR)

Parameter	Value	Explanation
PreDelay	0–120	Adjusts the delay time from the direct sound until the reverb sound is heard.
ReverbTime	-0.9–+99.0 [sec]	Adjusts the decay length of the reverb sound.
GateTime	10–450	Adjusts the time from when the reverb starts being heard until the reverb sound is cut off.
Low Freq	0.04–1.00 [kHz]	Frequency of the low range.
Low Gain	-24–+12 [dB]	Gain of the low range.
Mid Freq	0.25–9.99 [kHz]	Frequency of the middle range.
Mid Gain	-24–+12 [dB]	Gain of the middle range.
Mid Q	0.2–9.0	Width of the middle range. Set a higher value to narrow the range to be affected.
HighFreq	0.80–9.99 [kHz]	Frequency of the high range.
HighGain	-24–+12 [dB]	Gain of the high range
Hi Q	0.2–9.0	Specifies the width of the high-frequency range. Set a higher value to narrow the range to be affected.

07 GM2 Reverb

Parameter	Value	Explanation
Char	SMALL ROOM, MEDIUM ROOM, LARGE ROOM, MEDIUM HALL, LARGE HALL, PLATE	Selects the type of reverb.
Time	0–127	Adjusts the decay length of the reverb sound.

08 Gate Reverb

Parameter	Value	Explanation
Type	NORMAL	This is a standard gate reverb.
	REVERSE	This is a reverb for which the sound ramps up in volume.
	SWEEP1	The reverb sound moves from right to left.
	SWEEP2	The reverb sound moves from left to right.
Pre Delay	0.0–100.0 [ms]	Adjusts the delay time from when the direct sound plays until the reverb sound is heard.
Gate Time	5–500 [ms]	Adjusts the decay length of the reverb sound.

NOTE

(*1) 16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 15000 [Hz], BYPASS

(*2) BYPASS, 16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 15000 [Hz]

(*3) 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]

(*4) 160, 200, 250, 320, 400, 500, 640, 800, 1000, 1250, 1600, 2000, 2500, 3200, 4000, 5000, 6400, 8000, 10000, 12500 [Hz], BYPASS

(*5) 50, 64, 80, 100, 125, 160, 200, 250, 320, 400, 500, 640, 800, 1000, 1250, 1600, 2000, 2500, 3200, 4000 [Hz]

(*6) 4000, 5000, 6400, 8000, 10000, 12500 [Hz]

SCENE EFFECT: OD (Overdrive)

Parameter	Value	Explanation
Drive Sw	OFF, ON	Turns overdrive on/off.
Drive	0–127	Adjusts the degree of distortion.
Cho Send Lev	0–127	Adjusts the amount of chorus. If you don't want to add the chorus effect, set it to 0.
Rev Send Lev	0–127	Adjusts the amount of reverb. If you don't want to add the reverb effect, set it to 0.
Dly Send Lev	0–127	Adjusts the amount of delay. If you don't want to add the delay effect, set it to 0.

ARP COMMON

Parameter	Value	Explanation
Type	00–65 * **Refer to "Type/ Rhythm list" (p. 12)**	Specifies the arpeggio type. **What is changed by TYPE** (1) Arpeggio pattern and part arpeggio parameters of parts 1–4 (2) Sound (tone) and part level of parts 1–4 * **For a part whose SCENE ZONE EDIT > Keyboard Sw is ON, the current sound (tone) and part level are maintained even if you change the TYPE.** * **You can use the SYSTEM > ARPEGGIO > Set Tone setting to turn on/off the function of (2).**
Rytm	00–65 * **Refer to "Type/ Rhythm list" (p. 12)**	Specifies the arpeggio's rhythm type. **What is changed by RHYTHM** (1) Arpeggio pattern and part arpeggio parameters of part R (2) Sound (drum kit) and part level of part R * **If the SCENE ZONE EDIT > Keyboard Sw is ON, the current sound (tone) and part level are maintained even if you change the RHYTHM.** * **You can use the SYSTEM > ARPEGGIO > Set Drum Kit setting to specify whether this changes (ON) or does not change (OFF).** (3) Tempo (SCENE or SYSTEM) * **You can use SYSTEM > ARPEGGIO > Set Tempo to specify whether this changes (ON) or does not change (OFF).**
G-Duration	-50–50	Specifies a global duration value that applies a relative adjustment to the duration values of each part.
G-Shuffle	0–100	Specifies the global shuffle value that applies a relative adjustment to the shuffle values of each part.
Switch	OFF, ON	Arpeggio switch. This is linked with the panel button.
Hold Sw	OFF, ON	Arpeggio hold switch. This is linked with the panel button.
Keys Sw	OFF, ON	KEYS switch for the arpeggio PLAY DETECTOR. If this is "ON," the arpeggio pitch changes according to the key you play. This is linked with the panel button.
Beat Sw	OFF, ON	BEAT switch for the arpeggio PLAY DETECTOR. If this is "ON," the arpeggio pattern changes according to the timing of your keyboard performance. This is linked with the panel button.
Detect Sens	1–10	Specifies the BEAT sensitivity of the arpeggio PLAY DETECTOR. Higher values make the pattern change more sensitively. If you're unable to reproduce the same pattern even when you're trying to play the keyboard in the same rhythm, lowering this value might help.
In Range Low In Range Up	C- –G9	Specifies the range of keys detected for arpeggio performance. Pressing a key outside the specified range will not affect the arpeggio function.

Type/Rhythm list

	Type	Rytm
00	OFF	OFF
01	UP 16th	KICK
02	DOWN 16S	KICK+HH
03	UP&DOWN TRI	KICK+CLAP
04	RANDOM 8th	LOOP
05	POLY SYNCP	LOOP-S
06	I-UP 8-16	I-BEAT[2]
07	I-NO 4-8-16	I-BEAT[3]-1
08	I-P 4-8-16R	I-BEAT[3]-2
09	I-NO SYNCP	I-BEAT[0+3]
10	I-NO FREE	I-BEAT[3]-3
11	I-ENS P3-1	I-CR78 120
12	I-ENS P3-2	I-CR78 116
13	I-ENS P3-3S	I-CR78 112S
14	I-ENS P34-1	I-90's 70
15	I-ENS P34-2	I-T808 120
16	I-ENS P34-3	I-T909 120
17	I-ENS P34-4	I-T808 120
18	I-ENS P34-5	I-T909 135
19	I-ENS P34-6	I-POP 80
20	I-ENS P34-7	I-T808 80
21	I-ENS P34-8	I-T808 131
22	I-ENS P34-9	I-CR78 112S
23	I-ENSP34-10	I-T707 124
24	I-ENSP34-11	I-ANA 122
25	I-ENSP34-12	I-CR78 109
26	I-ENSP34-13	I-T909 135S
27	I-ENSP34-14	I-CR78 118
28	I-ENSP34-15	I-ANA 118
29	I-ENSP34-16	I-T606 112
30	I-ENSP34-17	I-T808 149
31	I-ENSP34-18	I-CR78 124
32	I-ENSP34-19	I-T909 126
33	I-ENSP34-20	I-CR78 98S
34	I-ENSP34-21	I-STD 116S
35	I-ENSP34-22	I-T808 130
36	I-ENSP34-23	I-T606 135
37	I-ENSP34-24	I-CR78 160
38	I-ENSP34-25	I-ANA 130
39	I-ENSP34-26	I-CR78 152
40	I-ENSP34-27	I-T808 138
41	I-ENSP234-1	I-T808 108
42	I-ENSP234-2	I-CR78 98
43	I-ENSP234-3	I-T808 114S
44	I-ENSP234-4	I-T606 126S
45	I-ENSP34-28	I-HOUSE 120
46	I-ENSP34-29	I-HIPHOP109
47	I-ENSP234-5	I-T808 105
48	I-ENSP234-6	I-JAZZ 110
49	I-ENSP234-7	I-POWER 112
50	I-ENSP34-30	I-T909 125
51	I-DLY SYNTH	I-HIPHOP142
52	I-DLY PIANO	I-T707 123
53	I-DLY PLUCK	I-T808 120
54	I-BASS AUTO	I-T909 118
55	I-BASS DOWN	I-D&B 140
56	I-ENSP34-31	I-T626 98
57	I-ENSP34-32	I-80'S 95
58	I-ENSP34-33	I-T909 110
59	I-ENSP34-34	I-T808 172
60	I-ENSP34-35	I-T7&7 175
61	I-ENSP34-36	I-EDM 95
62	I-ENSP34-37	I-CR78 88
63	I-ENSP34-38	I-T7&7 96
64	I-ENSP34-39	I-T909 108
65	I-ENSP34-40	I-T626 105

ARP PART

Parameter	I-ARP	ARP	STEP	Value	Explanation
Switch	✓	✓	✓	OFF, ON	Specifies whether each part's arpeggio is "ON" or "OFF" when the panel arpeggio switch is ON.
Arp Mode	✓	✓	✓	I-ARP, ARP, STEP	Sets how the arpeggio operates for each part. **I-ARP:** Analyzes your keyboard performance and plays the arpeggio pattern that best matches it. **ARP:** Plays a simple arpeggio pattern. **STEP:** Plays the pattern data you created using the STEP EDIT function. Use this setting when you want to play original arpeggio phrases.
I-ARP Style (*1) * Refer to "Style List" (p. 14)	✓	-	-	000–111	Sets the style for the I-ARPEGGIO. You can select the ARP COMMON type for each part.
ARP Style (*2) * Refer to "Style List" (p. 14)	-	✓	-	1–128	Sets the arpeggio style.
Variation (*2)	-	✓	-	1–11	Sets the arpeggio style variation. The number of available variations depends on the style.
Arp Step Sw (*2)	-	✓	-	OFF, ON	Plays the arpeggio using the pattern data you created with Step Edit.
Step Key Shift (*3)	-	-	✓	OFF, ON	The pattern data created in Step Edit is played, transposed according to the notes played on the keyboard.
Motif (*4)	✓	✓	-	Specifies the order in which the notes of the chord you play are sounded as an arpeggio.	
				UP	Sounded consecutively starting at the lowest key you press.
				DOWN	Sounded consecutively starting at the highest key you press.
				UP&DOWN	Sounded consecutively from the lowest to the highest key, and then back down to the lowest.
				RANDOM	The keys you press are sounded in random order.
				NOTE ORDER	Sounded in the order in which you press the keys.
				RHYTHM	Notes are sounded as specified by the arpeggio pattern, regardless of the pitches that you play on the keyboard. This is useful when playing a rhythm pattern.
				PHRASE	The pitches specified by the arpeggio pattern are played, but shifted according to the pitches that you play. This is useful when you want to transpose the melody while the arpeggio plays.
				AUTO	When you play a chord, priority is given to starting with the lowest pitch. This is effective for a bass part.
Oct Range (*4)	✓	✓	-	-3–+3	Specifies the range of octaves in which the arpeggio is sounded. You can specify whether the arpeggio is sounded in the octave(s) above (+) or below (-) the notes you play.
Duration	✓	✓	✓	0–100 [%]	Specifies the duration that the notes of the arpeggio pattern are sounded, as a proportion of the note length. You can set this to make the arpeggiated notes sound briefly for a staccato feel, or at their full duration for a tenuto feel.
Grid					
Grid Length (*5)	✓	-	✓	2–64	Specifies the grid length for the arpeggio pattern.
Grid Note	✓	✓	✓	Specifies the note value represented by one grid of the arpeggio.	
				4th	quarter note (1 grid = 1 beat)
				8th	eighth note (2 grids = 1 beat)
				8th_3	eighth note triplet (3 grids = 1 beat)
				16th	sixteenth note (4 grids = 1 beat)
				16th_3	sixteenth note triplets (6 grids = 1 beat)
				32nd	thirty-second note (8 grids = 1 beat)
Grid Offset (*1)	✓	-	-	-63–+64	Specifies the grid position at which the arpeggio pattern starts as an amount of shift from the first grid position.
Grid Sync (*1)	✓	-	-	OFF, ON	Turn this ON if you want the arpeggio sounded for each part to be synchronized with the grid.
Probability					
Style * Refer to "Style List" (p. 14)	✓	✓	✓	OFF, 1–64	Sets an arpeggio pattern with a specified probability of playing back note messages.
Amount Auto	✓	✓	✓	OFF, ON	When this is set to "ON," your keyboard performance is analyzed and the degree of playback probability is changed automatically.
Amount	✓	✓	✓	0–100%	Sets the degree of playback probability.
Amount Dir	✓	✓	✓	Standard, Reverse	Reverses the degree of change for the Probability Amount.
Velo Amount	✓	✓	✓	0–100%	Sets the volume of notes that play back based on the Probability Style. Smaller values produce lower playback volumes, and the maximum value produces the normal volume.
Grid Offset	✓	✓	✓	-63–+64	Sets the start position of the pattern that's set in Probability Style, by using the shift amount from the start grid.
Setting					
Key Sw Sync	✓	✓	✓	OFF, ON	When this is "ON," you can turn the arpeggio for the relevant parts on/off in part select mode by using the panel button [9]–[13] keyboard switches.
Hold Sw	✓	✓	✓	OFF, ON	When the panel's arpeggio hold switch is ON, this setting specifies whether the arpeggio performance of each part is held when you release the keyboard (ON) or stops when you release the keyboard (OFF).
Transpose	✓	✓	-	-36–+36	Shifts the arpeggio notes in semitone steps.
Velocity (*)	✓	✓	-	REAL, 1–127	Specifies the velocity of the arpeggiated notes. If you want the velocity to vary according to the strength at which you actually press the key, choose (REAL). If you want the velocity to be a fixed value regardless of your actual playing dynamics, specify that value (1–127).
Offset Velo	✓	✓	✓	-127–+127	Shifts the velocity values. Use this if the velocity values are not an appropriate match with other parts.
Shuffle Rate	✓	✓	✓	0–100 [%]	Varies the timing of even-numbered beats, creating a shuffle rhythm. A setting of "50%" sounds the notes at equal timing, and increasing this value produces more of a dotted shuffle feel.

Parameter	I-ARP	ARP	STEP	Value	Explanation
Shuffle Reso	✓	✓	✓	Specifies the note resolution that is the reference for the shuffle setting.	
				16TH	Sixteen note
				8TH	Eighth note
Timing	✓	✓	✓	Specifies the timing at which the arpeggio pattern changes when the PLAY DETECTOR setting BEAT is ON.	
				IMMEDIATE	Change immediately.
				BEAT	Change at the beginning of the beat.
				MEAS	Change at the beginning of the measure.
				END	Change at the beginning of the arpeggio pattern cycle.
Note Off (*5)	✓	-	✓	Specifies when previously-sounded notes are turned off if the arpeggio pattern changes.	
				NORMAL	Sound the note length specified by the arpeggio pattern, and then turn the note off.
				IMMEDIATE	Turn off immediately.
Poly Remain (*4)	✓	✓	-	OFF, 1–127	If this is other than "OFF," the following two behaviors will be different than normal. Even if the arpeggio pattern is mono, chords played on the keyboard are limited to the specified number of notes. Even if you do not play legato, the individual notes that you play up to the specified number are remembered, and reflected by the arpeggio performance. This produces a result that feels more like keyboard playing than a conventional arpeggio performance.
K-Range Lo	✓	✓	✓	C –2–G 9	Specifies the lower pitch limit that is sounded by the arpeggio. If the arpeggio attempts to play a note that is lower than this, the octave is raised.
K-Range Oct	✓	✓	✓	OFF, 0–12	Specifies the number of higher octaves in which the arpeggio is sounded, relative to K-Range Lo. If the arpeggio attempts to play a note that is higher than this range, the octave is lowered.
Reset Oct (*1)	✓	-	-	OFF, ON	If this is "ON," when the arpeggio returns to the start grid, it plays from the octave that you pressed, regardless of the Oct Range setting.
Duck Part	✓	✓	✓	OFF, PART 1–PART 4, PART R	Velocity duck This temporarily lowers the velocity of a specific note of a specific part when an arpeggio note coincides at the same timing. You can use this to prevent the volume from being excessive when notes overlap, or in a way similar to how a side-chain compressor effect can lower the volume of other instruments at the timing of the kick drum, so that a sense of musical groove is created. **Duck Part:** Enter the part to which the effect applies. For example, to specify the rhythm part, set this to "PART R." If this is "OFF," velocity duck does not occur. **Duck Note:** Specifies the note of the Duck Part sound that is the target. For example, if you want to target the kick drum, specify "C2." If you specify "Any," all notes of that part are the target. **Duck Rate:** Specifies the proportion by which Velocity Duck lowers the velocity value. Higher values produce a greater ducking effect, so that with a setting of "100" there will be no sound at that timing (maximum velocity duck effect). With a setting of "0" there will be no velocity ducking.
Duck Note	✓	✓	✓	Any, C –2–G 9	
Duck Rate	✓	✓	✓	0–100	

(*1) This is shown only if Arp Mode is set to "I-ARP."
(*2) This is shown only if Arp Mode is set to "ARP."
(*3) This is shown only if Arp Mode is set to "STEP."
(*4) This is shown only if Arp Mode is set to "I-ARP" and "ARP."
(*5) This is shown only if Arp Mode is set to "I-ARP" and "STEP."

Style List

	I-ARP Style	ARP Style	Probability Style
000	CURRENT TYPE	-	-
001	TYPE1 PART1	SIMPLE	EIGHT1
002	TYPE5 PART1	1/8BASIC1	EIGHT2
003	TYPE6 PART1	1/8BASIC2	QUARTER1
004	TYPE7 PART1	1/8BASIC3	QUARTER2
005	TYPE8 PART1	1/8BASIC4	HALF1
006	TYPE9 PART1	1/8BASIC5	HALF2
007	TYPE10 PART1	1/8SYNC11	HALF3
008	TYPE11 PART3	1/8SYNC12	HALF4
009	TYPE11 PART4	1/8SYNC13	HALF5
010	TYPE12 PART3	1/8SYNC14	SHORT1
011	TYPE12 PART4	1/8SYNC15	SHORT2
012	TYPE13 PART3	1/8SYNC21	SHORT3
013	TYPE13 PART4	1/8SYNC22	DOUBLE
014	TYPE14 PART3	1/8SYNC23	1MEAS1
015	TYPE14 PART4	1/8SYNC24	1MEAS2
016	TYPE15 PART3	1/8SYNC25	1MEAS3
017	TYPE15 PART4	1/8DRIVE1	1MEAS4
018	TYPE16 PART3	1/8DRIVE2	1MEAS5
019	TYPE16 PART4	1/8DRIVE3	1MEAS6
020	TYPE17 PART3	1/8DRIVE4	1MEAS7
021	TYPE17 PART4	1/8DRIVE5	1MEAS8
022	TYPE18 PART3	1/8VARI1	1MEAS9

	I-ARP Style	ARP Style	Probability Style
023	TYPE18 PART4	1/8VARI2	1MEAS10
024	TYPE19 PART3	1/8VARI3	1MEAS11
025	TYPE19 PART4	1/8VARI4	1MEAS12
026	TYPE20 PART3	1/8VARI5	1MEAS13
027	TYPE20 PART4	1/16BASC1	1MEAS14
028	TYPE21 PART3	1/16BASC2	1MEAS15
029	TYPE22 PART3	1/16BASC3	1MEAS16
030	TYPE22 PART4	1/16BASC4	1MEAS17
031	TYPE23 PART3	1/16BASC5	1MEAS18
032	TYPE23 PART4	1/16SYN11	1MEAS19
033	TYPE24 PART3	1/16SYN12	1MEAS20
034	TYPE24 PART4	1/16SYN13	2MEAS1
035	TYPE25 PART3	1/16SYN14	2MEAS2
036	TYPE25 PART4	1/16SYN15	2MEAS3
037	TYPE26 PART3	1/16SYN21	2MEAS4
038	TYPE26 PART4	1/16SYN22	2MEAS5
039	TYPE27 PART3	1/16SYN23	2MEAS6
040	TYPE27 PART4	1/16SYN24	2MEAS7
041	TYPE28 PART3	1/16SYN25	2MEAS8
042	TYPE28 PART4	1/16DRVE1	2MEAS9
043	TYPE29 PART3	1/16DRVE2	2MEAS10
044	TYPE29 PART4	1/16DRVE3	2MEAS11
045	TYPE30 PART3	1/16DRVE4	2MEAS12

	I-ARP Style	ARP Style	Probability Style
046	TYPE30 PART4	1/16DRVE5	2MEAS13
047	TYPE31 PART3	RHYTHM X1	2MEAS14
048	TYPE31 PART4	RHYTHM X2	2MEAS15
049	TYPE32 PART3	RHYTHM X3	2MEAS16
050	TYPE32 PART4	RHYTHM X4	2MEAS17
051	TYPE33 PART3	RHYTHM X5	2MEAS18
052	TYPE33 PART4	RHYTHM X6	2MEAS19
053	TYPE34 PART3	RHYTHM X7	FEW1
054	TYPE34 PART4	RHYTHM X8	FEW2
055	TYPE35 PART3	CYCLES3RD	FEW3
056	TYPE35 PART4	CYCLES4TH	FEW4
057	TYPE36 PART3	CYCLES5TH	FEW5
058	TYPE36 PART4	CYCLESMAJ	FEW6
059	TYPE37 PART3	CYCLESMIN	VARI1
060	TYPE37 PART4	CYCMAJ/MN	VARI2
061	TYPE38 PART3	AG PROGR1	VARI3
062	TYPE38 PART4	AG PROGR2	VARI4
063	TYPE39 PART3	AG CUTTIN	VARI5
064	TYPE39 PART4	AG 3FINGR	VARI6
065	TYPE40 PART3	AG ARPEGG	
066	TYPE40 PART4	AG SPANS1	
067	TYPE41 PART2	AG SPANS2	
068	TYPE41 PART3	AG RIFFS	
069	TYPE41 PART4	EG CUTTIN	
070	TYPE42 PART2	EG RIFFS	
071	TYPE42 PART3	EG ODRIF1	
072	TYPE42 PART4	EG ODRIF2	
073	TYPE43 PART2	EG ARPEGG	
074	TYPE43 PART3	BLUES GTR	
075	TYPE43 PART4	GTR TRILL	
076	TYPE44 PART4	BASS PHR	
077	TYPE45 PART3	BS SHUFFL	
078	TYPE45 PART4	FRETLESBS	
079	TYPE46 PART3	WALKINGBS	
080	TYPE46 PART4	BALLADBAS	
081	TYPE47 PART2	EP PROGR1	
082	TYPE47 PART3	EP PROGR2	
083	TYPE47 PART4	LTN PIANO	
084	TYPE48 PART2	FUNKCLAV1	
085	TYPE48 PART3	FUNKCLAV2	
086	TYPE48 PART4	SYNTHLEAD	
087	TYPE49 PART2	DANCE SYN	
088	TYPE49 PART3	HARP	
089	TYPE49 PART4	SYN BASS1	
090	TYPE50 PART3	SYN BASS2	
091	TYPE50 PART4	SYN BASS3	
092	TYPE56 PART3	SYN LINE1	
093	TYPE56 PART4	SYN LINE2	
094	TYPE57 PART3	SYN LINE3	
095	TYPE57 PART4	LEADLINE1	
096	TYPE58 PART3	LEADLINE2	
097	TYPE58 PART4	LEADLINE3	
098	TYPE59 PART3	SEQUENCE1	
099	TYPE59 PART4	SEQUENCE2	
100	TYPE60 PART3	SEQUENCE3	
101	TYPE60 PART4	CHORDS 1	
102	TYPE61 PART3	CHORDS 2	
103	TYPE61 PART4	CHORDS 3	
104	TYPE62 PART3	SHORTIES1	
105	TYPE62 PART4	SHORTIES2	
106	TYPE63 PART3	SHORTIES3	
107	TYPE63 PART4	FATTIES 1	
108	TYPE64 PART3	FATTIES 2	
109	TYPE64 PART4	FATTIES 3	
110	TYPE65 PART3	SHRT&FAT1	
111	TYPE65 PART4	SHRT&FAT2	
112		FAT&SHRT1	
113		FAT&SHRT2	
114		MIXTURE 1	
115		MIXTURE 2	
116		MIXTURE 3	
117		COMBINAT1	
118		COMBINAT2	
119		COMBINAT3	
120		COMBINAT4	
121		COMBINAT5	
122		COMBINAT6	
123		COMBINAT7	
124		COMBINAT8	
125		PLEXI 1	
126		PLEXI 2	
127		PLEXI 3	
128		PLEXI 4	

Tone Parameters

TONE COMMON Parameters

* **You can set whether control change messages (CC) are transmitted/received using the "Tone CC Map" system parameter.**

TONE COMMON
JUPITER-8, JUNO-106, JX-8P, SH-101

Parameter	Value	Explanation
Catg	CATEGORY	Selects the tone's category.

TONE COMMON
VOCODER

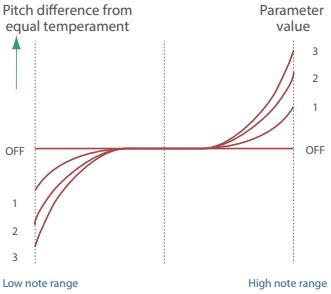
There are no displayed parameters.

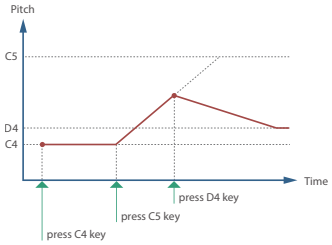
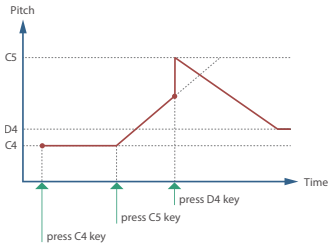
TONE COMMON
PR-A DRUM, CMN DRUM

There are no displayed parameters.

TONE COMMON
RD-PIANO, XV-5080, PR-A, PR-B, PD-C, PR-D, COMMON, PR-X

Parameter	Value	Explanation	CC#
Catg	CATEGORY	Selects the tone's category.	
Level	0–127	Adjusts the overall volume of the tone.	110
Pan	L64–63R	Specifies the pan of the tone. "L64" is far left, "0" is center, and "63R" is far right.	
Priority	This determines how notes will be managed when the maximum polyphony is exceeded.		
	LAST	The last-played voices will be given priority, and currently sounding notes will be turned off in order, beginning with the first-played note.	
	LOUDEST	The voices with the loudest volume will be given priority, and currently sounding notes will be turned off, beginning with the lowest-volume voice.	
Coarse Tune	-48–+48	Adjusts the pitch of the sound up or down in semitone steps (+/-4 octaves).	
Fine Tune	-50–+50	Adjusts the pitch of the sound up or down in 1-cent steps (+/-50 cents).	
Octave	-3–+3	Adjusts the pitch of the tone's sound up or down in units of an octave (+/-3 octaves).	

Parameter	Value	Explanation	CC#
Stretch	OFF, 1–3	This setting allows you to apply "stretched tuning" to the tone. (Stretched tuning is a system by which acoustic pianos are normally tuned, causing the lower range to be lower and the higher range to be higher than the mathematical tuning ratios would otherwise dictate.) With a setting of "OFF," the tone's tuning will be equal temperament. A setting of "3" will produce the greatest difference in the pitch of the low and high ranges. The diagram shows the pitch change relative to equal temperament that will occur in the low and high ranges. This setting will have a subtle effect on the way in which chords resonate. 	
Analog Feel	0–127	Applies time-varying change to the pitch and volume of the tone that is producing sound, adding a sense of variability. As you increase this value toward the maximum, the variability becomes greater, producing instability.	
Mono Poly	Specifies whether the tone will play polyphonically (POLY) or monophonically (MONO).		115
	MONO	Sound only the last-played key one at a time.	
	POLY	Two or more notes can be played simultaneously.	
Unison Sw	OFF, ON	This layers a single sound. If the Unison Switch is on, the number of notes layered on one key will change according to the number of keys you play. • If the OSC Type is PCM, this is limited to mono playing. • If the Legato Sw is on, the Delay Time is ignored while playing legato. • Even if Retrig Intvl (Legato Retrigger Interval) is specified, it operates as OFF.	119
Unison Size	2–8	If unison is on, this specifies the number of notes that are assigned to each key that is pressed. Increasing the Unison Size increases the polyphony, making it more likely that notes will be cut off.	
Unison Detn	0–100	Detunes each of the notes that are allocated by the Unison Size number, producing a detuned effect. As you increase this value, each note is detuned more greatly, producing a thicker sound.	
Legato Sw	OFF, ON	This is effective when MONO/POLY is set to MONO and Legato Switch is turned ON. When you press the next key while still holding down the previous key (legato performance), the pitch changes smoothly. The way in which the change occurs depends on the Legato Retrigger Interval.	116
Retrig Intvl (Legato Retrigger Interval)	0–12, OFF	When Legato Switch is enabled and you play legato, this specifies whether retriggering occurs (0–12) or does not occur (OFF). If this is off, only the pitch of the currently-sounding tones changes according to the pitch of the key. If this is set to 1–12, retriggering occurs smoothly when the pitch difference during legato performance exceeds the specified value. For example, if this is set to 4, and using C4 as the reference pitch, playing notes Db4–E4 legato will change only the pitch without retriggering, but playing the F4 note (which is five semitones away from C4) legato will retrigger F4. When F4 is retriggered at this time, F4 now becomes the reference pitch. If this is set to 0, each note is retriggered every time regardless of the pitch difference. For acoustic-type sounds in particular, an unnatural impression can occur if only the pitch is changed, so you'll need to adjust the Legato Retrigger Interval.	

Parameter	Value	Explanation	CC#
Porta Sw	OFF, ON	Specifies whether the portamento effect will be applied (ON) or not applied (OFF). * **Portamento is an effect which smoothly changes the pitch from the first-played key to the next-played key. By applying portamento when the MONO/POLY parameter is "MONO," you can simulate slide performance techniques on a violin or similar instrument.**	
Porta Mode	Specifies the performance conditions for which portamento will be applied.		
	NORMAL	Portamento will always be applied.	
	LEGATO	Applies portamento only when you play legato (i.e., when you press the next key before releasing the previous key).	
Porta Type	Specifies the type of portamento effect.		
	RATE	The time it takes will depend on the distance between the two pitches.	
	TIME	The time it takes will be constant.	
Porta Start	When another key is pressed during a pitch change produced by portamento, a new pitch change will begin. This setting specifies the pitch at which the change will begin.		
	Pitch	Starts a new portamento when another key is pressed while the pitch is changing. 	
	NOTE	Portamento will begin from the pitch where the current change would end. 	
Porta Time	0–1023	When portamento is used, this specifies the time over which the pitch will change. Higher settings will cause the pitch change to the next note to take more time.	5
Porta Crv	Specifies the pitch change curve for portamento.		
	LIN	Change on a linear curve.	
	EXP-L	Change on a non-linear curve (gentle slope).	
	EXP-H	Change on a non-linear curve (steep slope).	
BendRange Up	0–48	Specifies the amount of change in semitone units when the pitch bend wheel is turned all the way upward. For example, if this is "48," turning the pitch bend wheel all the way upward raises the pitch by four octaves.	41
BendRange Dw	0–48	Specifies the amount of change in semitone units when the pitch bend wheel is turned all the way downward. For example, if this is "48," turning the pitch bend wheel all the way downward lowers the pitch by four octaves.	49
BendRngFine Up	0–100	Specifies a fine adjustment in one-cent units to the amount of change when the pitch bend wheel is turned upward.	
BendRngFine Dw	0–100	Specifies a fine adjustment in one-cent units to the amount of change when the pitch bend wheel is turned downward.	
BendMode	NORMAL	The pitch bend wheel produces the usual effect.	
	CATCH+LAST	The pitch bend effect applies only to the last-played note. If a note-on occurs while pitch bend is already applied, the new note sounds at the center pitch. The pitch starts changing only after the controller passes through the center position.	

Parameter	Value	Explanation	CC#
Soft Lv Sens	0–100	Specifies the amount of volume change that occurs when you operate the soft pedal (CC#67). This is effective when specified for piano sounds.	

Parameter	Value	Explanation	CC#
Keyboard			
Vel Ctrl	OFF, ON, RANDOM, CYCLE	Specifies how partials are played according to your keyboard playing dynamics (velocity). If this is "ON," different partials are sounded according to the playing velocity and the Velo Rng Low/Upp and Velo FadeLow/Upp settings. • If this is "RANDOM" or "CYCLE," each partial is sounded randomly or cyclically. • In the case of "RANDOM" or "CYCLE" when Structure 1-2 (3-4) has a setting other than OFF, partials 1 and 2 (3 and 4) are sounded as a pair, either randomly or in alternation. • In the case of "RANDOM" or "CYCLE," velocity has no effect, but you'll need to make settings for each partial so that the Velocity Range does not conflict.	
Level Crv	EXP	When using Vel Ctrl to switch between partials, the crossfade level changes in a non-linear curve.	
	LINEAR	When using Vel Ctrl to switch between partials, the crossfade level changes in a linear curve.	

Parameter	Value	Explanation	CC#
Structure			
Struct12	The sound of partial 1 is modulated by partial 2.		
	OFF	OFF	
	SYNC	Implements the oscillator sync function that is provided by an analog synthesizer. The partial 1 oscillator is reset at intervals of partial 2's pitch cycle. This is effective only if OSC Type is VA or PCM-Sync.	
	RING	Implements the ring modulator function that is provided by an analog synthesizer. The output sound of partial 2 is multiplied with partial 1.	
	XMOD, XMOD2	Implements the cross modulation function that is provided by an analog synthesizer. The output sound of partial 2 is applied as the pitch of partial 1. XMOD2 is available only when Partial 1 and 3 are OSC Type "VA."	
Struct34	The sound of partial 3 is modulated by partial 4.		
	OFF	OFF	
	SYNC	Implements the oscillator sync function that is provided by an analog synthesizer. The partial 3 oscillator is reset at intervals of partial 4's pitch cycle. This is effective only if OSC Type is VA or PCM-Sync.	
	RING	Implements the ring modulator function that is provided by an analog synthesizer. The output sound of partial 4 is multiplied with partial 3.	
	XMOD, XMOD2	Implements the cross modulation function that is provided by an analog synthesizer. The output sound of partial 4 is applied as the pitch of partial 3. XMOD2 is available only when Partial 1 and 3 are OSC Type "VA."	
Ring12 Level	0–127	RING level when Structure1-2 is RING.	
Ring34 Level	0–127	RING level when Structure3-4 is RING.	
Ring OSC1 Lv	0–127	Effective when Structure1-2 is RING. Sets the partial 1 OSC level.	
Ring OSC2 Lv	0–127	Effective when Structure1-2 is RING. Sets the partial 2 OSC level.	
Ring OSC3 Lv	0–127	Effective when Structure3-4 is RING. Sets the partial 3 OSC level.	
Ring OSC4 Lv	0–127	Effective when Structure3-4 is RING. Sets the partial 4 OSC level.	
XMd12 Dpth	0–10800	Cross Modulation Depth when Structure1-2 is XMOD.	
XMd34 Dpth	0–10800	Cross Modulation Depth when Structure3-4 is XMOD.	
XMd2 12 Dpth	0–127	Cross Modulation Depth when Structure1-2 is XMOD2.	
XMd2 34 Dpth	0–127	Cross Modulation Depth when Structure3-4 is XMOD2.	
XMd OSC1 Lv	0–127	Effective when Structure1-2 is XMOD/XMOD2. Sets the partial 1 OSC level.	
XMd OSC2 Lv	0–127	Effective when Structure1-2 is XMOD/XMOD2. Sets the partial 2 OSC level.	
XMd OSC3 Lv	0–127	Effective when Structure3-4 is XMOD/XMOD2. Sets the partial 3 OSC level.	
XMd OSC4 Lv	0–127	Effective when Structure3-4 is XMOD/XMOD2. Sets the partial 4 OSC level.	
Ptl Phs Lock	OFF, ON	This is available if OSC Type is "VA"; it locks the waveform phase between partials. It is effective to use this with XMOD2.	

TONE Parameters

TONE
JUPITER-8

Parameter	Value	Explanation	CC#
LFO RATE	0–1023	Specifies the rate of the LFO cycle.	29
LFO DELAY TIME	0–1023	Adjusts the time from when the key is pressed until the LFO starts to apply modulation.	27
LFO WAVEFORM	SINE, SAW-DW, SQR, S&H	Selects the waveform of the LFO.	
LFO MOD	0–100	Adjusts the depth at which the LFO modulates the OSC.	26
PIT ENV DEPTH	-100–+100	Adjusts the depth at which the LFO modulates the ENV1.	22
DEST SELECT	OSC1, BOTH, OSC2	Selects the OSC that is modulated by LFO MOD.	
PULSE WIDTH MOD	0–127	PW MODE = MANUAL: Adjusts the pulse width. PW MODE = LFO/ENV: Adjusts the modulation depth.	50
PW MODE	Specifies the pulse width mode.		
	LFO	The pulse width is changed by the LFO.	
	MANUAL	The pulse width is changed by PULSE WIDTH MOD.	
	ENV	The pulse width is changed by the ENV1.	
CROSS MOD	0–10800	Uses the OSC2 waveform to change the frequency of OSC1. Higher values cause the sound of OSC1 to be more complex, allowing you to create metallic sounds or sound effects.	
OSC1 RANGE	16', 8', 4', 2'	Specifies the octave of OSC1.	47
OSC1 WAVEFORM	TRI, SAW, PW, SQR	Selects the waveform that is the basis of the OSC1 sound.	
SYNC SWITCH	OFF, ON	This is oscillator sync. It produces a complex waveform by forcibly resetting OSC1 to the beginning of its cycle in synchronization with the cycle of OSC2.	
OSC2 MODE	NORMAL, LOW FREQ	Selects whether OSC2 operates as NORMAL (in the audible frequency range) or as LFO (in the low frequency range).	111
LOW FREQ	0–127	Specifies the octave when OSC2 MODE is set to LOW FREQ.	
OSC2 RANGE	-12–+24	Specifies the octave of OSC2.	62
OSC2 FINE TUNE	-50–+50	Specifies a fine adjustment to the pitch of OSC2.	56
OSC2 WAVEFORM	SINE, SAW, PW, NOISE	Selects the waveform that is the basis of the OSC2 sound.	
OSC1 LEVEL	0–255	Adjusts the volume balance of OSC1.	16
OSC2 LEVEL	0–255	Adjusts the volume balance of OSC2.	17
HPF	0–1023	Adjusts the cutoff frequency of the high-pass filter.	79
VINTAGE FLT TYPE	JP, M, S	Selects one of three response curves, each modeling the LPF of an analog synthesizer of the past.	108
CUTOFF	0–1023	Specifies the cutoff frequency of the low-pass filter. The frequency region above the cutoff frequency is cut, producing a more mellow tonal character.	3
RESONANCE	0–1023	Boosts the region of the filter's cutoff frequency. Higher values produce a stronger result, giving the sound a distinctively synthesizer-like character.	9
FILTER SLOPE	-12dB, -24dB	Selects the type of slope for the low-pass filter.	

Parameter	Value	Explanation	CC#
FLT ENV DEPTH	-1023–+1023	Adjusts the amount by which the cutoff frequency is controlled by the envelope.	81
FLT ENV MODE	ENV1, ENV2	Selects the envelope that is used to control the cutoff frequency.	
FILTER MOD	0–100	Adjusts the amount by which the LFO modulates the cutoff frequency.	28
FLT KEY FOLLOW	0–200	Adjusts the amount by which the keyboard pitch affects the cutoff frequency (key follow). With smaller values, the cutoff frequency becomes lower as you play higher notes.	82
AMP LEVEL	0–127	Adjusts the volume of the tone.	110
AMP MOD-STEP	0–3	Uses the LFO to vary the AMP volume (tremolo effect). Higher values produce a greater effect.	30
ENV1 ATTACK	0–1023	Specifies the ENV1 Attack time.	83
ENV1 DECAY	0–1023	Specifies the ENV1 Decay time.	80
ENV1 SUSTAIN	0–1023	Specifies the ENV1 Sustain level.	85
ENV1 RELEASE	0–1023	Specifies the ENV1 Release time.	86
ENV1 KEY FLW SW	OFF, ON, INV	Specifies the ENV1 key follow. If key follow is on, ADR times become longer for lower notes and shorter for higher notes. With the INV setting, lower notes produce shorter ADR times, and higher notes produce longer ADR times.	
ENV2 ATTACK	0–1023	Specifies the ENV2 Attack time.	89
ENV2 DECAY	0–1023	Specifies the ENV2 Decay time.	90
ENV2 SUSTAIN	0–1023	Specifies the ENV2 Sustain level.	102
ENV2 RELEASE	0–1023	Specifies the ENV2 Release time.	103
ENV2 KEY FLW SW	OFF, ON	Specifies the ENV2 key follow. If key follow is on, ADR times become longer for lower notes and shorter for higher notes.	
BEND PITCH	0–1200	Specifies the range of pitch change produced by pitch bend.	41
BEND FILTER	-63–+63	Specifies the range of filter change produced by pitch bend.	14
MODULATION LFO	-63–+63	Specifies the amount of LFO applied by modulation.	
PORTA MODE	OFF, ON	Turns portamento on/off. If this is on, the pitch will change smoothly from one note to the next-played note.	118
PORTA TIME	0–1023	Adjusts the time over which the portamento pitch change occurs.	5
PORTA CRV	Specifies the pitch change curve for portamento.		
	ORIGINAL	Change according to the original curve of the model.	
	LINEAR	Change in a linear curve.	
	EXP1	Change in a non-linear curve (gentle slope).	
	EXP2	Change in a non-linear curve (steep slope).	
KEY MODE	Specifies how notes are sounded.		119
	POLY	Polyphonic	
	SOLO	Monophonic	
	UNISON	Unison	
	SL-UNISON	Monophonic unison	
AFT LFO	-63–+63	Sets how much aftertouch changes the LFO intensity (this is only enabled for products with aftertouch).	
AFT FREQ	-63–+63	Sets how much aftertouch changes the low-pass filter intensity (this is only enabled for keyboards with aftertouch).	
AFT LEVEL	-63–+63	Sets how much aftertouch changes the tone volume (this is only enabled for keyboards with aftertouch).	
PITCH DRIFT	0–255	Adjusts the slight pitch drift that occurs when notes are played on an analog synthesizer.	
PARAM EXPANSION	OFF, ON	If this is ON, the range of change for LFO RATE, CUTOFF, RESONANCE, and FILTER ENV DEPTH is wider than on the original model.	
CONDITION	0–100	Simulates the changes that occur as a unit ages.	

TONE
JUNO-106

Parameter	Value	Explanation	CC#
LFO RATE	0–1023	Specifies the speed of the LFO cycle.	29
LFO DELAY TIME	0–1023	Adjusts the time from when the key is pressed until LFO modulation starts to apply.	27
OSC RANGE	16′, 8′, 4′	Specifies the octave of the oscillator.	
OSC LFO MOD	0–100	Uses the LFO to vary the pitch (vibrato).	26
PULSE WIDTH MOD	0–127	PM MODE = LFO: Adjusts the modulation depth.	50
		PM MODE = MANUAL: Adjusts the pulse width.	
PW MODE	LFO, MANUAL	Selects whether the pulse width is modulated by the LFO (LFO) or kept at the fixed value specified by PULSE WIDTH MOD (MANUAL).	
PW SWITCH	OFF, ON	Turns the pulse wave on/off.	
SAW SWITCH	OFF, ON	Turns the sawtooth wave on/off.	
SUB LEVEL	0–255	Adjusts the volume of the sub oscillator.	18
NOISE LEVEL	0–255	Adjusts the volume of the noise.	19
HPF-STEP	0–3	Sets the high-pass filter's cutoff frequency in four steps.	
VINTAGE FLT TYPE	R, M, S	Selects one of three response curves, each modeling the LPF of an analog synthesizer of the past.	108
CUTOFF	0–1023	Specifies the cutoff frequency of the low-pass filter. The frequency region above the cutoff frequency is cut, producing a more mellow tonal character.	3
RESONANCE	0–1023	Boosts the region of the filter's cutoff frequency. Higher values produce a stronger result, giving the sound a distinctively synthesizer-like character.	9
FLT ENV DEPTH	-1023–+1023	Adjusts the amount by which the cutoff frequency is controlled by the envelope.	81
FILTER MOD	0 - 100	Adjusts the amount by which the LFO modulates the cutoff frequency.	28
FLT KEY FOLLOW	0 - 200	Adjusts the amount by which the keyboard pitch affects the cutoff frequency (key follow). With smaller values, the cutoff frequency becomes lower as you play higher notes.	82
AMP ENV SEL	ENV F&A, G-AMP	Specifies whether the volume is controlled by the ENV (ENV F&A) or by the gate signal (G-AMP).	
AMP LEVEL	0–127	Adjusts the volume of the tone.	110
ENV ATTACK	0–1023	Specifies the ENV Attack time.	89
ENV DECAY	0–1023	Specifies the ENV Decay time.	90
ENV SUSTAIN	0–1023	Specifies the ENV Sustain level.	102
ENV RELEASE	0–1023	Specifies the ENV Release time.	103
BEND PITCH	0–1200	Specifies the range of pitch change produced by pitch bend.	41
BEND FILTER	-63–+63	Specifies the range of filter change produced by pitch bend.	14
MODULATION LFO	-63–+63	Specifies the amount of LFO applied by modulation.	
PORTA MODE	OFF, ON	Turns portamento on/off. If this is on, the pitch will change smoothly from one note to the next-played note.	118
PORTA TIME	0–1023	Adjusts the time over which the portamento pitch change occurs.	5
PORTA CRV	Specifies the pitch change curve for portamento.		
	ORIGINAL	Change according to the original curve of the model.	
	LINEAR	Change in a linear curve.	
	EXP1	Change in a non-linear curve (gentle slope).	
	EXP2	Change in a non-linear curve (steep slope).	
KEY MODE	Specifies how notes are sounded.		119
	POLY	Polyphonic	
	SOLO	Monophonic	
	UNISON	Unison	
	SL-UNISON	Monophonic unison	
AFT LFO	-63–+63	Sets how much aftertouch changes the LFO intensity (this is only enabled for products with aftertouch).	
AFT FREQ	-63–+63	Sets how much aftertouch changes the low-pass filter intensity (this is only enabled for keyboards with aftertouch).	
AFT LEVEL	-63–+63	Sets how much aftertouch changes the tone volume (this is only enabled for keyboards with aftertouch).	
PITCH DRIFT	0–255	Adjusts the slight pitch drift that occurs when notes are played on an analog synthesizer.	
PARAM EXPANSION	OFF, ON	If this is ON, the range of change for LFO RATE, CUTOFF, RESONANCE, and FILTER ENV DEPTH is wider than on the original model.	
CONDITION	0–100	Simulates the changes that occur as a unit ages.	

TONE
JX-8P

Parameter	Value	Explanation	CC#
OSC1 RANGE	16′, 8′, 4′, 2′	Specifies the octave of OSC1.	47
OSC1 WAVEFORM	SAW, PULSE, SQR, NOISE	Specifies the waveform that is the basis of the OSC1 sound.	
OSC1 TUNE	-12–+12	Adjusts the OSC1 pitch.	20
OSC1 LFO MOD	0–100	Adjusts the depth to which LFO modulates OSC1.	26
OSC1 PIT ENV	-100–+100	Adjusts the depth to which the ENV specified by OSC ENV MODE affects the OSC1 pitch envelope.	22
OSC2 RANGE	16′, 8′, 4′, 2′	Specifies the OSC2 octave.	62
OSC2 WAVEFORM	SAW, PULSE, SQR, NOISE	Selects the waveform that is the basis of the OSC2 sound.	
OSC2 MOD MODE	OFF, SYNC, X-MOD	Selects the MOD MODE type (OFF, SYNC, X-MOD).	
OSC2 TUNE	-12–+12	Adjusts the OSC2 pitch.	87
OSC2 FINE TUNE	-50–+50	Finely adjusts the OSC2 pitch.	56
OSC2 LFO MOD	0–100	Adjusts the depth to which the LFO modulates OSC2.	
OSC2 PIT ENV	-100–+100	Adjusts the depth to which the ENV specified by OSC ENV MODE affects the OSC2 pitch envelope.	
PITCH DYNAMICS	0–3	Adjusts the sensitivity at which the velocity controls the depth of the pitch envelope.	
OSC ENV MODE	ENV1, ENV2	Selects the envelope that is used to control the OSC.	
OSC1 LEVEL	0–255	Adjusts the OSC1 volume balance.	16
OSC2 LEVEL	0–255	Adjusts the OSC2 volume balance.	17
MIXER ENV DEPTH	0–63	Adjusts the depth to which the envelope specified by MIXER ENV MODE controls the OSC2 level.	
MIXER DYNAMICS	0–3	Adjusts the sensitivity at which the velocity controls the depth of MIXER ENV.	
MIXER ENV MODE	ENV1, ENV2	Selects the envelope that is used as MIXER ENV.	
HPF-STEP	0–3	Sets the cutoff frequency of the high-pass filter in four steps.	

Parameter	Value	Explanation	CC#
VINTAGE FLT TYPE	R, M, S	Selects one of three response curves, each modeling the LPF of an analog synthesizer of the past.	108
CUTOFF	0–1023	Specifies the cutoff frequency of the low-pass filter. The frequency region above the cutoff frequency is cut, producing a more mellow tonal character.	3
RESONANCE	0–1023	Boosts the region of the filter's cutoff frequency. Higher values produce a stronger result, giving the sound a distinctively synthesizer-like character.	9
FILTER MOD	0–100	Adjusts the amount by which the LFO modulates the cutoff frequency.	28
FLT ENV DEPTH	-1023–+1023	Adjusts the amount by which the envelope selected by FLT ENV MODE controls the cutoff frequency.	81
FLT KEY FOLLOW	0–200	Adjusts the amount by which the keyboard pitch affects the cutoff frequency (key follow). With smaller values, the cutoff frequency becomes lower as you play higher notes.	82
FILTER DYNAMICS	0–3	Adjusts the sensitivity at which velocity controls the depth of FILT ENV DEPTH.	
FLT ENV MODE	ENV1, ENV2	Selects the envelope that is used to control FILTER.	
AMP LEVEL	0–127	Adjusts the volume of the tone.	110
AMP ENV SEL	ENV2, G-ENV2	Selects whether the volume is controlled by ENV2 (ENV2) or stays at a fixed volume as long as the key is held down (G-ENV2).	
AMP DYNAMICS	0–3	Adjusts the sensitivity at which velocity controls the AMP ENV depth.	
LFO WAVEFORM	SINE, SQR, S&H	Specifies the LFO waveform.	
LFO RATE	0–1023	Specifies the rate of the LFO cycle.	29
LFO DELAY TIME	0–1023	Adjusts the time from when a key is pressed until LFO modulation starts being applied.	27
ENV1 ATTACK	0–1023	Specifies the ENV1 Attack time.	83
ENV1 DECAY	0–1023	Specifies the ENV1 Decay time.	80
ENV1 SUSTAIN	0–1023	Specifies the ENV1 Sustain level.	85
ENV1 RELEASE	0–1023	Specifies the ENV1 Release time.	86
ENV1 KEY FOLLOW-S	0–3	Specifies the ENV1 key follow in four levels. With higher values, ADR times become longer as you play lower on the keyboard, and shorter as you play higher.	
ENV2 ATTACK	0–1023	Specifies the ENV2 Attack time.	89
ENV2 DECAY	0–1023	Specifies the ENV2 Decay time.	90
ENV2 SUSTAIN	0–1023	Specifies the ENV2 Sustain level.	102
ENV2 RELEASE	0–1023	Specifies the ENV2 Release time.	103
ENV2 KEY FOLLOW-S	0–3	Specifies the ENV1 key follow in four levels. With higher values, ADR times become longer as you play lower on the keyboard, and shorter as you play higher.	
BEND PITCH-STEP	2, 3, 4, 7	Specifies the range of pitch change produced by pitch bend in four levels: 2, 3, 4, or 7 semitones.	49
MODULATION LFO	-63–+63	Adjusts the depth of modulation.	
PORTA MODE	OFF, ON	Turns portamento on/off. If this is on, the pitch will change smoothly from one note to the next-played note.	118
PORTA TIME	0–1023	Adjusts the time over which the portamento pitch change occurs.	5
PORTA CRV	Specifies the pitch change curve for portamento.		
	ORIGINAL	Change according to the original curve of the model.	
	LINEAR	Change in a linear curve.	
	EXP1	Change in a non-linear curve (gentle slope).	
	EXP2	Change in a non-linear curve (steep slope).	
KEY MODE	Specifies how notes are sounded.		119
	POLY	Polyphonic	
	SOLO	Monophonic	
	UNISON	Unison	
	SL-UNISON	Monophonic unison	

Parameter	Value	Explanation	CC#
AFT LFO	-63–+63	Sets how much aftertouch changes the LFO intensity (this is only enabled for products with aftertouch).	
AFT FREQ	-63–+63	Sets how much aftertouch changes the low-pass filter intensity (this is only enabled for keyboards with aftertouch).	
AFT LEVEL	-63–+63	Sets how much aftertouch changes the tone volume (this is only enabled for keyboards with aftertouch).	
PITCH DRIFT	0–255	Adjusts the slight pitch drift that occurs when notes are played on an analog synthesizer.	
PARAM EXPANSION	OFF, ON	If this is ON, the range of change for LFO RATE, CUTOFF, RESONANCE, and FILTER ENV DEPTH is wider than on the original model.	
CONDITION	0–100	Simulates the changes that occur as a unit ages.	

TONE
SH-101

Parameter	Value	Explanation	CC#
LFO RATE	0–1023	Specifies the speed of the LFO cycle.	29
LFO WAVEFORM	TRI, SQR, S&H	Specifies the LFO waveform.	
OSC LFO MOD	0–100	Adjusts the depth at which the LFO modulates the OSC.	26
OSC RANGE	16', 8', 4', 2'	Specifies the oscillator's octave.	47
PULSE WIDTH MOD	0–127	PW MODE = MANUAL: Adjusts the pulse width value.	50
		PW MODE = LFO/ENV: Adjusts the depth of modulation.	
PW MODE	Specifies the pulse width mode.		
	LFO	The pulse width is affected by the LFO.	
	MANUAL	The pulse width is affected by PULSE WIDTH MOD.	
	ENV	The pulse width is affected by ENV.	
PW LEVEL	0–255	Adjusts the volume of the pulse wave.	16
SAW LEVEL	0–255	Adjusts the volume of the sawtooth wave.	17
SUB OSC LEVEL	0–255	Adjusts the volume of the sub oscillator.	18
SUB OSC	Specifies the SUB OSC type.		
	1OCT DN	One octave lower	
	2OCT DN1	Two octaves lower	
	2OCT DN2	Two octaves lower (small pulse width)	
NOISE LEVEL	0–255	Adjusts the noise volume.	19
VINTAGE FLT TYPE	R, M, S	Selects one of three response curves, each modeling the LPF of an analog synthesizer of the past.	108
CUTOFF	0–1023	Specifies the cutoff frequency of the low-pass filter. The frequency region above the cutoff frequency is cut, producing a more mellow tonal character.	3
RESONANCE	0–1023	Boosts the region of the filter's cutoff frequency. Higher values produce a stronger result, giving the sound a distinctively synthesizer-like character.	9
FLT ENV DEPTH	-1023–+1023	Adjusts the amount by which the cutoff frequency is controlled by the envelope.	81
FILTER MOD	0–100	Adjusts the amount by which the LFO modulates the cutoff frequency.	28
FLT KEY FOLLOW	0–200	Varies the filter's cutoff frequency according to the note played on the keyboard.	82
AMP ENV SEL	ENV F&A, G-AMP	Specifies whether the volume is controlled by the ENV (ENV F&A) or stays at a fixed volume as long as the key is held down (G-AMP).	
AMP LEVEL	0–127	Adjusts the volume of the tone.	110

Parameter	Value	Explanation	CC#
ENV MODE	Specifies what causes the envelope to attack.		
	GATE+TRIG	Attack each time a key is pressed.	
	GATE	Attack when a key is pressed anew. No attack when playing legato.	
	LFO	Attack repeatedly at each cycle of the LFO as long as the key is held.	
ENV ATTACK	0–1023	Specifies the ENV Attack time.	89
ENV DECAY	0–1023	Specifies the ENV Decay time.	90
ENV SUSTAIN	0–1023	Specifies the ENV Sustain level.	102
ENV RELEASE	0–1023	Specifies the ENV Release time.	103
BEND PITCH	0–1500	Specifies the range of pitch change produced by pitch bend.	
BEND FILTER	-63–+63	Specifies the range of filter change produced by pitch bend.	14
MODULATION LFO	-63–+63	Specifies the amount of LFO applied by modulation.	
PORTA MODE	Turns portamento on/off. If this is on, the pitch will change smoothly from one note to the next-played note.		
	OFF	Regardless of the portamento time setting, portamento is not applied.	
	ON	Portamento is always applied.	
	AUTO	Portamento is applied only when you play legato (pressing the next key before completely releasing the previously-played key). This lets you use your playing technique to control portamento on/off.	
PORTA TIME	0–1023	Adjusts the time over which the portamento pitch change occurs.	5
PORTA CRV	Specifies the pitch change curve for portamento.		
	ORIGINAL	Change according to the original curve of the model.	
	LINEAR	Change in a linear curve.	
	EXP1	Change in a non-linear curve (gentle slope).	
	EXP2	Change in a non-linear curve (steep slope).	
KEY MODE	Specifies how notes are sounded.		119
	POLY	Polyphonic	
	SOLO	Monophonic	
	UNISON	Unison	
	SL-UNISON	Monophonic unison	
AFT LFO	-63–+63	Sets how much aftertouch changes the LFO intensity (this is only enabled for products with aftertouch).	
AFT FREQ	-63–+63	Sets how much aftertouch changes the low-pass filter intensity (this is only enabled for keyboards with aftertouch).	
AFT LEVEL	-63–+63	Sets how much aftertouch changes the tone volume (this is only enabled for keyboards with aftertouch).	
PITCH DRIFT	0–255	Adjusts the slight pitch drift that occurs when notes are played on an analog synthesizer.	
PARAM EXPANSION	OFF, ON	If this is ON, the range of change for LFO RATE, CUTOFF, RESONANCE, and FILTER ENV DEPTH is wider than on the original model.	
CONDITION	0–100	Simulates the changes that occur as a unit ages.	

TONE
JUPITER-X

Parameter	Value	Explanation	CC#
KEY MODE	Specifies how notes are sounded.		
	POLY	Polyphonic	
	SOLO	Monophonic	119
	UNISON	Unison	
	SL-UNISON	Plyphonic unison	

Parameter	Value	Explanation	CC#
UNISON DETUNE	0–100	Detunes each of the notes, producing a detuned effect. As you increase this value, each note is detuned more greatly, producing a thicker sound.	
PORTA MODE	Specifies the performance conditions for which portamento will be applied.		
	OFF	Off	118
	NORMAL	Portamento will always be applied.	
	LEGATO	Applies portamento only when you play legato (i.e., when you press the next key before releasing the previous key).	
PORTA TIME	0–1023	When portamento is used, this specifies the time over which the pitch will change. Higher settings will cause the pitch change to the next note to take more time.	5
PORTA CURVE	Specifies the pitch change curve for portamento.		
	LIN	Change on a linear curve.	
	EXP	Change on a non-linear curve.	
BEND RANGE UP	0–24	Specifies the amount of change in semitone units when the pitch bend wheel is turned all the way upward. For example, if this is "24," turning the pitch bend wheel all the way upward raises the pitch by two octaves.	41
BEND RANGE DOWN	0–24	Specifies the amount of change in semitone units when the pitch bend wheel is turned all the way downward. For example, if this is "24," turning the pitch bend wheel all the way downward lowers the pitch by two octaves.	
BEND FREQ SENS	-63–+63	Specifies the range of filter change produced by pitch bend.	
MOD LFO SENS	-63–+63	Specifies the amount of LFO applied by modulation(depth).	
MOD LFO RATE	-63–+63	Specifies the amount of LFO applied by modulation(rate).	
AFT MOD SENS	-63–+63	Sets how much aftertouch changes the LFO intensity (this is only enabled for products with aftertouch).	
AFT FREQ SENS	-63–+63	Sets how much aftertouch changes the low-pass filter intensity (this is only enabled for keyboards with aftertouch).	
AFT LEVEL SENS	-63–+63	Sets how much aftertouch changes the tone volume (this is only enabled for keyboards with aftertouch).	
AFT PITCH SENS	-63–+63	Sets how much aftertouch changes the pitch (this is only enabled for keyboards with aftertouch).	
PITCH DRIFT	0–255	Adjusts the slight pitch drift that occurs when notes are played on an analog synthesizer.	
CONDITION	0–100	Simulates the changes that occur as a unit ages.	
OSC1 WAVE OSC2 WAVE OSC3 WAVE OSC4 WAVE	SAW, SQR, TRI, SIN, JUNO, SuperSAW, NOISE	Selects the waveform that is the basis of the OSC1–4 sound.	46 (*1) 61 (*2)
OSC1 COARSE OSC2 COARSE OSC3 COARSE OSC4 COARSE	-24–+24	Adjusts the pitch of the sound up or down in semitone steps (+/-2 octaves).	20 (*1)
OSC1 FINE TUNE OSC2 FINE TUNE OSC3 FINE TUNE OSC4 FINE TUNE	-50–+50	Adjusts the pitch of the sound up or down in 1-cent steps (+/-50 cents).	21 (*1) 56 (*2)
OSC1 LEVEL OSC2 LEVEL OSC3 LEVEL OSC4 LEVEL	0–255	Adjusts the OSC1–4 volume balance.	16 (*1) 17 (*2) 18 (*3) 19 (*4)
OSC1 PW OSC2 PW OSC3 PW OSC4 PW	0–127	PW MOD = MANUAL Adjusts the width of modulation. PW MOD = LFO2, P-ENV, F-ENV Adjusts the depth of modulation.	50 (*1) 55 (*2)

Parameter	Value	Explanation	CC#
OSC1 PW MOD OSC2 PW MOD OSC3 PW MOD OSC4 PW MOD	Specifies the pulse width mode.		
	MANUAL	OSC1–4 WAVE=SQR The pulse width is affected by the PULSE WIDTH MOD. OSC1–4 WAVE=SAW, TRI, SIN, JUNO The wave is affected by the PULSE WIDTH MOD. OSC1–4 WAVE=SuperSAW The detune is affected by the PULSE WIDTH MOD. OSC1–4 WAVE=NOISE This has no effect.	
	LFO2	OSC1–4 WAVE=SQR The pulse width is affected by the LFO2. OSC1–4 WAVE=SAW, TRI, SIN, JUNO The wave is affected by the LFO2. OSC1–4 WAVE=SuperSAW The detune is affected by the LFO2. OSC1–4 WAVE=NOISE This has no effect.	
	P-ENV, F-ENV	OSC1–4 WAVE=SQR The pulse width is affected by the ENV. OSC1–4 WAVE=SAW, TRI, SIN, JUNO The wave is affected by the ENV. OSC1–4 WAVE=SuperSAW The detune is affected by the ENV. OSC1–4 WAVE=NOISE This has no effect.	
OSC1 DLY TIME OSC2 DLY TIME OSC3 DLY TIME OSC4 DLY TIME	0–1023	Delays the timing at which OSC1–4 sound, according to the time you set (OSC delay). This is enabled when OSC1–4 DLY SYNC is "OFF."	
OSC1 DLY SYNC OSC2 DLY SYNC OSC3 DLY SYNC OSC4 DLY SYNC	OFF, ON	Set this ON if you want the OSC delay time to synchronize with the tempo.	
OSC1 DLY NOTE OSC2 DLY NOTE OSC3 DLY NOTE OSC4 DLY NOTE	1/64T, 1/64, 1/32T, 1/32, 1/16T, 1/32., 1/16, 1/8T, 1/16., 1/8, 1/4T, 1/8., 1/4, 1/2T, 1/4., 1/2, 1T, 1/2., 1, 2T, 1., 2	This is available when OSC1–4 Time Sync is ON. It specifies the delay time in terms of a note value.	
OSC1 PAN OSC2 PAN OSC3 PAN OSC4 PAN	L64–63R	Specifies the pan of the OSC1–4. "L64" is far left, "0" is center, and "63R" is far right.	
OSC1 ALT PAN OSC2 ALT PAN OSC3 ALT PAN OSC4 ALT PAN	L64–63R	This setting causes panning to be alternated between left and right each time a key is pressed. Higher values will produce a greater amount of change. "L" or "R" settings will reverse the order in which the pan will alternate between left and right. For example if two partials are set to "L" and "R" respectively, the panning of the two tones will alternate each time they are played.	
OSC1-2 XMOD	0–10800	Effective when OSC1-2 MODE is XMOD. Sets the Cross Modulation Depth.	52
OSC3-4 XMOD	0–10800	Effective when OSC3-4 MODE is XMOD. Sets the Cross Modulation Depth.	
OSC1-2 MODE	The sound of OSC1 is modulated by OSC2.		111
	OFF	Off	
	SYNC	Implements the oscillator sync function that is provided by an analog synthesizer. The OSC1 oscillator is reset at intervals of OSC2's pitch cycle.	
	RING	Implements the ring modulator function that is provided by an analog synthesizer. The output sound of OSC2 is multiplied with OSC1.	
	X-MOD	Implements the cross modulation function that is provided by an analog synthesizer. The output sound of OSC2 is applied as the pitch of OSC1.	

Parameter	Value	Explanation	CC#
OSC3-4 MODE	The sound of OSC3 is modulated by OSC4.		
	OFF	Off	
	SYNC	Implements the oscillator sync function that is provided by an analog synthesizer. The OSC3 oscillator is reset at intervals of OSC4´s pitch cycle.	
	RING	Implements the ring modulator function that is provided by an analog synthesizer. The output sound of OSC4 is multiplied with OSC3.	
	X-MOD	Implements the cross modulation function that is provided by an analog synthesizer. The output sound of OSC4 is applied as the pitch of OSC3.	
PENV1&2 LINK SW	OFF, ON	Sets whether the Pitch Envelopes 1 and 2 are linked or independent.	
PENV1 ATTACK PENV2 ATTACK	0–1023	Specifies the PITCH ENV1, 2 Attack time.	23 (*5)
PENV1 DECAY PENV2 DECAY	0–1023	Specifies the PITCH ENV1, 2 Decay time.	24 (*5)
PENV1 SUSTAIN PENV2 SUSTAIN	0–1023	Specifies the PITCH ENV1, 2 Sustain level.	
PENV1 RELEASE PENV2 RELEASE	0–1023	Specifies the PITCH ENV1, 2 Release time.	
PENV1 DEPTH PENV2 DEPTH	-100–+100	Adjusts the effect of the Pitch Envelope1, 2. Higher settings will cause the Pitch Envelope1, 2 to produce greater change. Negative (-) value will invert the shape of the envelope.	22 (*5)
PENV1 VEL SENS PENV2 VEL SENS	-100–+100	Keyboard playing dynamics can be used to control the depth of the Pitch Envelope1, 2. If you want the pitch envelope to have more effect for strongly played notes, set this parameter to a positive (+) value. If you want the pitch envelope to have less effect for strongly played notes, set this to a negative (-) value.	
PENV1 DEST SEL PENV2 DEST SEL	OSC1, BOTH, OSC2	Select the OSC to which you want to apply Pitch Envelope1.	
PENV1 KEY FLW PENV2 KEY FLW	-100–+100	Sets the key follow intensity for pitch envelopes 1 and 2. When this is set to a positive value, lower notes produce longer ADR times, and higher notes produce shorter times. When this is set to a negative value, lower notes produce shorter ADR times, and higher notes produce longer times.	
FILTER FREQ	0–1023	Specifies the cutoff frequency of the low-pass filter. The frequency region above the cutoff frequency is cut, producing a more mellow tonal character.	3
FILTER RESO	0–1023	Boosts the region of the filter's cutoff frequency. Higher values produce a stronger result, giving the sound a distinctively synthesizer-like character.	
HPF CUTOFF	0–1023	Specifies the cutoff frequency of the high-pass filter.	79
FILTER SLOPE	-12, -18, -24	Selects the type of slope for the low-pass filter.	
FILTER TYPE	R, M, S	Selects one of three response curves, each modeling the LPF of an analog synthesizer of the past.	108
FILTER KEY FLW	0–200	Adjusts the amount by which the keyboard pitch affects the cutoff frequency (key follow). With smaller values, the cutoff frequency becomes lower as you play higher notes.	82
FILTER VSENS	-100–+100	Use this parameter when changing the cutoff frequency to be applied as a result of changes in playing velocity. Specify a positive "+" value if you want the cutoff frequency to raise when you play strongly, or a negative "-" value if you want it to lower.	53
FENV1&2 LINK SW	OFF, ON	Sets whether the Filter Envelopes 1 and 2 are linked or independent.	
FENV1 ATTACK FENV2 ATTACK	0–1023	Specifies the Filter Envelope1, 2 Attack time.	83 (*6)
FENV1 DECAY FENV2 DECAY	0–1023	Specifies the Filter Envelope1, 2 Decay time.	84 (*6)
FENV1 SUSTAIN FENV2 SUSTAIN	0–1023	Specifies the Filter Envelope1, 2 Sustain level.	

Parameter	Value	Explanation	CC#
FENV1 RELEASE FENV2 RELEASE	0–1023	Specifies the Filter Envelope1, 2 Release time.	
FENV1 DEPTH FENV2 DEPTH	-100–+100	Adjusts the effect of the Filter Envelope1, 2. Higher settings will cause the Filter Envelope1, 2 to produce greater change. Negative (-) value will invert the shape of the envelope.	81 (*6)
FENV1 VEL SENS FENV2 VEL SENS	-100–+100	Keyboard playing dynamics can be used to control the depth of the Filter Envelope1, 2. If you want the filter envelope to have more effect for strongly played notes, set this parameter to a positive (+) value. If you want the pitch envelope to have less effect for strongly played notes, set this to a negative (-) value.	
FENV1 KEY FLW FENV2 KEY FLW	-100–+100	Sets the key follow intensity for filter envelopes 1 and 2. When this is set to a positive value, lower notes produce longer ADR times, and higher notes produce shorter times. When this is set to a negative value, lower notes produce shorter ADR times, and higher notes produce longer times.	
AMP LEVEL	0–127	Adjusts the volume of the tone.	110
OSC1&2 VSENS	-100–+100	Set this when you want the volume of the OSC1, 2 to change depending on the force with which you press the keys. Set this to a positive (+) value to have the changes in partial volume increase the more forcefully the keys are played; to make the partial play more softly as you play harder, set this to anegative (-) value.	54
OSC3&4 VSENS	-100–+100	Set this when you want the volume of the OSC3, 4 to change depending on the force with which you press the keys. Set this to a positive (+) value to have the changes in partial volume increase the more forcefully the keys are played; to make the partial play more softly as you play harder, set this to anegative (-) value.	
AENV ATTACK	0–1023	Specifies the Amp Envelope Attack time.	89
AENV DECAY	0–1023	Specifies the Amp Envelope Decay time.	90
AENV SUSTAIN	0–1023	Specifies the Amp Envelope Sustain level.	102
AENV RELEASE	0–1023	Specifies the Amp Envelope Release time.	103
AENV VEL SENS	-100–+100	Adjusts the effect of the Amp Envelope1. Higher settings will cause the Amp Envelope1 to produce greater change. Negative (-) value will invert the shape of the envelope.	
AENV KEY FLW	-100–+100	Use this parameter when changing the Amp Envelope to be applied as a result of changes in playing velocity. Specify a positive "+" value if you want Amp Envelope to increase when you play strongly, or a negative "-" value if you want it to decrease.	
LFO1 WAVE LFO2 WAVE	SIN, TRI, SAW-UP, SAW-DW, SQR, RND, TRP, S&H, CHS, VSIN	Selects the waveform of the LFO.	35 (*7)
LFO1 RATE NOTE LFO2 RATE NOTE	1/64T, 1/64, 1/32T, 1/32, 1/16T, 1/32., 1/16, 1/8T, 1/16., 1/8, 1/4T, 1/8., 1/4, 1/2T, 1/4., 1/2, 1T, 1/2., 1, 2T, 1., 2, 4	This is effective if LFO1, 2 SYNC SW is ON. Specifies the LFO1, 2 rate in terms of a note value.	31 (*7)
LFO1 RATE LFO2 RATE	0–1023	This is effective if LFO1, 2 SYNC SW is OFF. Specifies the LFO1, 2 rate without regard to the tempo. Higher values produce a faster LFO rate (a shorter cycle).	29 (*7)
LFO1 DLY TIME LFO2 DLY TIME	0–1023	Specifies the time elapsed before the LFO1, 2 effect is applied (the effect continues) after the key is pressed (or released). * **After referring to "How to Apply the LFO" (p. 33), change the setting until the desired effect is achieved.**	27 (*7)
LFO1 PCH DEPTH LFO2 PCH DEPTH	-100–+100	Specifies how deeply the LFO1, 2 will affect pitch.	26 (*7)
LFO1 FLT DEPTH LFO2 FLT DEPTH	-100–+100	Specifies how deeply the LFO1, 2 will affect the cutoff frequency.	28 (*7)
LFO1 AMP DEPTH LFO2 AMP DEPTH	-100–+100	Specifies how deeply the LFO1, 2 will affect the volume.	30 (*7)
LFO1 DEST SEL LFO2 DEST SEL	ALL, OSC1, OSC2, OSC3, OSC4, SC12, OSC34	Selects the OSC that is modulated by LFO1, 2.	
LFO1 SYNC SW LFO2 SYNC SW	OFF, ON	Set this ON if you want the LFO1, 2 rate to synchronize with the tempo.	
LFO1 KEY TRG LFO2 KEY TRG	OFF, ON	Specifies whether the LFO1, 2 cycle will be synchronized to begin when the key is pressed (ON) or not (OFF).	
LFO1 PAN DEPTH LFO2 PAN DEPTH	-63–+63	Specifies how deeply the LFO will affect the pan.	

*1 OSC1
*2 OSC2
*3 OSC3
*4 OSC4
*5 Pitch Envelope1
*6 Filter Envelope1
*7 LFO1

TONE

VOCODER, PR-A DRUM, CMN DRUM

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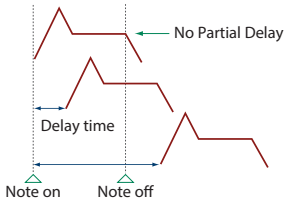
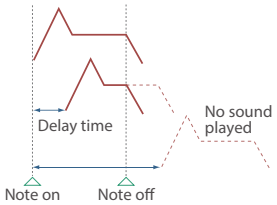
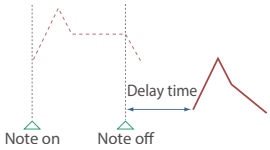
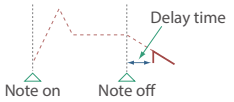
TONE

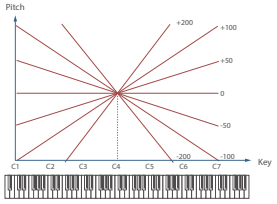
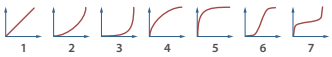
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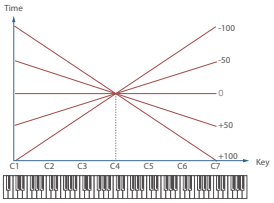
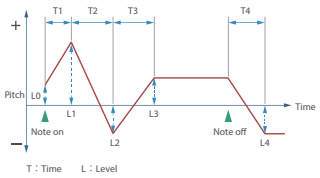
*** The CCs that are supported differ with each partial. (p. 33)**

Parameter	Value	Explanation
Keyboard		
Ptl Sw	OFF, ON	Use these switch to turn the partials on/off.
Key Rng Low	C-–G9	Specify the key range for each partial. Make these settings when you want different key ranges to play different tones. Specify the lower limit (Low) and upper limit (Upp) of the key range.
Key Rng Upp	C-–G9	
Key Fade Low	0–127	Specifies the degree to which the partial is sounded by notes played below the Key Rng Low. If you don't want the tone to sound at all, set this parameter to "0."
Key Fade Upp	0–127	Specifies the degree to which the partial is sounded by notes played above the Key Rng Upp. If you don't want the tone to sound at all, set this parameter to "0."
Velo Rng Low	1–127	Specify the lower limit (Low) and upper limit (Upp) of the velocities that will sound the partial. Make these settings when you want different partials to sound depending on keyboard playing dynamics.
Velo Rng Upp	1–127	
Velo FadeLow	0–127	Specifies the degree to which the partial is sounded by notes played more softly than Velo Rng Low. If you don't want the tone to sound at all, set this parameter to "0."
Velo FadeUpp	0–127	Specifies the degree to which the partial is sounded by notes played more strongly than Velo Rng Upp. If you don't want the tone to sound at all, set this parameter to "0."

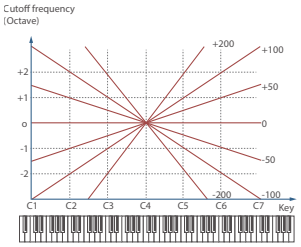
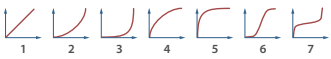
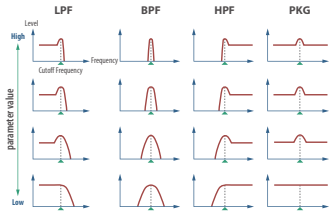
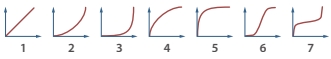
Parameter	Value	Explanation
OSC		
OSC Type	Specifies the oscillator type.	
	PCM	PCM is used. The wave of the number specified by the Wav Gr ID and Wav L/R No. is used.
	VA	A numerically calculated analog-modeled wave is generated. The wave of the number specified by Waveform is used.
	PCM-Sync	The wave of the number specified by Sync Wav No. is used.
	SuperSAW	SuperSAW is used.
	Noise	White noise is used.
Wav Gr Type	INT	Specifies the type of wave group (can be set only for INT).
Wav Gr ID	A - E	Sets the wave group ID within the specified wave group type.
Wav L No. [Wave Name]	(Wave number)	Specifies the Wave within the wave group ID. For mono use, specify only the left side (L). For stereo use, specify the right side (R) as well. If the sound will be played in mono, specify only Wav L No., and leave Wav R No. set as 0 (OFF). Sound is not produced if you specify only Wav R No.
	(Wave name)	
Wav R No. [Wave Name]	(Wave number)	
	(Wave name)	
Wav Form	Specifies the wave that is used when OSC Type is VA.	
	SAW	Sawtooth wave
	SQR	Square wave
	TRI	Triangle wave
	SIN	sine wave
	RAMP	Ramp wave
	JUNO	Modulated sawtooth wave
	TRI2	Triangle wave variation
	TRI3	Triangle wave variation
	SIN2	Sine wave variation
VA Invert Sw	OFF, ON	If this is ON, the phase of the VA waveform is inverted.
Pulse Width	0–127	This effect is produced when the waveform is deformed by varying the duty cycle of the pulse width. It is effective when OSC Type is VA, and is also effective with waveforms other than SQR (square wave). * **If the value is 64, the pulse width has a 50%:50% duty cycle.**
PWM Depth	-63–+63	Specifies the amount (depth) of LFO applied to PW (Pulse Width). PW is modulated according to the LFO2 setting.
Click Type	SOFT, HARD, NATURAL, OFF	Changes the sense of attack by varying the position at which the sound starts. This is available if OSC Type is VA. However, HARD is effective only when Waveform is TRI, TRI2, SIN, or SIN2.
Fat	0–127	Boosts the low-frequency region. This is effective if OSC Type is VA.
Sync Wav No.	(Wave number)	When "PCM-Sync" is selected for the OSC Type, set the wave to use here. PCM-Sync is an effective oscillator type when "SYNC" is selected for the structure, when partial 1 is set for Structure 1–2 and when partial 3 is set for Structure 3–4.
	(Wave name)	
SSaw Detune	0–127	Adjusts the Detune depth for SuperSAW. Higher values produce a deeper Detune effect. * **This is effective only when SuperSAW is selected as the OSC Type.**
Wav Gain	-18, -12, -6, 0, +6, +12 [dB]	Specifies the gain (amplitude) of the waveform. The value will change in 6 dB (decibel) steps. Each 6 dB increase doubles the gain.
OSC Attenuator	0–255	Specifies the OSC level. 255 is the reference value. If you want only the self-oscillation of the filter to be heard, set this to 0.

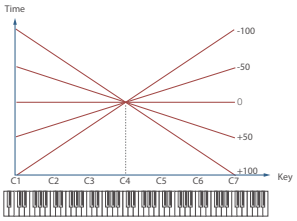
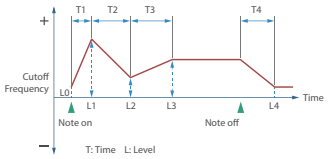
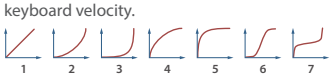
Parameter	Value	Explanation
FXM Sw	OFF, ON	This sets whether FXM will be used (ON) or not (OFF). * **FXM (Frequency Cross Modulation) uses a specified waveform to apply frequency modulation to the currently selected waveform, creating complex overtones. This is useful for creating dramatic sounds or sound effects.**
FXM Color	1–4	Specifies how FXM will perform frequency modulation. Higher settings result in a grainier sound, while lower settings result in a more metallic sound.
FXM Depth	0–16	Specifies the depth of the modulation produced by FXM.
DlyMod	**Partial Delay** This produces a time delay between the moment a key is pressed (or released), and the moment the partial actually begins to sound. You can also make settings that shift the timing at which each partial is sounded. This differs from the Delay in the internal effects, in that by changing the sound qualities of the delayed partials and changing the pitch for each partial, you can also perform arpeggio-like passages just by pressing one key. You can also synchronize the partial delay time to the tempo of the external MIDI sequencer. If Retrig Intvl (Legato Retrigger Interval) is other than OFF, legato operation occurs only when Delay Mode is NORMAL. Also in this case, Retrig Intvl (Legato Retrigger Interval) operates as 0 (retriggers at each Delay Time).	
	NORMAL	The partial begins to play after the time specified in the Partial Delay Time parameter has elapsed. 
	HOLD	Although the partial begins to play after the time specified in the Partial Delay Time parameter has elapsed, if the key is released before the time specified in the Partial Delay Time parameter has elapsed, the partial is not played. 
	KEYOFF-NORMAL	Rather than being played while the key is pressed, the partial begins to play once the period of time specified in the Partial Delay Time parameter has elapsed after release of the key. This is effective in situations such as when simulating noises from guitars and other instruments. 
	KEYOFF DECAY	Rather than being played while the key is pressed, the partial begins to play once the period of time specified in the Partial Delay Time parameter has elapsed after release of the key. Here, however, changes in the TVA Envelope begin while the key is pressed, which in many cases means that only the sound from the release portion of the envelope is heard. 
Dly Time Sync	OFF, ON	Set this ON if you want the partial delay time to synchronize with the tempo.

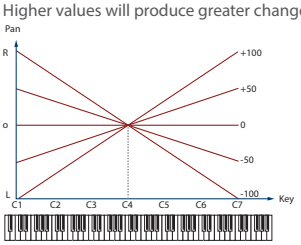
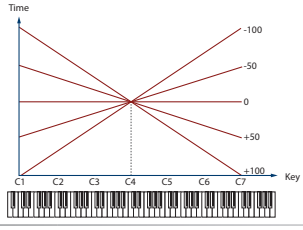
Parameter	Value	Explanation
Dly Time Note	1/64T, 1/64, 1/32T, 1/32, 1/16T, 1/32., 1/16, 1/8T, 1/16., 1/8, 1/4T, 1/8., 1/4, 1/2T, 1/4., 1/2, 1T, 1/2., 1, 2T, 1., 2	This is available when Dly Time Sync is ON. It specifies the delay time in terms of a note value.
Dly Time	0–1023	This is available when Dly Time Sync is OFF. It specifies the delay time without regard to the tempo.
Tempo Sync	OFF, ON	Set this ON if you want the LFO rate to synchronize with the tempo.
Pitch		
Coarse Tune	-48–+48	Adjusts the pitch of the sound up or down in semitone steps (+/-4 octaves).
Fine Tune	-50–+50	Adjusts the pitch of the sound up or down in 1-cent steps (+/-50 cents).
Pit Rnd	0–1200	This specifies the width of random pitch deviation that will occur each time a key is pressed. If you do not want the pitch to change randomly, set this to "0." * **These values are in units of cents (1/100th of a semitone).**
Pit Keyf	-200–+200	This specifies the amount of pitch change that will occur when you play a key one octave higher (i.e., 12 keys upward on the keyboard). If you want the pitch to rise one octave as on a conventional keyboard, set this to "+100." If you want the pitch to rise two octaves, set this to "+200." Conversely, set this to a negative (-) value if you want the pitch to fall. With a setting of "0," all keys will produce the same pitch. 
Vib Pit Sens	-100–+100	Specifies the amount by which the Pitch Depth of LFO1 is changed by the SCENE PART: MODIFY Vib Depth.
Stereo Detn	-50–+50	Specifies the detune between L⇔R when outputting in stereo.
Pitch Env		
Pit Depth	-100–+100	Adjusts the effect of the Pitch Envelope. Higher settings will cause the pitch envelope to produce greater change. Negative (-) value will invert the shape of the envelope. If OSC Type is other than VA, this is limited to ±63.
Pit VCrv	FIXED, 1–7	Selects one of the following 7 curves that will determine how keyboard playing dynamics will affect the pitch envelope. Set this to "FIXED" if you don't want the pitch envelope be affected by the keyboard velocity. 
Pit VSens	-100–+100	Keyboard playing dynamics can be used to control the depth of the pitch envelope. If you want the pitch envelope to have more effect for strongly played notes, set this parameter to a positive (+) value. If you want the pitch envelope to have less effect for strongly played notes, set this to a negative (-) value.
Pit T1 VSens	-100–+100	This allows keyboard dynamics to affect the Time 1 of the Pitch envelope. If you want Time 1 to be speeded up for strongly played notes, set this parameter to a positive "+" value. If you want it to be slowed down, set this to a negative "-" value.
Pit T4 VSens	-100–+100	Use this parameter when you want key release speed to affect the Time 4 value of the pitch envelope. If you want Time 4 to be speeded up for quickly released notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value.

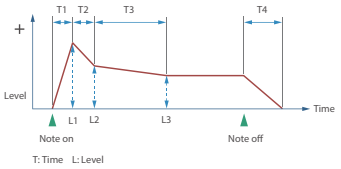
Parameter	Value	Explanation
PEnv TKeyf	-100–+100	Use this setting if you want the pitch envelope times (Time 2–Time 4) to be affected by the keyboard location. Based on the pitch envelope times for the C4 key, positive (+) value will cause notes higher than C4 to have increasingly shorter times, and negative (-) value will cause them to have increasingly longer times. Higher values will produce greater change. 
PEnvLFOTrig Sw	OFF, ON	If this is ON, the pitch envelope is cyclically retriggered by LFO1. * **This is effective when Env Mode is SUSTAIN.**
Pit Time1 Pit Time2 Pit Time3 Pit Time4	0–1023	Specify the pitch envelope times (Time 1–Time 4). Higher settings will result in a longer time until the next pitch is reached. (For example, Time 2 is the time over which the pitch changes from Level 1 to Level 2.) * **If ADSR Envelope Switch is ON, the Time 2 has no effect.** 
Pit Lv0 Pit Lv1 Pit Lv2 Pit Lv3 Pit Lv4	-511–+511	Specify the pitch envelope levels (Level 0–Level 4). It determines how much the pitch changes from the reference pitch (the value set with Coarse Tune or Fine Tune on the Pitch screen) at each point. Positive (+) value will cause the pitch to be higher than the standard pitch, and negative (-) value will cause it to be lower. * **If ADSR Envelope Switch is ON, only Level 3 (Sustain) has an effect. Also in this case, settings with a negative value are ignored.**
Filter		
Filter Type	TVF, VCF	Selects the type of filter. * **TVF stands for Time Variant Filter, a filter that lets you specify in detail how the frequency components of the sound change over time.** **If you select VCF, the polyphony will be lower than if you select TVF.**

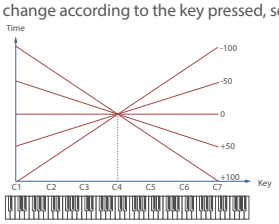
Parameter	Value	Explanation
TVF Type	Selects the type of TVF filter. * **If Filter Type is set to VCF, this will be LPF.**	
	OFF	No filter is used.
	LPF	Low Pass Filter. This cuts the frequencies in the region above the cutoff frequency (Cutoff Frequency). Since this cuts the high-frequency region, the sound becomes more mellow. This is the most common filter used in synthesizers.
	BPF	Band Pass Filter. This leaves only the frequencies in the region of the cutoff frequency (Cutoff Frequency), and cuts the rest. This can be useful when creating distinctive sounds.
	HPF	High Pass Filter. This cuts the frequencies in the region below the cutoff frequency (Cutoff Frequency). This is suitable for creating percussive sounds emphasizing their higher tones.
	PKG	Peaking Filter. This emphasizes the frequencies in the region of the cutoff frequency (Cutoff Frequency). You can use this to create wah-wah effects by employing an LFO to change the cutoff frequency cyclically.
	LPF2	Low Pass Filter 2. Although frequency components above the Cutoff frequency (Cutoff Frequency) are cut, the sensitivity of this filter is half that of the LPF. This makes it a comparatively warmer low pass filter. This filter is good for use with simulated instrument sounds such as the acoustic piano. * **If you set "LPF2," the setting for the Resonance parameter will be ignored (p. 27).**
	LPF3	Low Pass Filter 3. Although frequency components above the Cutoff frequency (Cutoff Frequency) are cut, the sensitivity of this filter changes according to the Cutoff frequency. While this filter is also good for use with simulated acoustic instrument sounds, the nuance it exhibits differs from that of the LPF2, even with the same TVF Envelope settings. * **If you set "LPF3," the setting for the Resonance parameter will be ignored (p. 27).**
VCF Type	VCF1, JP, MG, P5	This parameter is effective when Filter Type is VCF. Each setting simulates the operation of an analog synthesizer's LPF. In particular, MG, JP, and P5 are types that are suitable for reproducing synthesizer sounds of the past.
Flt Slope	-12, -18, -24 [dB/Oct]	This button selects the slope (steepness) of the filter. For VCF, you can choose -12, -18, or -24. For TVF, only -12 or -24 can be selected. If Filter Type is TVF, the following limitations apply. • You can specify only -12 dB or -24 dB. If you specify -18 dB, the sound generator operates internally with the -12 dB setting. • If you specify -24 dB, the polyphony will be lower than if you specify -12 dB.
HPF Cutoff	0–1023	Specifies the cutoff frequency of the -6 dB high-pass filter. * **This parameter is effective when Filter Type is VCF.**
Cutoff	0–1023	Selects the frequency at which the filter begins to have an effect on the waveform's frequency components. With "LPF/LPF2/LPF3" selected for the TVF Type parameter, lower cutoff frequency settings reduce a tone's upper harmonics for a more rounded, warmer sound. Higher settings make it sound brighter. If "BPF" is selected for the TVF Type, harmonic components will change depending on the TVF Cutoff Frequency setting. This can be useful when creating distinctive sounds. With "HPF" selected, higher Cutoff Frequency settings will reduce lower harmonics to emphasize just the brighter components of the sound. With "PKG" selected, the harmonics to be emphasized will vary depending on Cutoff Frequency setting.

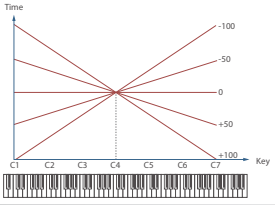
Parameter	Value	Explanation
Cutoff KeyF	-200–+200	Use this parameter if you want the cutoff frequency to change according to the key that is pressed. Relative to the cutoff frequency at the key specified by Cutoff Keyf BP (Cutoff Keyfollow Base Point), positive "+" values cause the cutoff frequency to become higher as you play above the reference key, and negative "-" values cause the cutoff frequency to become lower. Higher values will produce greater change. 
Cutoff Keyf BP	0–127	Specifies the reference key when using Keyfollow to modify the cutoff frequency. If this is 60, the C4 key (middle C) is the reference key.
Cutoff VCrv	FIXED, 1–7	Selects one of the following seven curves that determine how keyboard playing dynamics (velocity) influence the cutoff frequency. Set this to "FIXED" if you don't want the Cutoff frequency to be affected by the keyboard velocity. 
Cutoff VSens	-100–+100	Use this parameter when changing the cutoff frequency to be applied as a result of changes in playing velocity. Specify a positive "+" value if you want the cutoff frequency to raise when you play strongly, or a negative "-" value if you want it to lower.
Resonance	0–1023	Emphasizes the portion of the sound in the region of the cutoff frequency, adding character to the sound. Excessively high settings can produce oscillation, causing the sound to distort. 
Reso VSens	-100–+100	Use this parameter when changing the resonance to be applied as a result of changes in playing velocity. Specify a positive "+" value if you want resonance to increase when you play strongly, or a negative "-" value if you want it to decrease.
Vib Cut Sens	-100–+100	Specifies how the TVF Depth of LFO1 is affected by the SCENE PART: Modify Vib Depth.
Filter Env		
Filtr Depth	-63–+63	Specifies the depth of the Filter envelope. Higher settings increase the change produced by the Filter envelope. Negative (-) value will invert the shape of the envelope.
FEnv Fine Depth	-63–+63	Finely adjusts the depth of the filter envelope.
Filtr VCrv	FIXED, 1–7	Selects one of the following seven types of curve by which keyboard playing dynamics affect the depth of the filter envelope. If you don't want keyboard playing dynamics to affect the filter envelope depth, specify "FIXED." 
Filtr VSens	-100–+100	Specify this if you want keyboard playing dynamics to affect the filter envelope depth. Specify a positive "+" value if you want the filter envelope to apply more deeply as you play more strongly, or a negative "-" value if you want it to apply less deeply.

Parameter	Value	Explanation
Filtr T1 VSens	-100–+100	Specify this if you want keyboard playing dynamics to affect Time 1 of the filter envelope. If you want Time 1 to be speeded up for strongly played notes, set this parameter to a positive "+" value. If you want it to be slowed down, set this to a negative "-" value.
Filtr T4 VSens	-100–+100	Specify this if you want key release velocity to affect Time 4 of the filter envelope. If you want Time 4 to be speeded up for quickly released notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value.
FEnv TKeyf	-100–+100	Specify this if you want the filter envelope times (Time 2–Time 4) to vary depending on the keyboard position you play. Relative to the filter envelope times at the C4 key (middle C), positive "+" values shorten the times for notes played in the region above C4, and negative "-" values lengthen the times. Higher values will produce greater change. 
FEnvLFOTrig Sw	OFF, ON	If this is ON, the filter envelope is cyclically triggered by LFO1. * **This is effective when Env Mode is SUSTAIN.**
Filtr Time1 **Filtr Time2** **Filtr Time3** **Filtr Time4**	0–1023	Specify the filter envelope times (Time 1–Time 4). Higher settings will lengthen the time until the next cutoff frequency level is reached. (For example, Time 2 is the time over which Level 1 will change to Level 2.) * **If ADSR Envelope Switch is ON, the Time 2 has no effect.** 
Filtr Lv0 **Filtr Lv1** **Filtr Lv2** **Filtr Lv3** **Filtr Lv4**	0–1023	Specify the filter envelope levels (Level 0–Level 4). Specify the amount of cutoff frequency change at each point relative to the reference cutoff frequency (the cutoff frequency value specified in the Filter screen). * **If ADSR Envelope Switch is ON, only Level 3 (Sustain) has an effect.**
Amp		
Level	0–127	Sets the volume of the partial. This setting is useful primarily for adjusting the volume balance between partials.
Level VCrv	FIXED, 1–7	Selects one of the following seven curves that determine how keyboard dynamics will affect the volume. Set this to "FIXED" if you don't want the volume of the partial to be affected by the keyboard velocity. 
Level VSens	-100–+100	Set this when you want the volume of the partial to change depending on the force with which you press the keys. Set this to a positive (+) value to have the changes in partial volume increase the more forcefully the keys are played; to make the partial play more softly as you play harder, set this to a negative (-) value.
Bias Lv	-100–+100	Adjusts the angle of the volume change that will occur in the selected Bias Direction. Higher values will produce greater change. Negative (-) values will invert the change direction.
Bias Pos	0–127	Specifies the key relative to which the volume will be modified. A setting of 64 is the C4 key (middle C).

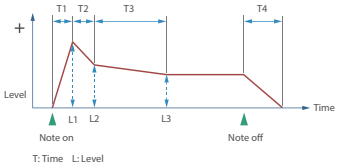
Parameter	Value	Explanation
Bias Dir	Selects the direction in which change will occur starting from the Bias Position.	
	LOWER	The volume will be modified for the keyboard area below the Bias Point.
	UPPER	The volume will be modified for the keyboard area above the Bias Point.
	LOWER&UPPER	The volume will be modified symmetrically toward the left and right of the Bias Point.
	ALL	The volume changes linearly with the bias point at the center.
Pan	L64–63R	Sets the pan of the partial. "L64" is far left, "0" is center, and "63R" is far right.
Pan Keyf	-100–+100	Use this parameter if you want key position to affect panning. Positive (+) value will cause notes higher than C4 key (center C) to be panned increasingly further toward the right, and negative (-) value will cause notes higher than C4 key (center C) to be panned toward the left. Higher values will produce greater change. 
Pan Rnd	0–63	Use this parameter when you want the stereo location to change randomly each time you press a key. Higher values will produce a greater amount of change.
Pan Alt	L64–63R	This setting causes panning to be alternated between left and right each time a key is pressed. Higher values will produce a greater amount of change. "L" or "R" settings will reverse the order in which the pan will alternate between left and right. For example if two partials are set to "L" and "R" respectively, the panning of the two tones will alternate each time they are played.
Vib Amp Sens	-100–+100	Specifies how the SCENE PART: Modify Vib Depth affects the Amp Depth of LFO1.
Stereo Width	0–100	Adjusts the amount of width when outputting in stereo. This has no effect when outputting in mono.
Amp Env		
Amp T1 VSens	-100–+100	Specify this if you want keyboard dynamics to affect the AMP envelope's Time 1. If you want Time 1 to be speeded up for strongly played notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value.
Amp T4 VSens	-100–+100	Specify this if you want key release velocity to affect the AMP envelope's Time 4. If you want Time 4 to be speeded up for quickly released notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value.
AEnv Tkeyf	-100–+100	Specify this if you want keyboard position to affect the AMP envelope's times (Time 2–Time 4). Relative to the AMP envelope times at the C4 key (middle C), positive (+) values cause the times to shorten as you play higher on the keyboard, and negative (-) values cause the times to lengthen. Higher values will produce greater change. 
AEnvLFOTrig Sw	OFF, ON	If this is ON, the amp envelope is cyclically triggered by LFO1. * **This is effective when Env Mode is SUSTAIN.**

Parameter	Value	Explanation
Amp Time1 **Amp Time2** **Amp Time3** **Amp Time4**	0–1023	Specify the AMP envelope times (Time 1–Time 4). Higher settings lengthen the time until the next volume level is reached. (For example, Time 2 is the time over which Level 1 will change to Level 2.) * **If ADSR Envelope Switch is ON, the Time 2 has no effect.**
Amp Lv1 **Amp Lv2** **Amp Lv3**	0–1023	Specify the AMP envelope levels (Level 1–Level 3). These specify the amount of change at each point relative to the reference volume (the partial level value specified in the Amp screen).  T: Time L: Level * **If ADSR Envelope Switch is ON, only Level 3 (Sustain) has an effect.**
LFO1		
L1 Waveform	Selects the waveform of the LFO.	
	SIN	Sine wave
	TRI	Triangle wave
	SAW-UP	Sawtooth wave
	SAW-DW	Sawtooth wave (negative polarity)
	SQR	Square wave
	RND	Random wave
	TRP	Trapezoidal wave
	S&H	Sample & Hold wave (one time per cycle, LFO value is changed)
	CHS	Chaos wave
	VSIN	Modified sine wave. The amplitude of a sine wave is randomly varied once each cycle.
	STEP	A waveform generated by the data specified by LFO Step 1–16. This produces stepped change with a fixed pattern similar to a step modulator.
L1 Rate Sync	OFF, ON	Set this ON if you want the LFO rate to synchronize with the tempo.
L1 Rate Note	1/64T, 1/64, 1/32T, 1/32, 1/16T, 1/32., 1/16, 1/8T, 1/16., 1/8, 1/4T, 1/8., 1/4, 1/2T, 1/4., 1/2, 1T, 1/2., 1, 2T, 1., 2, 4	This is effective if Rate Sync is ON. Specifies the LFO rate in terms of a note value.
L1 Rate	0–1023	This is effective if Rate Sync is OFF. Specifies the LFO rate without regard to the tempo. Higher values produce a faster LFO rate (a shorter cycle).
L1 Offset	-100–+100	Raises or lowers the LFO waveform relative to the central value (pitch or cutoff frequency). Positive (+) value will move the waveform so that modulation will occur from the central value upward. Negative (-) value will move the waveform so that modulation will occur from the central value downward.
L1 Rate Detn	0–127	Subtly changes the LFO cycle speed (Rate parameter) each time you press a key. Higher values produce greater change. This parameter is invalid when Rate is set to "note."
L1 Dly Time	0–1023	Specifies the time elapsed before the LFO effect is applied (the effect continues) after the key is pressed (or released). **After referring to** "How to Apply the LFO" (p. 33), **change the setting until the desired effect is achieved.**

Parameter	Value	Explanation
L1 Dly Keyf	-100–+100	Adjusts the value for the Delay Time parameter depending on the key position, relative to the C4 key (center C). To decrease the time that elapses before the LFO effect is applied (the effect is continuous) with each higher key that is pressed in the upper registers, select a positive (+) value; to increase the elapsed time, select a negative (-) value. Higher values will produce greater change. If you do not want the elapsed time before the LFO effect is applied (the effect is continuous) to change according to the key pressed, set this to "0." 
L1 Fade Mod	ON-IN, ON-OUT, OFF-IN, OFF-OUT	Specifies how the LFO will be applied. **After referring to** "How to Apply the LFO" (p. 33), **change the setting until the desired effect is achieved.**
L1 Fade Time	0–1023	Specifies the time over which the LFO amplitude will reach the maximum (minimum). * **After referring to "How to Apply the LFO" (p. 33), change the setting until the desired effect is achieved.**
L1 Key Trig	OFF, ON	Specifies whether the LFO cycle will be synchronized to begin when the key is pressed (ON) or not (OFF).
L1 Pit Depth	-100–+100	Specifies how deeply the LFO will affect pitch. * **If OSC Type is other than VA, the range is limited to -63–+63.**
L1 Flt Depth	-100–+100	Specifies how deeply the LFO will affect the cutoff frequency.
L1 Amp Depth	-100–+100	Specifies how deeply the LFO will affect the volume.
L1 Pan Depth	-63–+63	Specifies how deeply the LFO will affect the pan. **MEMO** Positive (+) and negative (-) value for the Depth parameter result in differing kinds of change in pitch and volume. For example, if you set the Depth parameter to a positive (+) value for one partial, and set another partial to the same numerical value, but make it negative (-), the modulation phase for the two partials will be the reverse of each other. This allows you to shift back and forth between two different partials, or combine it with the Pan setting to cyclically change the location of the sound image.
L1 Phase Pos	Specifies the LFO's starting phase value when Key Trigger is ON. * **This has no effect if Waveform is RND, S&H, or CHS.**	
	0	1 cycle
	1	1/4 cycle
	2	1/2 cycle
	3	3/4 cycle
STEP LFO1		
L1 Step Length	1–16	This is effective if Waveform is STEP. Specifies the step size that is looped.
L1 Stp1–16 Depth	-72–+72	This is effective if Waveform is STEP. Specify the Depth value of each step. If you want to specify this in pitch scale degrees (100 cents), the settings are as follows. 1 Pitch Depth: 51, Step: multiples of 6 … up to one octave of change 2 Pitch Depth: 74, Step: multiples of 3 … up to two octaves of change 3 Pitch Depth: 89, Step: multiples of 2 … up to three octaves of change * **If OSC Type is not VA, the Pitch Depth setting range is limited to -63–+63, so only "1" above is possible.**
L1 Stp1–16 Curve	0–36	Specifies the type of curve at each step. ➡ "Step curve types" (p. 32)

Parameter	Value	Explanation
LFO2		
L2 Waveform	Selects the waveform of the LFO.	
	SIN	Sine wave
	TRI	Triangle wave
	SAW-UP	Sawtooth wave
	SAW-DW	Sawtooth wave (negative polarity)
	SQR	Square wave
	RND	Random wave
	TRP	Trapezoidal wave
	S&H	Sample & Hold wave (one time per cycle, LFO value is changed)
	CHS	Chaos wave
	VSIN	Modified sine wave. The amplitude of a sine wave is randomly varied once each cycle.
	STEP	A waveform generated by the data specified by LFO Step 1–16. This produces stepped change with a fixed pattern similar to a step modulator.
L2 Rate Sync	OFF, ON	Set this ON if you want the LFO rate to synchronize with the tempo.
L2 Rate Note	1/64T, 1/64, 1/32T, 1/32, 1/16T, 1/32., 1/16, 1/8T, 1/16., 1/8, 1/4T, 1/8., 1/4, 1/2T, 1/4., 1/2, 1T, 1/2., 1, 2T, 1., 2, 4	This is effective if Rate Sync is ON. Specifies the LFO rate in terms of a note value.
L2 Rate	0–1023	This is effective if Rate Sync is OFF. Specifies the LFO rate without regard to the tempo. Higher values produce a faster LFO rate (a shorter cycle).
L2 Offset	-100–+100	Raises or lowers the LFO waveform relative to the central value (pitch or cutoff frequency). Positive (+) value will move the waveform so that modulation will occur from the central value upward. Negative (-) value will move the waveform so that modulation will occur from the central value downward.
L2 Rate Detn	0–127	Subtly changes the LFO cycle speed (Rate parameter) each time you press a key. Higher values produce greater change. This parameter is invalid when Rate is set to "note."
L2 Dly Time	0–1023	Specifies the time elapsed before the LFO effect is applied (the effect continues) after the key is pressed (or released). * **After referring to "How to Apply the LFO" (p. 33), change the setting until the desired effect is achieved.**
L2 Dly Keyf	-100–+100	Adjusts the value for the Delay Time parameter depending on the key position, relative to the C4 key (center C). To decrease the time that elapses before the LFO effect is applied (the effect is continuous) with each higher key that is pressed in the upper registers, select a positive (+) value; to increase the elapsed time, select a negative (-) value. Higher values will produce greater change. If you do not want the elapsed time before the LFO effect is applied (the effect is continuous) to change according to the key pressed, set this to "0." 
L2 Fade Mod	ON-IN, ON-OUT, OFF-IN, OFF-OUT	Specifies how the LFO will be applied. * **After referring to "How to Apply the LFO" (p. 33), change the setting until the desired effect is achieved.**
L2 Fade Time	0–1023	Specifies the time over which the LFO amplitude will reach the maximum (minimum). * **After referring to "How to Apply the LFO" (p. 33), change the setting until the desired effect is achieved.**
L2 Key Trig	OFF, ON	Specifies whether the LFO cycle will be synchronized to begin when the key is pressed (ON) or not (OFF).

Parameter	Value	Explanation
L2 Pit Depth	-100–+100	Specifies how deeply the LFO will affect pitch. * **If OSC Type is other than VA, the range is limited to -63–+63.**
L2 Flt Depth	-100–+100	Specifies how deeply the LFO will affect the cutoff frequency.
L2 Amp Depth	-100–+100	Specifies how deeply the LFO will affect the volume.
L2 Pan Depth	-63–+63	Specifies how deeply the LFO will affect the pan. **MEMO** Positive (+) and negative (-) value for the Depth parameter result in differing kinds of change in pitch and volume. For example, if you set the Depth parameter to a positive (+) value for one partial, and set another partial to the same numerical value, but make it negative (-), the modulation phase for the two partials will be the reverse of each other. This allows you to shift back and forth between two different partials, or combine it with the Pan setting to cyclically change the location of the sound image.
L2 Phase Pos	Specifies the LFO's starting phase value when Key Trigger is ON. * **This has no effect if Waveform is RND, S&H, or CHS.**	
	0	1 cycle
	1	1/4 cycle
	2	1/2 cycle
	3	3/4 cycle
STEP LFO2		
L2 Step Length	1–16	This is effective if Waveform is STEP. Specifies the step size that is looped.
L2 Stp1–16 Depth	-72–+72	This is effective if Waveform is STEP. Specify the Depth value of each step. If you want to specify this in pitch scale degrees (100 cents), the settings are as follows. 1 Pitch Depth: 51, Step: multiples of 6 … up to one octave of change 2 Pitch Depth: 74, Step: multiples of 3 … up to two octaves of change 3 Pitch Depth: 89, Step: multiples of 2 … up to three octaves of change * **If OSC Type is not VA, the Pitch Depth setting range is limited to -63–+63, so only "1" above is possible.**
L2 Stp1–16 Curve	0–36	Specifies the type of curve at each step. ➡ "Step curve types" (p. 32)
EQ		
EQ Sw	OFF, ON	Turns the equalizer on/off for each partial.
Gain L	-24.0–+24.0 [dB]	Gain of the low range.
Gain M	-24.0–+24.0 [dB]	Gain of the middle range.
Gain H	-24.0–+24.0 [dB]	Gain of the high range
Freq L	20–16000 [Hz]	Frequency of the low range.
Freq M	20–16000 [Hz]	Frequency of the middle range.
Freq H	20–16000 [Hz]	Frequency of the high range.
Mid Q	0.5–16.0	Width of the middle range. Set a higher value to narrow the range to be affected.
Output		
Out Assign	DRY, MFX	Specifies how the sound of each partial will be output.
Cho Send	0–127	Specifies the level of the signal sent to the chorus for each partial.
Rev Send	0–127	Specifies the level of the signal sent to the reverb for each partial.

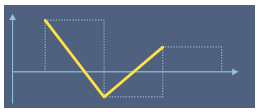
Parameter	Value	Explanation
Control		
Env Mode	NO-SUS, SUSTAIN	If this is set to SUSTAIN, the Envelope Level 3 is held from when the envelope Time 3 has elapsed until note-off. When note-off occurs, the envelope transitions from the current value to the Time 4 segment (release segment). If this is set to NO-SUS, the envelope transitions to the release segment after passing Time 3 regardless of the note-off timing, operating according to the times specified by the envelope. 
ADSR Env Sw	OFF, ON	This imitates the operation of the ADSR envelope that is provided on an analog synthesizer. If ADSR Env Sw is ON, the "Time 2" parameters of Pitch/Filter/Amp Env Time respectively are ignored, and only the "Level 3" parameters of Pitch/Filter/Amp Env Level are valid.
Damp Free	OFF, 1–127	For notes above the specified note number, the Env Mode operates as NO-SUS. Use this to simulate the undamped region of a piano sound.
DF Dcy Offset	-100–+100	Specifies a fine adjustment to the time over which the sound decays when the Damper Free effect is applied.
Rx Bend	OFF, ON	Specifies for each partial whether MIDI pitch bend messages are received (ON) or not received (OFF).
Rx Expr	OFF, ON	Specifies for each partial whether MIDI expression messages are received (ON) or not received (OFF).
Rx Hold	OFF, ON	Specifies for each partial whether MIDI hold 1 messages are received (ON) or not received (OFF).
Redamp Sw	OFF, ON	If Redamp Sw is ON, you can perform the Half Damper operations used for piano sounds. However, the following conditions must be satisfied in order to use this operation. • Env Mode is NO-SUS • Amp Env's Level 1 and 2 are 1 or greater • Amp Env's Times are Time 3 > Time4
Soft Eq Sens	0–100	Increases the proportion by which the EQ's HighGain is lowered by the amount of pedal. With a setting of 0, this has no effect.
Matrix Ctrl1–4		
Mctl1 Src1–4 **Mctl2 Src1–4** **Mctl3 Src1–4** **Mctl4 Src1–4**	Sets the MIDI message used to change the partial parameter with the Matrix Control.	
	OFF	Matrix control will not be used.
	CC01–CC31, CC33–CC95	Controller number 1–31, 33–95
	BEND	Pitch bend
	AFT	Aftertouch
	SYS-CTRL1–4	MIDI messages assigned by the SYSTEM parameters SYS-CTRL 1–4
	VELOCITY	Velocity (pressure you press a key with)
	KEYFOLLOW	Keyfollow (keyboard position with C4 as 0)
	TEMPO,	Tempo specified by the tempo assign source
	LFO1, LFO2	LFO 1 LFO 2
	PIT-ENV	Pitch envelope
	TVF-ENV	Filter envelope
	TVA-ENV	Amp envelope

Parameter	Value	Explanation
Mctl1 Src1–4 **Mctl2 Src1–4** **Mctl3 Src1–4** **Mctl4 Src1–4**		* **Velocity and Keyfollow correspond to Note messages.** * **Although there are no MIDI messages for LFO 1 through AMP Envelope, they can be used as Matrix Control. In this case, you can change the partial settings in realtime by playing tones.** * **If you want to use common controllers for the entire JUPITER-X/Xm, select "SYS-CTRL1"–"SYS-CTRL4." MIDI messages used as System Control 1–4 are set with the System Control Source1–4. For details, refer to "Reference Manual" (PDF).** **NOTE** • There are parameters that determine whether or not Pitch Bend, Controller Number 11 (Expression) and Controller Number 64 (Hold 1) are received (p. 31). When these settings are "ON," and the MIDI messages are received, then when any change is made in the settings of the desired parameter, the Pitch Bend, Expression, and Hold 1 settings also change simultaneously. If you want to change the targeted parameters only, then set these to "OFF." • There are parameters that let you specify whether specific MIDI messages will be received for each zone in a scene (p. 6). When a tone with Matrix Control settings is assigned to a zone, confirm that any MIDI messages used for the Matrix Control will be received. If the JUPITER-X/Xm is set up such that reception of MIDI messages is disabled, then the Matrix Control will not function.
Mctl1 Dst1–4 **Mctl2 Dst1–4** **Mctl3 Dst1–4** **Mctl4 Dst1–4**	Selects the partial parameter that is to be controlled when using the Matrix Control. When not controlling parameters with the Matrix Control, set this to "OFF." Up to four parameters can be specified for each Matrix Control, and controlled simultaneously.	
	OFF	Matrix control will not be used.
	PCH	Changes the pitch.
	CUT	Changes the cutoff frequency.
	RES	Emphasizes the overtones in the region of the cutoff frequency, adding character to the sound.
	LEV	Changes the volume level.
	PAN	Changes the pan.
	CHO	Changes the amount of chorus.
	REV	Changes the amount of reverb.
	PIT-LFO1, PIT-LFO2	Changes the vibrato depth.
	TVF-LFO1, TVF-LFO2	Changes the wah depth.
	TVA-LFO1, TVA-LFO2	Changes the tremolo depth.
	PAN-LFO1, PAN-LFO2	Changes the effect that the LFO will have on pan.
	LFO1-RATE LFO2-RATE	Changes the speed of the LFO cycles. The speed will not change if LFO Rate is set to "note."
	PIT-ATK	Changes the Time 1 of the pitch envelope.
	PIT-DCY	Changes the Time 2 and Env Time 3 of the pitch envelope.
	PIT-REL	Changes the Time 4 of the pitch envelope.
	TVF-ATK	Changes the Time 1 of the FLT envelope.
	TVF-DCY	Changes the Time 2 and Env Time 3 of the FLT envelope.
	TVF-REL	Changes the Time 4 of the FLT envelope.
	TVA-ATK	Changes the Time 1 of the AMP envelope.
	TVA-DCY	Changes the Time 2 and Env Time 3 of the AMP envelope.
	TVA-REL	Changes the Time 4 of the AMP envelope.

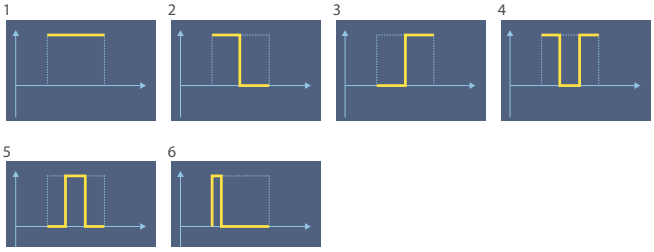
Parameter	Value	Explanation
Mctl1 Dst1–4 Mctl2 Dst1–4 Mctl3 Dst1–4 Mctl4 Dst1–4	PMT	If the Matrix Control is used to split partials, set the PMT Velocity Control (p. 18) to "OFF." • If the Matrix Control is used to split partials, we recommend setting the Sens (p. 32) to "+63." Selecting a lower value may prevent switching of the partials. Furthermore, if you want to reverse the effect, set the value to "-63." • If you want to use matrix control to switch smoothly between partials, use the Velocity Fade Lower and Velocity Fade Upper (p. 24). The higher the values set, the smoother the switch is between the partials.
	FXM	Changing the depth of frequency modulation produced by FXM
	MFX-CTL1–4	Applies a change to MFX CONTROL 1–4 Source. If this is specified for more than one partial, the result will be the summed values.
	PW	Applies change to PW.
	PWM	Applies change to PWM.
	FAT	Applies change to FAT.
	XMOD	This setting is valid only for the carrier partial (Partial 1 or 3), and applies change to the XMd12 Dpth or XMd34 Dpth.
	LFO1_STP LFO2_STP	This is valid if the LFO1/LFO2 Waveform is STEP; it specifies the step position. In this case, the Sns value is ignored.
	SSAW-DTN	This is effective if OSC Type is SuperSAW; it applies change to Super-SAW Detune.
	PIT_DPTH	Changes the depth of the Pitch envelope.
	TVF_DPTH	Changes the depth of the Filter envelope.
	TVA_DPTH	Changes the depth of the AMP envelope.
	XMOD2	This is effective when Structure 1-2 (3-4) is XMOD2; it applies change to XMd2 12 (34) Dpth.
	ATT	Changes the OSC level.
	R-OSC1-LV	This is valid only for Partial 1 and 3; when Structure 12 (or Structure 34 in the case of Partial 3) is RING, this changes the OSC level of Partial 1 (or 3 in the case of Partial 3).
	R-OSC2-LV	This is valid only for Partial 1 and 3; when Structure 12 (or Structure 34 in the case of Partial 3) is RING, this changes the OSC level of Partial 2 (or 4 in the case of Partial 3).
	X-OSC1-LV	This is valid only for Partial 1 and 3; when Structure 12 (or Structure 34 in the case of Partial 3) is XMOD/XMOD2, this changes the OSC level of Partial 1 (or 3 in the case of Partial 3).
	X-OSC2-LV	This is valid only for Partial 1 and 3; when Structure 12 (or Structure 34 in the case of Partial 3) is XMOD/XMOD2, this changes the OSC level of Partial 2 (or 4 in the case of Partial 3).
Mctl1 Sns1–4 Mctl2 Sns1–4 Mctl3 Sns1–4 Mctl4 Sns1–4	-63–+63	Specify the effective depth of the matrix controls. To make an increase in the currently selected value (to get higher values, move to the right, increase rates, and so on), select a positive (+) value; to make a decrease in the currently selected value (to get lower values, move to the left, decrease rates, and so on), select a negative (-) value. For either positive or negative value, greater absolute values will allow greater amounts of change. Set this to "0" if you don't want to apply the effect.

Step curve types

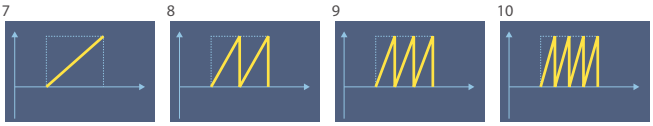
Step Curve 0



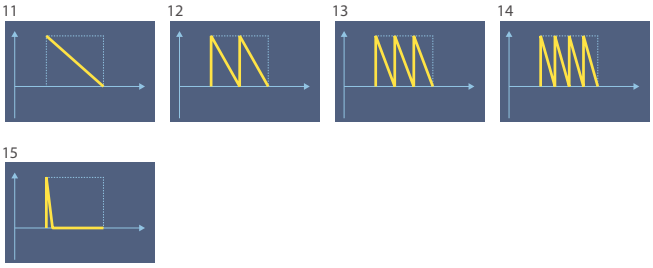
Step Curve 1–6 (variations of square wave)



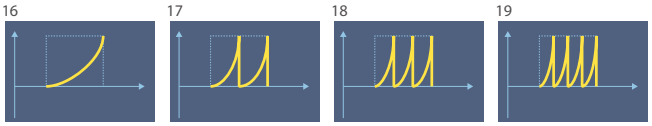
Step Curve 7–10 (variations of ascending saw)



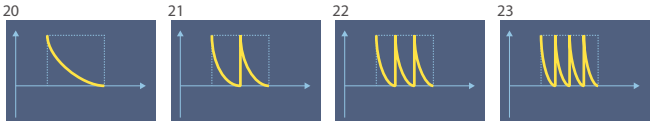
Step Curve 11–15 (variations of descending saw)



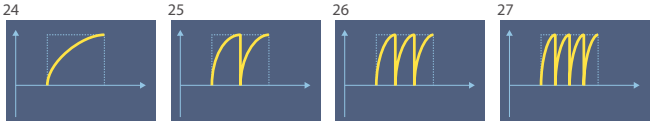
Step Curve 16–19 (variations of ascending exponential)



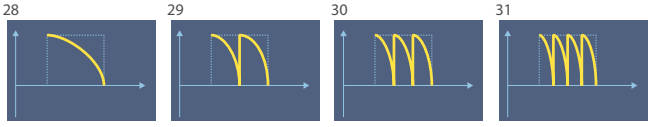
Step Curve 20–23 (variations of descending exponential)



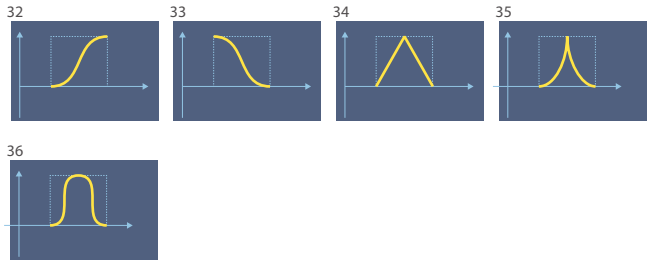
Step Curve 24–27 (variations of ascending charging curve)



Step Curve 28–31 (variations of descending charging curve)



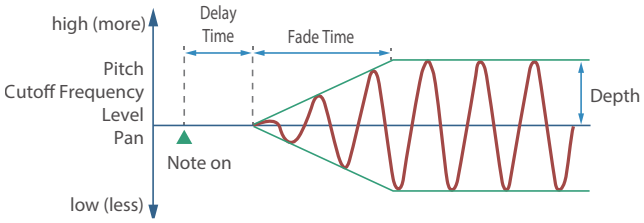
Step Curve 32–36 (other variations)



How to Apply the LFO

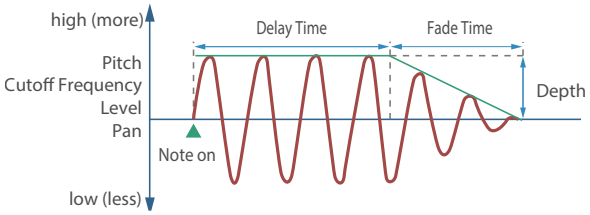
Apply the LFO gradually after the key is pressed

Fade Mod (Fade Mode): ON-IN



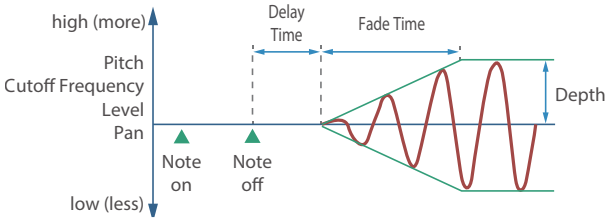
Apply the LFO immediately when the key is pressed, and then gradually begin to decrease the effect

Fade Mod (Fade Mode): ON-OUT



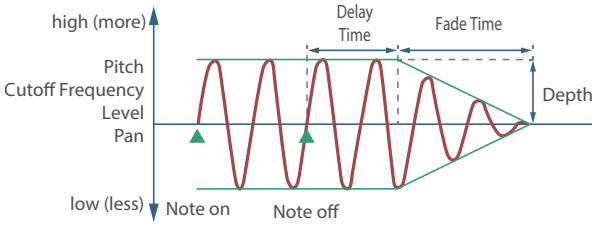
Apply the LFO gradually after the key is released

Fade Mod (Fade Mode): OFF-IN



Apply the LFO from when the key is pressed until it is released, and gradually begin to decrease the effect when the key is released

Fade Mod (Fade Mode): OFF-OUT



List of supported CCs

Parameter	PARTIAL 1	PARTIAL 2	PARTIAL 3	PARTIAL 4
Tone PTL				
Level	16	17	18	19
Fine Tune	21	31	35	46
Cutoff	3	54	55	56
Resonance	9	57	58	59
Filter Env				
Filtr Depth	81	63	79	80
Filtr Time1	83	82	85	87
Filtr Time4	86	102	103	104
Amp Env				
Amp Time1	89	108	109	111
Amp Time4	90	112	114	117
LFO1				
L1 Rate	29	20	22	23
L1 Pit Depth	26	47	48	50
L1 Amp Depth	30	105	106	107
L1 Flt Depth	28	60	61	62
LFO2				
L2 Rate	14	24	25	27
L2 Pit Depth	15	51	52	53

TONE

RD-PIANO

These parameters adjust the resonance (sympathetic resonance) that occurs when you hold down the damper pedal. On an acoustic piano, holding down the damper pedal allows strings other than those that you play to resonate sympathetically with the played strings, creating a richly expansive resonance. This effect simulates that behavior.

* **MODEL RD can be selected for any of the parts. However, when the** RD models are selected only for part 1, the MFX uses the sympathetic resonance effect.

* **The normal MFX is applied when parts 2–4 are selected.**

Parameter	Value	Explanation
SYMPATHETIC RESO		
SymReso Switch	OFF, ON	With the ON setting, the effect is applied.
SymReso Depth	0–127	Effect depth
Cabinet Reso	0–127	Depth of the resonance when the damper pedal is not pressed.

System Parameters

Parameter [1] knob	Value [2] knob	Explanation
SYSTEM - GENERAL		
AGING		
Warm-up	OFF, ON, FAST, FIXED	Specifies whether the character of the sound (pitch variance) changes according to the varying internal temperature of this unit. This has an effect only on analog synthesizer models. The internal temperature value is shown in the upper right of the top screen of the scene.
		OFF: The character of the sound is not affected by the temperature. Nor is there a temperature indication in the SCENE screen.
		ON: The internal temperature starts at the value specified by Aging Init Temp, and changes to the actual temperature (REAL). Although it depends on the temperature difference, the REAL temperature is reached in approximately ten minutes. After reaching the REAL temperature, the setting follows the actual temperature change.
		FAST: The internal temperature starts at the value specified by Aging Init Temp, and then quickly (in approximately ten seconds) changes to the actual temperature (REAL) when you play the keyboard. After reaching the REAL temperature, the setting follows the actual temperature change.
		FIXED: The internal temperature is fixed at the value specified by Aging Init Temp, and the character of the sound is maintained at that point.
Init Temp	REAL, 0–60°C/32–140°F	Specifies the initial internal temperature for Warm-up.
		REAL: The internal temperature that is actually measured will be the initial temperature.
		0–60°C/32–140°F: Virtually specifies an initial internal temperature (Celsius).
Age	OFF, 1–100years	Simulates the effect of aging on the internal components of an analog synthesizer. Higher values affect the sound similarly to the equivalent number of years of aging. This is valid only for sounds of an analog synthesizer model.
GENERAL		
MasterTune	415.3–466.2 [Hz]	Adjusts the overall tuning. The displayed value is the frequency of the A4 key (middle A).
MasKeyShift	-24–24	Shifts the JUPITER-X's overall pitch range in semitone steps.
ScaleTuneSw	OFF, ON	Specifies whether the scene's SCALE TUNE setting is enabled (ON) or disabled (OFF).
USB In Lev	0–127	Adjusts the audio input level of the USB COMPUTER port.
USB Out Lev	0–127	Adjusts the audio output level to the USB COMPUTER port.
AuxIn/BT InLev	0–127	Adjusts the input level of the AUX IN jack and BT In.
USB Audio Thru	OFF, ON	Specifies whether the audio input of the USB COMPUTER port is mixed into the audio output of the USB COMPUTER port. If you don't want it to be output as audio, turn this "OFF."
AUXIN USB Thru	OFF, ON	Specifies whether the input from the AUX IN jack is mixed into the audio output of the USB COMPUTER port. If you don't want it to be output as audio, turn this "OFF."
LineOut Gain	-12–0–+12 [dB]	Adjusts the output gain of OUTPUT/PHONES.
Speaker Sw	OFF, ON, AUTO	Specifies whether sound is output from this unit's speakers.
		OFF: Sound is not output from the speakers.
		ON: Sound is output from the speakers.
		AUTO: The "OFF" setting is used if headphones are inserted, and the "ON" setting is used if they are not inserted.
SPOut Gain	-12–0 [dB]	Adjusts the output gain of the speakers.

Parameter [1] knob	Value [2] knob	Explanation
Auto Off	OFF, 30 [min], 240 [min]	Specifies whether the unit will turn off automatically after a certain time has elapsed. If you don't want the unit to turn off automatically, choose "OFF" setting.
LED On Bright	0–31	Adjusts the brightness when the LEDs are lit.
LED OffBright	0–30	You can specify that an LED remains lit at a diminished brightness even when it is "off." If this is set to 0, the LED will be unlit when off. JUPITER-Xm * This is valid only when the JUPITER-Xm is operating with the AC adaptor.
LCD Contrast	1–10	Adjusts the contrast of the display.
Scene Lock	OFF, ON	Specifies whether a confirmation screen appears when you switch scenes.
		OFF: When you switch scenes, the scene changes immediately, and no confirmation screen appears.
		ON: When you switch scenes, a confirmation screen appears. To switch scenes, use the PAGE [<] [>] buttons to select "Yes," and then press the [ENTER] button.
Startup Scene	01-01–16-16	Specifies the scene that is selected at start-up.
Bluetooth		
Bluetooth Sw	OFF, ON	Enables (ON) or disables (OFF) Bluetooth communication.
Pairing	-	Executing pairing for Bluetooth audio.
Bluetooth ID	OFF, 1–9	Specifies the number added to the end of this unit's device name shown in a Bluetooth-connected app.
SYSTEM - ARP/TEMPO		
ARPEGGIO		
Set Tone	OFF, ON	Specifies whether the current sound settings are kept while only the phrase is switched (OFF) or both the phrase and the sound settings are switched (ON).
Set DrumKit	OFF, ON	Specifies whether the current sound settings are kept while only the rhythm is switched (OFF) or both the rhythm and the sound settings are switched (ON).
Set Tempo	OFF, ON	Specifies whether the current tempo setting is kept while only the rhythm is switched (OFF) or both the rhythm and the tempo settings are switched (ON).
Arp Sync	OFF, BEAT, MEASURE	Specifies how the arpeggio is synchronized when the JUPITER-X is connected to an external device and is playing in synchronization.
		OFF: The arpeggio does not synchronize to the measure or beat. The arpeggio starts the moment that MIDI messages are received.
		BEAT: The arpeggio synchronizes to the beat. The arpeggio starts at the next beat after MIDI is received.
		MEASURE: The arpeggio synchronizes to the measure. The arpeggio starts at the first beat of the next measure after MIDI is received.
TEMPO/SYNC		
Tempo	20.00–300.00	Specifies the system tempo.
Tempo Src	SCENE, SYS	When you switch scenes, this setting specifies whether to use the system tempo (SYS) or the tempo stored in the scene (SCENE).
Sync Mode	AUTO, INT, MIDI, USB COM, USB MEM	Specifies the synchronization signal according to which the JUPITER-Xm operates.
Sync Out	OFF, MIDI, USB COM, MIDI/USBCM, USB MEM, ALL	Specifies the connector from which MIDI clock messages etc. are output.
SYSTEM - CONTROLLER		
CONTROLLER		
Velocity	REAL, 1–127	Specifies the velocity value that is transmitted when you play the keyboard.
Velo Crv	LIGHT, MEDIUM, HEAVY	Specifies "Strength" for keyboard touch.
Velo Offset	-10–+9	Adjusts the keyboard velocity curve.

Parameter [1] knob	Value [2] knob	Explanation
Knob Mode	DIRECT, CATCH	Specifies whether the parameter value corresponding to a controller is immediately updated when you operate that controller (DIRECT) or only after the controller reaches the same position as the parameter's current value (CATCH).
Aft Sens JUPITER-X only	0–100	Specifies the aftertouch sensitivity.
BUTTON Func		
Source	SCENE, SYS	Specifies whether the functions assigned to these buttons follows the settings of the currently selected scene (SCENE) or the system settings (SYS).
S1 Func	For the values, refer to "List of functions that can be assigned to the controllers" (p. 37)	Specifies the function assigned to the [S1] button.
S1 Mode	LATCH, MOMENTARY	Specifies how the button operates.
S2 Func	For the values, refer to "List of functions that can be assigned to the controllers" (p. 37)	Specifies the function assigned to the [S2] button.
S2 Mode	LATCH, MOMENTARY	Specifies how the button operates.
S3 Func	For the values, refer to "List of functions that can be assigned to the controllers" (p. 37)	Specifies the function assigned to the [S3] button.
S3 Mode	LATCH, MOMENTARY	Specifies how the button operates.
SLIDER Func		
SL1 Source	SCENE, SYS	Specifies whether the function assigned to the SL1 slider follows the setting of the currently selected scene (SCENE) or the system setting (SYS).
SL1	For the values, refer to "List of functions that can be assigned to the controllers" (p. 37)	Specifies the function assigned to the [SL1] slider.
SL2 Source	SCENE, SYS	Specifies whether the function assigned to the SL2 slider follows the setting of the currently selected scene (SCENE) or the system setting (SYS).
SL2	For the values, refer to "List of functions that can be assigned to the controllers" (p. 37)	Specifies the function assigned to the [SL2] slider.
PEDAL Func		
Hold Source	SCENE, SYS	Specifies whether the function assigned to the pedal connected to the HOLD jack follows the setting of the currently selected scene (SCENE) or the system setting (SYS).
Hold	For the values, refer to "List of functions that can be assigned to the controllers" (p. 37)	Specifies the function assigned to the pedal connected to the HOLD jack.
Hold Pole	STANDARD, REVERSE	Specifies the polarity of the pedal connected to the HOLD jack.
Ctrl Source	SCENE, SYS	Specifies whether the function assigned to the pedal connected to the CTRL jack follows the setting of the currently selected scene (SCENE) or the system setting (SYS).
Ctrl	For the values, refer to "List of functions that can be assigned to the controllers" (p. 37)	Specifies the function assigned to the pedal connected to the CTRL jack.

Parameter [1] knob	Value [2] knob	Explanation
PART Btn Asgn		
JUPITER-X 1-5 1-5+(S) 6-10 6-10+(S) 11-15 11-15+(S) JUPITER-Xm 1-5 1-5+(S) 6-10 6-10+(S)	No Assign, PartSel, Part+KeySw, KeySw, PartSw, ArpSw, EfxSw	Assign the function of the [1]–[5] ([6]–[10]) buttons and their function when pressed while holding down the [SHIFT] button. **No Assign:** Nothing is assigned. **PartSel:** Specifies the current part that is controlled from the panel or in the screen. The part played by the keyboard does not change. **Part+KeySw:** Simultaneously operates the current part and the Keyboard SW, allowing you to play the selected part from the keyboard. By pressing multiple parts simultaneously, you can turn the Keyboard SW on for multiple parts. **KeySw:** Specifies the keyboard switch, switching the part that is played from the keyboard. **PartSw:** Switches on/off whether the part produces sound. You can use this in a DJ-like manner to add or remove parts while you perform. **ArpSw:** Specifies whether each part is played by the arpeggio. **EfxSw:** From the left side, the buttons switch MFX, DRIVE, REV, DLY, and CHO on/off for all parts simultaneously.
Wheel Func JUPITER-X only		
Wheel1 Source	SCENE, SYS	Specifies whether the function assigned to the [WHEEL 1] wheel follows the setting of the currently selected scene (SCENE) or follows the system setting (SYS).
Wheel1	For the values, refer to "List of functions that can be assigned to the controllers" (p. 37)	Specifies the function assigned to the [WHEEL 1] wheel.
Wheel2 Source	SCENE, SYS	Specifies whether the function assigned to the [WHEEL 2] wheel follows the setting of the currently selected scene (SCENE) or follows the system setting (SYS).
Wheel2	For the values, refer to "List of functions that can be assigned to the controllers" (p. 37)	Specifies the function assigned to the [WHEEL 2] wheel.
SYSTEM - MIC IN		
MIC IN		
Mic In Gain	-24.0–+24.0 [dB]	Adjusts the input level of the MIC IN jack.
Mic Power	OFF, ON	If this is "ON," plug-in power (5 V) is supplied to the MIC IN jack.
Rev Send Lev	0–127	Specifies the amount of reverb that is applied to the mic input.
Cho Send Lev	0–127	Specifies the amount of chorus that is applied to the mic input.
Dly Send Lev	0–127	Specifies the amount of delay that is applied to the mic input.
Mic Thru	OFF, ON	If you want the mic to be cut when the vocoder is off, turn this "OFF."
NS		
NS Switch	OFF, ON	Switches the noise suppressor on/off. The noise suppressor is a function that suppresses noise during periods of silence.
NS Threshold	-96–0 [dB]	Adjusts the volume at which noise suppression starts to be applied.
NS Release	0–127	Adjusts the time from when noise suppression starts until the volume reaches 0.
COMP		
CompSwitch	OFF, ON	Specifies whether the mic compressor (a compressor applied to the mic input) is used (ON) or not used (OFF).
CompAttack	0.1, 1, 2, ..., 100 [ms]	Specifies the time from when the input to the mic compressor exceeds the Comp Thres level until the volume is compressed.
CompRelease	10, 20, ..., 1000 [ms]	Specifies the time from when the input to the mic compressor falls below the Comp Thres level until compression is no longer applied.

Parameter [1] knob	Value [2] knob	Explanation
CompThreshold	-60–0 [dB]	Specifies the level at which the mic compressor starts applying compression.
CompRatio	1: 1, 2: 1, …4: 1, 8: 1, 16: 1, 32: 1, INF: 1	Specifies the compression ratio for the mic compressor.
CompKnee	0–30 [dB]	Smooths the transition until the mic compressor starts to be applied. Higher values produce a smoother transition.
CompOutGain	-24.0, -23.5, … 0, …, +24.0 [dB]	Specifies the output volume of the mic compressor.
SYSTEM - MIDI		
MIDI		
Ctrl Ch	1–16, OFF	Specifies the MIDI receive channel on which MIDI messages (program change and bank select) from an external MIDI device can be received to switch programs. If you don't want programs to be switched from a connected MIDI device, turn this "OFF."
Ctrl Src Sel	SYS, SCENE	**SYS:** SysCtrlSrc1–4 are used for tone control. **SCENE:** The scene's CtrlSrc1–4 settings are used for tone control.
SysCtrlSrc1 SysCtrlSrc2 SysCtrlSrc3 SysCtrlSrc4	OFF, CC01-CC31, CC33-CC95, BEND, AFT	Specify the MIDI messages that will be used as system controls.
Soft Thru	OFF, ON	If this is ON, MIDI messages that are input from the MIDI IN connector are re-transmitted without change from the MIDI OUT connector.
USB-MIDIThru	OFF, ON	Specifies whether MIDI messages received at the USB COMPUTER port/MIDI IN connector are retransmitted without change from the MIDI OUT connector/USB COMPUTER port (ON) or are not retransmitted (OFF).
USB Driver	GENERIC, VENDOR	Specifies the USB driver setting.
Remote Kbd	OFF, MIDI IN, USB COM, USB MEM	Sets which connector is used for input when you use an external MIDI keyboard instead of the keyboard of the JUPITER-X. In this case, the MIDI transmit channel of the external MIDI keyboard does not matter. Normally you will leave this "OFF."
Local Sw	OFF, ON	Turns on/off the connection between the controller section (keyboard, PITCH, MODE, panel buttons and sliders, pedals, etc.) and the internal sound engine.
Device ID	17–32	When transmitting and receiving system exclusive messages, the device ID numbers of both devices must match.
Tone CC Map	OFF, ON	Sets whether control change messages (CC) for the tone parameters are transmitted/received (ON) or not (OFF).
MIDI Tx		
Tx PC	OFF, ON	Specifies whether program change messages will be transmitted (ON) or not be transmitted (OFF).
Tx Bank	OFF, ON	Specifies whether bank select messages will be transmitted (ON) or not be transmitted (OFF).
Tx Edit	OFF, ON	Specify whether changes you make in the settings of a program will be transmitted as system exclusive messages (ON), or will not be transmitted (OFF).
MIDI Rx		
Rx PC	OFF, ON	Specifies whether program change messages will be received (ON) or not be received (OFF).
Rx Bank	OFF, ON	Specifies whether bank select messages will be received (ON) or not be received (OFF).
Rx Exclusive	OFF, ON	Specifies whether system exclusive messages will be received (ON) or not be received (OFF).

Parameter [1] knob	Value [2] knob	Explanation
SYSTEM COLOR SET (*)		
Color Set	1–10	Saves the color settings in each Set number, and lets you switch between sets.
Arp L Off Arp R Off Func L Off Func R Off Sc1–4 Off Sc5-8 Off Sc9-12 Off Sc13-16 Off Model Off Categ Off User Off Part Off Part+KeySw Off KeySw Off PartSw Off ArpSw Off EfxSw Off No Assign St1–4 Off St5-8 Off St9-12 Off St13-16 Off Arp L On Arp R On Func L On Func R On Sc1–4 On Sc5-8 On Sc9-12 On Sc13-16 On Model On Categ On User On Part On Part+KeySw On KeySw On PartSw On ArpSw On EfxSw On St1-4 On St5-8 On St9-12 On St13-16 On	Off, O, Y, Y(b), W, W(b), G, G(b), B, B(b), R, R(b), V, V(b), W2, R2	Specifies the illumination color of buttons to which a function is assigned when the corresponding function is on or off. **Off:** Unlit **O:** orange, **Y:** yellow, **W:** white, **G:** green, **B:** blue, **R:** red, **V:** violet, **W2:** high-brightness white, **R2:** high-brightness red (b) indicates blinking.

List of functions that can be assigned to the controllers

Function	S1 Func S2 Func S3 Func	SL1 SL2	HOLD	Ctrl	Wheel1	Wheel2
					JUPITER-X only	
OFF	✓	✓	✓	✓	✓	✓
CC01–31, 32 (OFF), 33–95	✓	✓	✓	✓	✓	✓
AFTERTOUCH	✓	✓	✓	✓	✓	✓
MONO/POLY	✓		✓			
SCENE DOWN	✓		✓			
SCENE UP	✓		✓			
TONE DOWN	✓		✓			
TONE UP	✓		✓			
PANEL DEC	✓		✓			
PANEL INC	✓		✓			
CHO SW	✓		✓			
REV SW	✓		✓			
DLY SW	✓		✓			
ARP SW	✓		✓			
ARP HOLD	✓		✓			
DETECT KEYS	✓		✓			
DETECT BEAT	✓		✓			
UNISON SW	✓		✓			
BEND MODE	✓		✓			
AUTO TUNING	✓		✓			
TAP TEMPO	✓		✓			
START/STOP	✓		✓			
DRV SW	✓		✓			
VOC/MIC	✓		✓			
BEND DOWN		✓		✓		✓
BEND UP		✓		✓		✓
CHO LEVEL		✓		✓		✓
REV LEVEL		✓		✓		✓
DLY LEVEL		✓		✓		✓
ARP SHUFFLE		✓		✓		✓
ARP DURATION		✓		✓		✓
PART FADE1		✓		✓		✓
PART FADE2		✓		✓		✓
LEVEL P-1		✓		✓		✓
LEVEL P-2		✓		✓		✓
LEVEL P-3		✓		✓		✓
LEVEL P-4		✓		✓		✓
LEVEL P-R		✓		✓		✓
AGE		✓		✓		✓

SYSTEM EFFECT: Cho

Parameter	Value	Explanation
Source	SCENE	Choose "SCENE" if you want to use the chorus settings that are assigned to the scene. ➡ "SCENE EFFECT: Cho (Chorus)" (p. 7)
	SYS	Choose "SYS" if you want to use the chorus settings that are assigned to the system. If this is set to "SYS," you can edit the chorus type and the various parameters.
Switch	OFF, ON	Switches chorus on/off.
ChoType	➡ "Chorus Parameters" (p. 7)	
Level	0–127	Specifies the output level of the sound with chorus applied.
Rev Send	0–127	Specifies the send level to reverb.
Chorus Parameters	Edit the parameters of the selected chorus. The available parameters differ depending on the type of chorus you selected in ChoType. ➡ "Chorus Parameters" (p. 7)	

SYSTEM EFFECT: Dly

Parameter	Value	Explanation
Source	SCENE	Choose "SCENE" if you want to use the delay settings that are assigned to the scene. ➡ "SCENE EFFECT: Dly (Delay)" (p. 9)
	SYS	Choose "SYS" if you want to use the delay settings that are assigned to the system. If this is set to "SYS," you can edit the delay type and the various parameters.
Switch	OFF, ON	Switches delay on/off.
DlyType	➡ "Delay Parameters" (p. 9)	
Level	0–127	Specifies the output level of the sound with delay applied.
Rev Send	0–127	Specifies the send level to reverb.
Delay Parameters	Edit the parameters of the selected delay. The available parameters differ depending on the type of chorus you selected in DlyType. ➡ "Delay Parameters" (p. 9)	

SYSTEM EFFECT: Rev

Parameter	Value	Explanation
Source	SCENE	Choose "SCENE" if you want to use the Reverb settings that are assigned to the scene. ➡ "SCENE EFFECT: Rev (Reverb)" (p. 10)
	SYS	Choose "SYS" if you want to use the Reverb settings that are assigned to the system. If this is set to "SYS," you can edit the Reverb type and the various parameters.
Switch	OFF, ON	Switches the reverb on/off.
RevType	➡ "Reverb Parameters" (p. 10)	
Level	0–127	Specifies the output level of the sound with reverb applied.
Reverb Parameters	Edit the parameters of the selected reverb type. The available parameters differ depending on the type of reverb you selected in RevType. ➡ "Reverb Parameters" (p. 10)	

SYSTEM EQ/COMP

Parameter	Value	Explanation
MASTER EQ		
Switch	OFF, ON	Specifies whether the mastering EQ (an equalizer applied to the entire sound generator of the JUPITER-X/Xm) is used (ON) or not used (OFF).
In Gain	-24–+24 [dB]	Adjusts the amount of boost/cut for the input to the EQ.
Low Gain	-24–+24 [dB]	Gain of the low range.
Low Freq	20–16000 [Hz]	Frequency of the low range.
Mid1 Gain	-24–+24 [dB]	Gain of the middle frequency range 1.
Mid1 Freq	20–16000 [Hz]	Frequency of the middle range 1.
Mid1 Q	0.5, 1.0, 2.0, 4.0, 8.0, 16.0	Width of the middle frequency range 1. Set a higher value to narrow the range to be affected.
Mid2 Gain	-24–+24 [dB]	Gain of the middle frequency range 2.
Mid2 Freq	20–16000 [Hz]	Frequency of the middle range 2.
Mid2 Q	0.5, 1.0, 2.0, 4.0, 8.0, 16.0	Width of the middle frequency range 2. Set a higher value to narrow the range to be affected.
Mid3 Gain	-24–+24 [dB]	Gain of the middle frequency range 3.
Mid3 Freq	20–16000 [Hz]	Frequency of the middle range 3.
Mid3 Q	0.5, 1.0, 2.0, 4.0, 8.0, 16.0	Width of the middle frequency range 3. Set a higher value to narrow the range to be affected.
High Gain	-24–+24 [dB]	Gain of the high range
High Freq	20–16000 [Hz]	Frequency of the high range.
MASTER COMP		
Switch	OFF, ON	Specifies whether the mastering COMP (a compressor applied to the entire sound generator of the JUPITER-X/Xm) is used (ON) or not used (OFF).
Low Attack	0.1–100 [ms]	Specifies the time from when the input exceeds Low Thres until compression is applied to the volume of the low-frequency band.
Low Rels	10–1000 [ms]	In a state when compression is already being applied, this specifies the time from when the input decreases below Low Thres until the low-frequency band stops being compressed.
Low Thres	-60–0 [dB]	Specifies the volume level at which compression starts for the low-frequency band.
Low Ratio	1: 1, 2: 1, 3: 1, 4: 1, 8: 1, 16: 1, 32: 1, INF: 1	Specifies the compression ratio for the low-frequency band.
Low Knee	0–30 [dB]	This is a function that smooths the onset of compression from the uncompressed state; it gradually applies compression starting earlier than Low Thres. Higher values produce a smoother transition.
Low Gain	-24–+24 [dB]	Specifies the output volume of the low-frequency band.
Mid Attack	0.1–100 [ms]	Specifies the time from when the input exceeds Mid Thres until compression is applied to the volume of the mid-frequency band.
Mid Rels	10–1000 [ms]	In a state when compression is already being applied, this specifies the time from when the input decreases below Mid Thres until the mid-frequency band stops being compressed.
Mid Thres	-60–0 [dB]	Specifies the volume level at which compression starts for the mid-frequency band.
Mid Ratio	1: 1, 2: 1, 3: 1, 4: 1, 8: 1, 16: 1, 32: 1, INF: 1	Specifies the compression ratio for the mid-frequency band.
Mid Knee	0–30 [dB]	This is a function that smooths the onset of compression from the uncompressed state; it gradually applies compression starting earlier than Mid Thres. Higher values produce a smoother transition.
Mid Gain	-24–+24 [dB]	Specifies the output volume of the mid-frequency band.
High Attack	0.1–100 [ms]	Specifies the time from when the input exceeds High Thres until compression is applied to the volume of the high-frequency band.
High Rels	10–1000 [ms]	In a state when compression is already being applied, this specifies the time from when the input decreases below High Thres until the high-frequency band stops being compressed.
High Thres	-60–0 [dB]	Specifies the volume level at which compression starts for the high-frequency band.
High Ratio	1: 1, 2: 1, 3: 1, 4: 1, 8: 1, 16: 1, 32: 1, INF: 1	Specifies the compression ratio for the high-frequency band.
High Knee	0–30 [dB]	This is a function that smooths the onset of compression from the uncompressed state; it gradually applies compression starting earlier than High Thres. Higher values produce a smoother transition.
High Gain	-24–+24 [dB]	Specifies the output volume of the high-frequency band.
Splt Low	16–16000 [Hz]	Specifies the frequency at which the low-frequency band (Low) and mid-frequency band (Mid) are divided.
Splt High	16–16000 [Hz]	Specifies the frequency at which the high-frequency band (High) and mid-frequency band (Mid) are divided.

SYSTEM COLOR SET

JUPITER-X only

Parameter	Value	Explanation
Color Set	1–10	Saves and switches color settings for each set number.
Arp L Off Arp R Off Func L Off Func R Off Sc1-4 Off Sc5-8 Off Sc9-12 Off Sc13-16 Off Model Off Categ Off User Off Part Off Part+KeySw Off KeySw Off PartSw Off ArpSw Off EfxSw Off No Assign St1-4 Off St5-8 Off St9-12 Off St13-16 Off Arp L On Arp R On Func L On Func R On Sc1-4 On Sc5-8 On Sc9-12 On Sc13-16 On Model On Categ On User On Part On Part+KeySw On KeySw On PartSw On ArpSw On EfxSw On St1-4 On St5-8 On St9-12 On St13-16 On	Off, O, Y, Y(b), W, W(b), G, G(b), B, B(b), R, R(b), V, V(b), W2, R2	Specify the illumination color of the button for <parameter name> Off (when the corresponding button is off), <parameter name> On (when the corresponding button is on). **Off:** Unlit **O:** Orange, **Y:** Yellow, **W:** White, **G:** Green, **B:** Blue, **R:** Red, **V:** Violet, **W2:** Bright white, **R2:** Bright red (b) indicates blinking.

MODEL ASSIGN

Parameter	Value	Explanation
Attr	Specifies the assignment attributes.	
	MODEL	Select models by the Mdl 1–8 parameters.
	CATEGORY	Select categories by the Catg 1–8 parameters.
	USER	No assignments are possible.
Mdl1–8	model (*1)	This is shown only when Attr = MODEL. Specify the model that you want to assign.
Catg1–8	category (*2)	This is shown only when Attr = CATEGORY. Specify the category name that you want to assign.

*1 OFF, NO ASSIGN, COMMON, PR-A, PR-B, PR-C, PR-D, XV-5080, JUPITER-8, JX-8P, JUNO-106, SH-101, VOCODER, RD-PIANO, PR-X

*2 OFF, No Assign, Ac.Piano, Pop Piano, E.Grand Piano, E.Piano1, E.Piano2, E.Organ, Pipe Organ, Reed Organ, Harpsichord, Clav, Celesta, Accordion, Harmonica, Bell, Mallet, Ac.Guitar, E.Guitar, Dist.Guitar, Ac.Bass, E.Bass, Synth Bass, Plucked/Stroke, Solo Strings, Ensemble Strs, Orchestral, Solo Brass, Ensemble Brass, Wind, Flute, Sax, Recorder, Vox/Choir, Scat, Synth Lead, Synth Brass, Synth Pad/Str, Synth Bellpad, Synth PolyKey, Synth FX, Synth Seq/Pop, Phrase, Pulsating, Beat&Groove, Hit, Sound FX, Drums, Percussion, Stack, Zone

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MFX Common Parameters

Parameter	Value	Explanation
Type	Selects the MFX type.	
Switch	OFF, ON	Switches the MFX on/off.
Cho Send	0–127	Adjusts the amount of chorus. If you don't want to add the chorus effect, set it to 0.
Rev Send	0–127	Adjusts the amount of reverb. If you don't want to add the reverb effect, set it to 0.
MFX parameter	Differs depending on the MFX type.	➡ For details, refer to the parameters for each MFX.
Src1–4	OFF, CC01–CC31, CC33–CC95, BEND, AFT, SYS-CTRL1, SYS-CTRL2, SYS-CTRL3, SYS-CTRL4	Specifies the MIDI message that will control the corresponding MFX CONTROL parameter.
Sens1–4	-63–+63	Specifies the depth of MFX CONTROL. Specify a positive "+" value if you want to change the value of the assigned destination in a positive direction (larger, toward the right, faster, etc.), or specify a negative value "-" if you want to change the value in a negative direction (smaller, toward the left, slower, etc.). Larger values will allow a greater amount of control.
Asgn1–4	Differs depending on the MFX type.	Specifies the parameters that are assigned to assign 1–4.

00 Thru

Filter

01 Equalizer

This is a four-band stereo equalizer (low, mid x 2, high).



Parameter	Value	Explanation
Low Freq	20, 25, 31, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400 [Hz]	Frequency of the low range
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
Mid1 Freq	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Frequency of the middle range 1
Mid1 Gain	-15–+15 [dB]	Gain of the middle range 1
Mid1 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 1 Set a higher value for Q to narrow the range to be affected.
Mid2 Freq	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Frequency of the middle range 2
Mid2 Gain	-15–+15 [dB]	Gain of the middle range 2
Mid2 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 2 Set a higher value for Q to narrow the range to be affected.
HighFreq	2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 16000 [Hz]	Frequency of the high range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level
Asgn1–4	OFF, Low Gain, High Gain, Level	Specifies the parameters that are assigned to assign 1–4.

02 Mid-Side EQ (Mid-Side Equalizer)

This effect allows the left/right signals that have similar phase to be tonally adjusted in a different way than the left/right signals that have different phase.

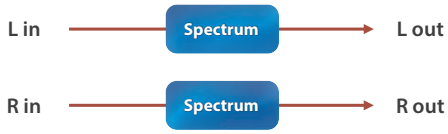


Parameter	Value	Explanation
M EQ Switch	OFF, ON	Switches whether to apply tonal adjustment to left/right input signals whose phase is similar (in phase).
M In G	-12.00–+12.00 [dB]	Volume of left/right input signals whose phase is similar (in phase)
M Low F	20, 25, 31, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400 [Hz]	Frequency of the low range
M Low G	-12.00–+12.00 [dB]	Amount of boost/cut for the low-frequency range
M Mid1 F	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Frequency of the middle range 1
M Mid1G	-12.00–+12.00 [dB]	Gain of the middle range 1
M Mid1 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 1 Set a higher value for Q to narrow the range to be affected.
M Mid2 F	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Frequency of the middle range 2
M Mid2G	-12.00–+12.00 [dB]	Gain of the middle range 2
M Mid2 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 2 Set a higher value for Q to narrow the range to be affected.
M Mid3 F	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Frequency of the middle range 3
M Mid3G	-12.00–+12.00 [dB]	Gain of the middle range 3
M Mid3 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 3 Set a higher value for Q to narrow the range to be affected.
M High F	2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 16000 [Hz]	Frequency of the high range
M HighG	-12.00–+12.00 [dB]	Amount of boost/cut for the high-frequency range
S EQ Switch	OFF, ON	Switches whether to apply tonal adjustment to left/right input signals whose phase is distant (opposite phase).
S In G	-12.00–+12.00 [dB]	Volume of left/right signals whose phase is distant (opposite phase)

Parameter	Value	Explanation
S Low F	20, 25, 31, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400 [Hz]	Frequency of the low range
S Low G	-12.00–+12.00 [dB]	Amount of boost/cut for the low-frequency range
S Mid1 F	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Frequency of the middle range 1
S Mid1G	-12.00–+12.00 [dB]	Gain of the middle range 1
S Mid1 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 1 Set a higher value for Q to narrow the range to be affected.
S Mid2 F	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Frequency of the middle range 2
S Mid2G	-12.00–+12.00 [dB]	Gain of the middle range 2
S Mid2 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 2 Set a higher value for Q to narrow the range to be affected.
S Mid3 F	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Frequency of the middle range 3
S Mid3G	-12.00–+12.00 [dB]	Gain of the middle range 3
S Mid3 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 3 Set a higher value for Q to narrow the range to be affected.
S High F	2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 16000 [Hz]	Frequency of the high range
S HighG	-12.00–+12.00 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level
Asgn1–4	OFF, M Low Gain, M Mid1 Gain, M Mid2 Gain, M Mid3 Gain, M High Gain, S Low Gain, S Mid1 Gain, S Mid2 Gain, S Mid3 Gain, S High Gain	Specifies the parameters that are assigned to assign 1–4.

03 Spectrum

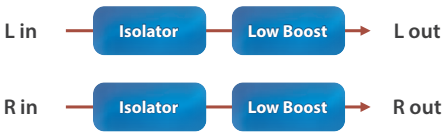
This is a stereo spectrum. Spectrum is a type of filter which modifies the timbre by boosting or cutting the level at specific frequencies.



Parameter	Value	Explanation
Band1	-15–+15 [dB]	Gain of each frequency band
Band2		
Band3		
Band4		
Band5		
Band6		
Band7		
Band8		
Q	0.5, 1.0, 2.0, 4.0, 8.0	Simultaneously adjusts the width of the adjusted ranges for all the frequency bands.
Level	0–127	Output Level
Asgn1–4	OFF, Level	Specifies the parameters that are assigned to assign 1–4.

04 Isolator

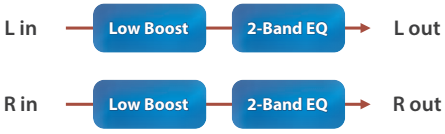
This is an equalizer which cuts the volume greatly, allowing you to add a special effect to the sound by cutting the volume in varying ranges.



Parameter	Value	Explanation
Low Level	-60–+4 [dB]	These boost and cut each of the High, Middle, and Low frequency ranges. At -60 dB, the sound becomes inaudible. 0 dB is equivalent to the input level of the sound.
Mid Level	-60–+4 [dB]	
High Level	-60–+4 [dB]	
Low AP Sw	OFF, ON	Turns the Anti-Phase function on and off for the Low frequency ranges. When turned on, the counter-channel of stereo sound is inverted and added to the signal.
Low AP Lv	0–127	Adjusts the level settings for the Low frequency ranges. Adjusting this level for certain frequencies allows you to lend emphasis to specific parts (This is effective only for stereo source.).
Mid AP Sw	OFF, ON	Settings of the Anti-Phase function for the Middle frequency ranges. The parameters are the same as for the Low frequency ranges.
Mid AP Lv	0–127	
Boost Sw	OFF, ON	Turns Low Booster on/off. This emphasizes the bottom to create a heavy bass sound.
Boost Lv	0–127	Increasing this value gives you a heavier low end. Depending on the Isolator and filter settings this effect may be hard to distinguish.
Level	0–127	Output Level
Asgn1–4	OFF, Low Level, Mid Level, High Level	Specifies the parameters that are assigned to assign 1–4.

05 Low Boost

Boosts the volume of the lower range, creating powerful lows.



Parameter	Value	Explanation
Boost Freq	50, 56, 63, 71, 80, 90, 100, 112, 125 [Hz]	Center frequency at which the lower range will be boosted
Boost Gain	0–+12 [dB]	Center frequency at which the lower range will be boosted
Boost Wid	WIDE, MID, NARROW	Width of the lower range that will be boosted
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level
Asgn1–4	OFF, Boost Freq, Boost Gain	Specifies the parameters that are assigned to assign 1–4.

06 SuperFilter

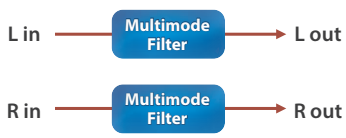
This is a filter with an extremely sharp slope. The cutoff frequency can be varied cyclically.



Parameter	Value	Explanation
Type	LPF, BPF, HPF, NOTCH	Filter type Frequency range that will pass through each filter **LPF:** Frequencies below the cutoff **BPF:** Frequencies in the region of the cutoff **HPF:** Frequencies above the cutoff NOTCH: Frequencies other than the region of the cutoff
Slope	-12, -24, -36 [dB]	Amount of attenuation per octave **-12 dB:** Gentle **-24 dB:** Steep **-36 dB:** Extremely steep
Cutoff	0–127	Cutoff frequency of the filter Increasing this value will raise the cutoff frequency.
Resonance	0–100	Filter resonance level Increasing this value will emphasize the region near the cutoff frequency.
Gain	0–+12 [dB]	Amount of boost for the filter output
Mod Sw	OFF, ON	On/off switch for cyclic change
Mod Wave	TRI, SQR, SIN, SAW1, SAW2	How the cutoff frequency will be modulated **TRI:** Triangle wave **SQR:** Square wave **SIN:** Sine wave **SAW1:** Sawtooth wave (upward) **SAW2:** Sawtooth wave (downward)
	SAW1 SAW2 	
Rate Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
Rate	0.05–10.00 [Hz]	Frequency of modulation
Rate Note	Note ➡ "Note" (p. 75)	
Depth	0–127	Depth of modulation
Attack	0–127	Speed at which the cutoff frequency will change This is effective if Mod Wave is SQR, SAW1, or SAW2.
Level	0–127	Output Level
Asgn1–4	OFF, Cutoff, Resonance, Rate, Attack	Specifies the parameters that are assigned to assign 1–4.

07 MM Filter (Multi-mode Filter)

This is a filter that is adjusted for effective use in a DJ performance.



Parameter	Value	Explanation
Type	LPF/HPF, LPF, HPF, BPF	Type of filter LPF/HPF: The filter type is automatically switched according to the Filter Tone parameter value.
Tone	0–255	Frequency at which the filter operates
Color	0–255	Filter resonance level Higher values more strongly emphasize the region of the operating frequency.
Slope	-12, -24, -36 [dB]	Amount of attenuation per octave **-12 dB:** gentle **-24 dB:** steep **-36 dB:** extremely steep
Gain	0–+12 [dB]	Amount of boost for the filter output
Level	0–127	Output Level
Asgn1–4	OFF, Filter Type, Filter Tone, Filter Color, Filter Slope	Specifies the parameters that are assigned to MFX CONTROL assign 1–4.

08 Step Filter

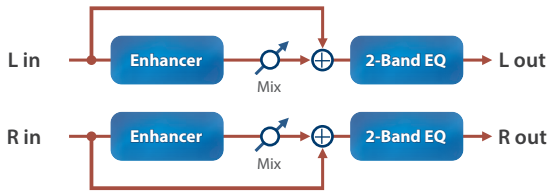
This is a filter whose cutoff frequency can be modulated in steps. You can specify the pattern by which the cutoff frequency will change.



Parameter	Value	Explanation
Step 1–16	0–127	Cutoff frequency at each step
Rate Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
Rate	0.05–10.00 [Hz]	Frequency of modulation
Rate Note	Note ➡ "Note" (p. 75)	
Attack	0–127	Speed at which the cutoff frequency changes between steps
Type	LPF, BPF, HPF, NOTCH	Filter type Frequency range that will pass through each filter **LPF**: Frequencies below the cutoff **BPF**: Frequencies in the region of the cutoff **HPF**: Frequencies above the cutoff NOTCH: Frequencies other than the region of the cutoff
Slope	-12, -24, -36 [dB]	Amount of attenuation per octave **-12 dB:** Gentle **-24 dB:** Steep **-36 dB:** Extremely steep
Reso	0–127	Filter resonance level Increasing this value will emphasize the region near the cutoff frequency.
Gain	0–+12 [dB]	Amount of boost for the filter output
Level	0–127	Output Level
Asgn1–4	OFF, Rate, Attack, Resonance	Specifies the parameters that are assigned to assign 1–4.

09 Enhancer

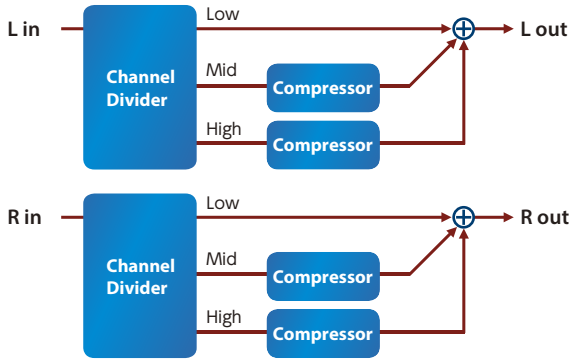
Controls the overtone structure of the high frequencies, adding sparkle and tightness to the sound.



Parameter	Value	Explanation
Sens	0–127	Sensitivity of the enhancer
Mix	0–127	Level of the overtones generated by the enhancer
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level
Asgn1–4	OFF, Sens, Mix	Specifies the parameters that are assigned to assign 1–4.

10 Exciter

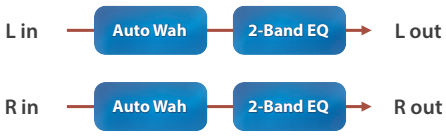
This adds dynamics to the sound, by dynamically bringing up the high end using a split-band compressor.



Parameter	Value	Explanation
Band2 Threshold	-80.0–0.0 (dB)	Raises the midrange frequency levels when they fall below the specified amount.
Band2 Max Gain	0–+24 (dB)	Sets how much to raise the levels when the midrange volume is low.
Band3 Threshold	-80.0–0.0 (dB)	Raises the high-end frequency levels when they fall below the specified amount.
Band3 Max Gain	0–+24 (dB)	Sets how much to raise the levels when the high-end frequency volume is low.
Split1 Frequency	2000–5000 (Hz)	Frequency at which the low and midrange frequencies are split
Split2 Frequency	3000–10000 (Hz)	Frequency at which the midrange and high-end frequencies are split
Level	0–127	Output Level

11 Auto Wah

Cyclically controls a filter to create cyclic change in timbre.



Parameter	Value	Explanation
Mode	LPF, BPF	Filter type **LPF:** The wah effect will be applied over a wide frequency range. **BPF:** The wah effect will be applied over a narrow frequency range.
Manual	0–127	Center frequency at which the wah effect is applied
Peak	0–127	Width of the frequency region at which the wah effect is applied Increasing this value will make the frequency region narrower.
Sens	0–127	Sensitivity with which the filter is modified
Polarity	UP, DOWN	Direction in which the filter will move **UP:** The filter will change toward a higher frequency. **DOWN:** The filter will change toward a lower frequency.
Rate Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
Rate	0.05–10.00 [Hz]	Frequency of modulation
Rate Note	Note ➡ "Note" (p. 75)	
Depth	0–127	Depth at which the wah effect is modulated
Phase	0–180 [deg]	Adjusts the degree of phase shift of the left and right sounds when the wah effect is applied.
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level
Asgn1–4	OFF, Manual, Sens, Rate (Hz), Depth, Phase	Specifies the parameters that are assigned to assign 1–4.

12 Humanizer

Adds a vowel character to the sound, making it similar to a human voice.



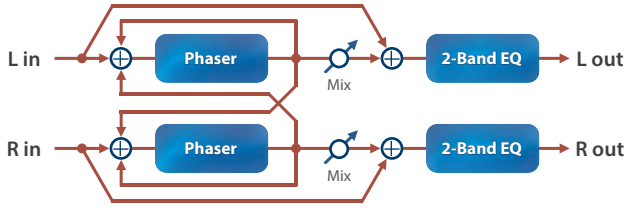
Parameter	Value	Explanation
Drive Sw	OFF, ON	Overdrive on/off
Drive	0–127	Degree of distortion Also changes the volume.
Vowel1	a, e, i, o, u	Selects the vowel.
Vowel2	a, e, i, o, u	
Rate Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
Rate	0.05–10.00 [Hz]	Frequency at which the two vowels switch
Rate Note	Note ➡ "Note" (p. 75)	
Depth	0–127	Effect depth

Parameter	Value	Explanation
In Sync Sw	OFF, ON	LFO reset on/off Determines whether the LFO for switching the vowels is reset by the input signal (ON) or not (OFF).
InSyncThres	0–127	Volume level at which reset is applied
Manual	0–100	Point at which Vowel 1/2 switch **0–49**: Vowel 1 will have a longer duration. **50**: Vowel 1 and 2 will be of equal duration. 51–100: Vowel 2 will have a longer duration.
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Pan	L64–63R	Stereo location of the output sound
Level	0–127	Output Level
Asgn1–4	OFF, Drive, Rate (Hz), Depth, Manual, Pan	Specifies the parameters that are assigned to assign 1–4.

Phaser

13 Phaser

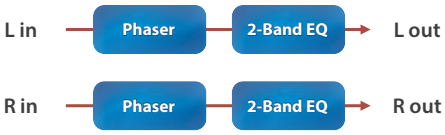
A phase-shifted sound is added to the original sound and modulated.



Parameter	Value	Explanation
Mode	4-STAGE, 8-STAGE, 12-STAGE	Number of stages in the phaser
Manual	0–127	Adjusts the basic frequency from which the sound will be modulated.
Rate Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
Rate	0.05–10.00 [Hz]	Frequency of modulation
Rate Note	Note ➡ "Note" (p. 75)	
Depth	0–127	Depth of modulation
Polarity	INVERSE, SYNCHRO	Selects whether the left and right phase of the modulation will be the same or the opposite. **INVERSE:** The left and right phase will be opposite. When using a mono source, this spreads the sound. **SYNCHRO:** The left and right phase will be the same. Select this when inputting a stereo source.
Resonance	0–127	Amount of feedback
Feedback	-98–+98 [%]	Adjusts the proportion of the phaser sound that is fed back into the effect. Negative (-) settings will invert the phase.
Mix	0–127	Level of the phase-shifted sound
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level
Asgn1–4	OFF, Manual, Rate (Hz), Resonance	Specifies the parameters that are assigned to assign 1–4.

14 Small Phaser

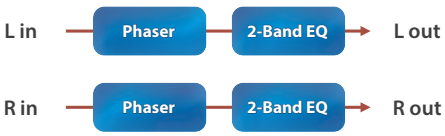
This simulates an analog phaser of the past.
It is particularly suitable for electric piano.



Parameter	Value	Explanation
Rate	0–100	Frequency of modulation
Color	1, 2	Modulation character
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level
Asgn1–4	OFF, Rate	Specifies the parameters that are assigned to assign 1–4.

15 Script 90

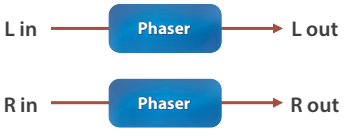
This simulates a different analog phaser than Small Phaser.
It is particularly suitable for electric piano.



Parameter	Value	Explanation
Speed	0–100	Speed of modulation
Depth	0–127	Depth of modulation
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level
Asgn1–4	OFF, Speed	Specifies the parameters that are assigned to assign 1–4.

16 Script 100

This simulates an analog phaser of the past.

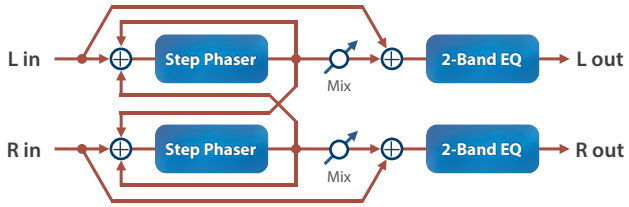


Parameter	Value	Explanation
Rate Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
Rate	0.05–10.00 [Hz]	Frequency of modulation
Rate Note	Note ➡ "Note" (p. 75)	
Duty	-50–50	Adjusts the ratio of speeds at which the modulation rises or falls.
Min	0–100	Lower limit reached by modulation
Max	0–100	Upper limit reached by modulation
Manual Sw	OFF, ON	Applies modulation according to the value of the Manual parameter, rather than modulating automatically.
Manual	0–100	Adjusts the basic frequency from which the sound will be modulated.

Parameter	Value	Explanation
Resonance	0–66	Amount of feedback
Mix	0–127	Level of the phase-shifted sound
Level	0–127	Output Level
Asgn1–4	OFF, Rate (Hz), Min, Max, Manual, Resonance, Mix	Specifies the parameters that are assigned to assign 1–4.

17 Step Phaser

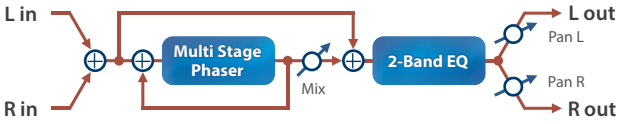
The phaser effect will be varied gradually.



Parameter	Value	Explanation
Mode	4-STAGE, 8-STAGE, 12-STAGE	Number of stages in the phaser
Manual	0–127	Adjusts the basic frequency from which the sound will be modulated.
Rate Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
Rate	0.05–10.00 [Hz]	Frequency of modulation
Rate Note	Note ➡ "Note" (p. 75)	
Depth	0–127	Depth of modulation
Polarity	INVERSE, SYNCHRO	Selects whether the left and right phase of the modulation will be the same or the opposite. **INVERSE:** The left and right phase will be opposite. When using a mono source, this spreads the sound. **SYNCHRO:** The left and right phase will be the same. Select this when inputting a stereo source.
Resonance	0–127	Amount of feedback
Feedback	-98–+98 [%]	Adjusts the proportion of the phaser sound that is fed back into the effect. Negative (-) settings will invert the phase.
S Rate Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
S. Rate	0.10–20.00 [Hz]	Rate of the step-wise change in the phaser effect
S. Rate Nt	Note ➡ "Note" (p. 75)	
Mix	0–127	Level of the phase-shifted sound
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level
Asgn1–4	OFF, Manual, Rate, Resonance, S. Rate, Mix	Specifies the parameters that are assigned to assign 1–4.

18 M StagePhsr (Multi Stage Phaser)

Extremely high settings of the phase difference produce a deep phaser effect.



Parameter	Value	Explanation
Mode	4-STAGE, 8-STAGE, 12-STAGE, 16-STAGE, 20-STAGE, 24-STAGE	Number of stages in the phaser
Manual	0–127	Adjusts the basic frequency from which the sound will be modulated.
Rate Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
Rate	0.05–10.00 [Hz]	Frequency of modulation
Rate Note	Note ➡ "Note" (p. 75)	
Depth	0–127	Depth of modulation
Resonance	0–127	Amount of feedback
Mix	0–127	Level of the phase-shifted sound
Pan	L64–63R	Stereo location of the output sound
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level
Asgn1–4	OFF, Manual, Rate (Hz), Resonance, Mix, Pan	Specifies the parameters that are assigned to assign 1–4.

19 Inf Phaser (Infinite Phaser)

A phaser that continues raising/lowering the frequency at which the sound is modulated.



Parameter	Value	Explanation
Mode	1–4	Higher values will produce a deeper phaser effect.
Speed	-100–+100	Speed at which to raise or lower the frequency at which the sound is modulated (+: upward / -: downward)
Resonance	0–127	Amount of feedback
Mix	0–127	Level of the phase-shifted sound
Pan	L64–63R	Stereo location of the output sound
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level
Asgn1–4	OFF, Speed, Resonance, Mix, Pan	Specifies the parameters that are assigned to assign 1–4.

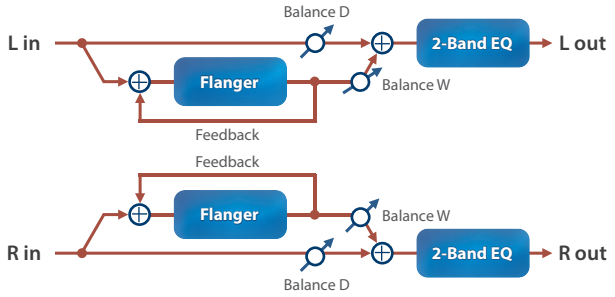
Flanger

20 Flanger

This is a stereo flanger (The LFO has the same phase for left and right.).

It produces a metallic resonance that rises and falls like a jet airplane taking off or landing.

A filter is provided so that you can adjust the timbre of the flanged sound.



Parameter	Value	Explanation
Type	OFF, LPF, HPF	Filter type **OFF:** No filter is used **LPF:** Cuts the frequency range above the Cutoff Freq **HPF:** Cuts the frequency range below the Cutoff Freq
Cutoff	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Basic frequency of the filter
Pre Delay	0.0–100 [ms]	Adjusts the delay time from the direct sound until the flanger sound is heard.
Rate Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
Rate	0.05–10.00 [Hz]	Frequency of modulation
Rate Note	Note ➡ "Note" (p. 75)	
Depth	0–127	Depth of modulation
Phase	0–180 [deg]	Spatial spread of the sound
Feedback	-98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the flanger sound (W)
Level	0–127	Output Level
Asgn1–4	OFF, Rate (Hz), Feedback, Balance	Specifies the parameters that are assigned to assign 1–4.

21 SBF-325 (Flanger)

This effect reproduces Roland's SBF-325 analog flanger.

It provides three types of flanging effect (which adds a metallic resonance to the original sound) and a chorus-type effect.

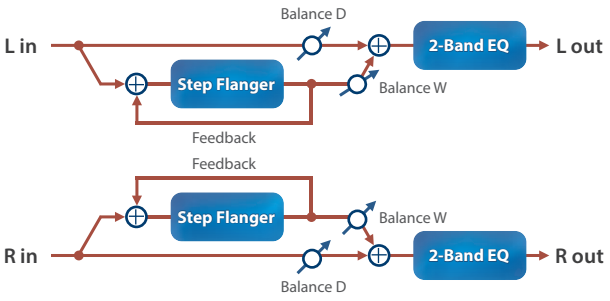


Parameter	Value	Explanation
Mode		Types of flanging effect
	FL1	A typical mono flanger
	FL2	A stereo flanger that preserves the stereo positioning of the original sound
	FL3	A cross-mix flanger that produces a more intense effect
	CHO	A chorus effect
Rate Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
Rate	0.02–5.00 [Hz]	Modulation frequency of the flanger effect
Rate Note	Note ➡ "Note" (p. 75)	
Depth	0–127	Modulation depth of the flanger effect
Manual	0–127	Center frequency at which the flanger effect is applied
Feedback	0–127	Amount by which the flanging effect is boosted If Mode is CHO, this setting is ignored.
RMod Phase	NORM, INV	Phase of the right channel modulation: Normally, you will leave this at Normal (NORM). If you specify Inverted (INV), the modulation (upward/downward movement) of the right channel is inverted.
L Phase	NORM, INV	Phase when mixing the flanging sound with the original sound **NORM:** normal phase **INV:** inverse phase
R Phase	NORM, INV	
Level	0–127	Output Level
Asgn1–4	OFF, Rate (Hz), Depth, Manual	Specifies the parameters that are assigned to assign 1–4.

22 StepFlanger

This is a flanger in which the flanger pitch changes in steps.

The speed at which the pitch changes can also be specified in terms of a note-value of a specified tempo.



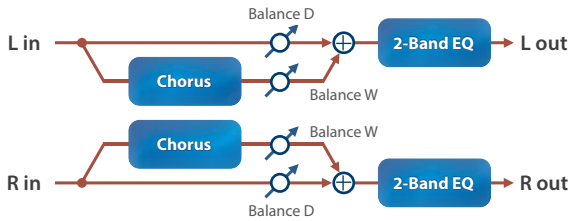
Parameter	Value	Explanation
Type	OFF, LPF, HPF	Filter type **OFF:** No filter is used **LPF:** Cuts the frequency range above the Cutoff Freq **HPF:** Cuts the frequency range below the Cutoff Freq

Parameter	Value	Explanation
Cutoff	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Basic frequency of the filter
Pre Delay	0.0–100 [ms]	Adjusts the delay time from the direct sound until the flanger sound is heard.
Rate Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
Rate	0.05–10.00 [Hz]	Frequency of modulation
Rate Note	Note ➡ "Note" (p. 75)	
Depth	0–127	Depth of modulation
Phase	0–180 [deg]	Spatial spread of the sound
Feedback	-98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.
S. Rate Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
S. Rate	0.10–20.00 [Hz]	Rate (period) of pitch change
S. Rate Nt	Note ➡ "Note" (p. 75)	
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the flanger sound (W)
Level	0–127	Output Level
Asgn1–4	OFF, Rate, Feedback, S. Rate, Balance	Specifies the parameters that are assigned to assign 1–4.

Chorus

23 Chorus

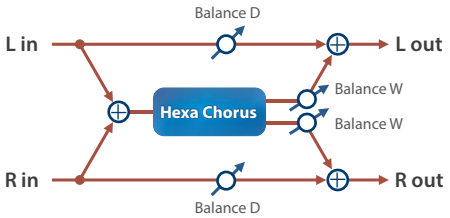
This is a stereo chorus. A filter is provided so that you can adjust the timbre of the chorus sound.



Parameter	Value	Explanation
Type	OFF, LPF, HPF	Filter type **OFF:** No filter is used **LPF:** Cuts the frequency range above the Cutoff Freq **HPF:** Cuts the frequency range below the Cutoff Freq
Cutoff	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000 [Hz]	Basic frequency of the filter
Pre Delay	0.0–100 [ms]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Rate Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
Rate	0.05–10.00 [Hz]	Frequency of modulation
Rate Note	Note ➡ "Note" (p. 75)	
Depth	0–127	Depth of modulation
Phase	0–180 [deg]	Spatial spread of the sound
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the chorus sound (W)
Level	0–127	Output Level
Asgn1–4	OFF, Rate (Hz), Balance	Specifies the parameters that are assigned to assign 1–4.

24 Hexa-Chorus

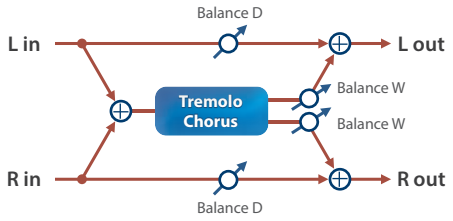
Uses a six-phase chorus (six layers of chorused sound) to give richness and spatial spread to the sound.



Parameter	Value	Explanation
Pre Delay	0.0–100 [ms]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Rate Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
Rate	0.05–10.00 [Hz]	Frequency of modulation
Rate Note	Note ➡ "Note" (p. 75)	
Depth	0–127	Depth of modulation
PreDly Dev	0–20	Adjusts the differences in Pre Delay between each chorus sound.
Depth Dev	-20–+20	Adjusts the difference in modulation depth between each chorus sound.
Pan Dev	0–20	Adjusts the difference in stereo location between each chorus sound. **0:** All chorus sounds will be in the center. **20:** Each chorus sound will be spaced at 60 degree intervals relative to the center.
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the chorus sound (W)
Level	0–127	Output Level
Asgn1–4	OFF, Rate (Hz), Balance	Specifies the parameters that are assigned to assign 1–4.

25 Trem Chorus (Tremolo Chorus)

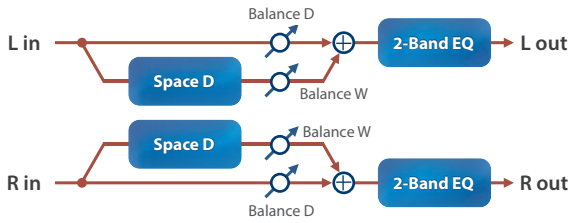
This is a chorus effect with added Tremolo (cyclic modulation of volume).



Parameter	Value	Explanation
Pre Delay	0.0–100 [ms]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Cho Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
C. Rate	0.05–10.00 [Hz]	Modulation frequency of the chorus effect
C. Rate Nt	Note ➡ "Note" (p. 75)	
Cho Depth	0–127	Modulation depth of the chorus effect
Trm Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
T. Rate	0.05–10.00 [Hz]	Modulation frequency of the tremolo effect
T. Rate Nt	Note ➡ "Note" (p. 75)	
Trm Separate	0–127	Depth of the tremolo effect
Trm Phase	0–180 [deg]	Spread of the tremolo effect
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the tremolo chorus sound (W)
Level	0–127	Output Level
Asgn1–4	OFF, C. Rate, T. Rate, Balance	Specifies the parameters that are assigned to assign 1–4.

26 Space-D

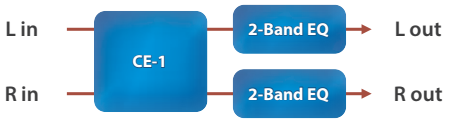
This is a multiple chorus that applies two-phase modulation in stereo. It gives no impression of modulation, but produces a transparent chorus effect.



Parameter	Value	Explanation
Pre Delay	0.0–100 [ms]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Rate Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
Rate	0.05–10.00 [Hz]	Frequency of modulation
Rate Note	Note ➡ "Note" (p. 75)	
Depth	0–127	Depth of modulation
Phase	0–180 [deg]	Spatial spread of the sound
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the chorus sound (W)
Level	0–127	Output Level
Asgn1–4	OFF, Rate (Hz), Balance	Specifies the parameters that are assigned to assign 1–4.

27 CE-1 (Chorus)

This models the classic BOSS CE-1 chorus effect unit.
It provides a chorus sound with a distinctively analog warmth.



Parameter	Value	Explanation
Intensity	0–127	Chorus depth
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level
Asgn1–4	OFF, Intensity	Specifies the parameters that are assigned to assign 1–4.

28 SDD-320 (DIMENSION D)

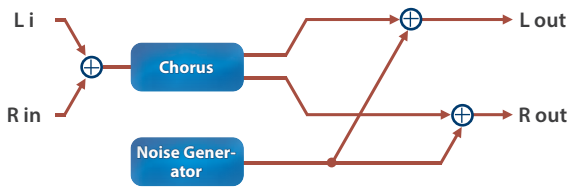
This models Roland's DIMENSION D (SDD-320). It provides a clear chorus sound.



Parameter	Value	Explanation
Mode	1, 2, 3, 4, 1+4, 2+4, 3+4	Switches the mode.
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level
Asgn1–4	OFF, Mode	Specifies the parameters that are assigned to assign 1–4.

29 JUNO Chorus (JUNO-106Chorus)

This models the chorus effects of the Roland JUNO-106.

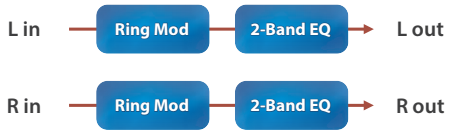


Parameter	Value	Explanation
Mode	I, II, I+II, JX I, JX II	Type of Chorus I+II: The state in which two buttons are pressed simultaneously.
Noise Lv	0–127	Volume of the noise produced by chorus
Balance	D100: 0W–D0: 100W	Volume balance between the dry sound (D) and effect sound (W)
Level	0–127	Output Level
Asgn1–4	OFF, Noise Level, Balance	Specifies the parameters that are assigned to assign 1–4.

Modulation

30 Ring Mod (Ring modulator)

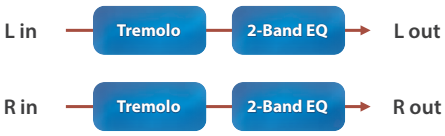
This is an effect that applies amplitude modulation (AM) to the input signal, producing bell-like sounds. You can also change the modulation frequency in response to changes in the volume of the sound sent into the effect.



Parameter	Value	Explanation
Frequency	0–127	Adjusts the frequency at which modulation is applied.
Sens	0–127	Adjusts the amount of frequency modulation applied.
Polarity	UP, DOWN	Determines whether the frequency modulation moves towards higher frequencies or lower frequencies. **UP:** The filter will change toward a higher frequency. **DOWN:** The filter will change toward a lower frequency.
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the effect sound (W)
Level	0–127	Output Level
Asgn1–4	OFF, Frequency, Sens, Balance	Specifies the parameters that are assigned to assign 1–4.

31 Tremolo

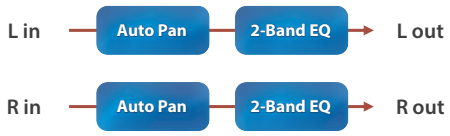
Cyclically changes the volume.



Parameter	Value	Explanation
Mod Wave	TRI, SQR, SIN, SAW1, SAW2, TRP	Modulation Wave **TRI:** Triangle wave **SQR:** Square wave **SIN:** Sine wave **SAW1/2:** Sawtooth wave **TRP:** Trapezoidal wave
	SAW1 SAW2 	
Rate Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
Rate	0.05–10.00 [Hz]	Frequency of the change
Rate Note	Note ➡ "Note" (p. 75)	
Depth	0–127	Depth to which the effect is applied
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level
Asgn1–4	OFF, Rate (Hz), Depth	Specifies the parameters that are assigned to assign 1–4.

32 Auto Pan

Cyclically modulates the stereo location of the sound.



Parameter	Value	Explanation
Mod Wave	TRI, SQR, SIN, SAW1, SAW2, TRP	Modulation Wave **TRI:** Triangle wave **SQR:** Square wave **SIN:** Sine wave **SAW1/2:** Sawtooth wave **TRP:** Trapezoidal wave
	SAW1 R L / SAW2 R L	
Rate Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
Rate	0.05–10.00 [Hz]	Frequency of the change
Rate Note	Note ➡ "Note" (p. 75)	
Depth	0–127	Depth to which the effect is applied
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level
Asgn1–4	OFF, Rate (Hz), Depth	Specifies the parameters that are assigned to assign 1–4.

33 Slicer

By applying successive cuts to the sound, this effect turns a conventional sound into a sound that appears to be played as a backing phrase. This is especially effective when applied to sustain-type sounds.

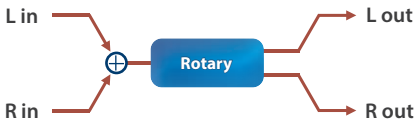


Parameter	Value	Explanation
Step 1–16	0–127	Level at each step
Rate Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
Rate	0.05–10.00 [Hz]	Rate at which the 16-step sequence will cycle
Rate Note	Note ➡ "Note" (p. 75)	
Attack	0–127	Speed at which the level changes between steps
In Sync Sw	OFF, ON	Specifies whether an input note will cause the sequence to resume from the first step of the sequence (ON) or not (OFF)
InSyncThres	0–127	Volume at which an input note will be detected
Mode	LEGATO, SLASH	Sets the manner in which the volume changes as one step progresses to the next. **LEGATO:** The change in volume from one step's level to the next remains unaltered. If the level of a following step is the same as the one preceding it, there is no change in volume. **SLASH:** The level is momentarily set to 0 before progressing to the level of the next step. This change in volume occurs even if the level of the following step is the same as the preceding step.
Shuffle	0–127	Timing of volume changes in levels for even-numbered steps (step 2, step 4, step 6...). The higher the value, the later the beat progresses.
Level	0–127	Output Level
Asgn1–4	OFF, Rate (Hz), Attack, Shuffle	Specifies the parameters that are assigned to assign 1–4.

34 Rotary

This simulates a classic rotary speaker of the past.

Since the operation of the high-frequency and low-frequency rotors can be specified independently, the distinctive modulation can be reproduced realistically. This is most effective on organ patches.

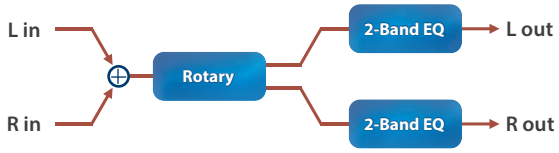


Parameter	Value	Explanation
Speed	SLOW, FAST	Simultaneously switch the rotational speed of the low frequency rotor and high frequency rotor. **SLOW**: Slows down the rotation to the Slow Rate. **FAST:** Speeds up the rotation to the Fast Rate.
Wf Slow	0.05–10.00 [Hz]	Slow speed (SLOW) of the low frequency rotor
Wf Fast	0.05–10.00 [Hz]	Fast speed (FAST) of the low frequency rotor
Wf Accel	0–15	Adjusts the time it takes the low frequency rotor to reach the newly selected speed when switching from fast to slow (or slow to fast) speed. Lower values will require longer times.
Wf Level	0–127	Volume of the low frequency rotor
Tw Slow	0.05–10.00 [Hz]	Settings of the high frequency rotor The parameters are the same as for the low frequency rotor
Tw Fast	0.05–10.00 [Hz]	
Tw Accel	0–15	
Tw Level	0–127	
Separation	0–127	Spatial dispersion of the sound
Level	0–127	Output Level
Asgn1–4	OFF, Speed, Level	Specifies the parameters that are assigned to assign 1–4.

35 VK Rotary

This type provides modified response for the rotary speaker, with the low end boosted further.

This effect features the same specifications as the VK-7's built-in rotary speaker.



Parameter	Value	Explanation
Speed	SLOW, FAST	Rotational speed of the rotating speaker **SLOW:** Slow **FAST:** Fast
Brake	OFF, ON	Switches the rotation of the rotary speaker. When this is turned on, the rotation will gradually stop. When it is turned off, the rotation will gradually resume.
Wf Slow	0.05–10.00 [Hz]	Low-speed rotation speed of the woofer
Wf Fast	0.05–10.00 [Hz]	High-speed rotation speed of the woofer
Wf Trs Up	0–127	Adjusts the rate at which the woofer rotation speeds up when the rotation is switched from Slow to Fast.
Wf Trs Dw	0–127	Adjusts the rate at which the woofer rotation speeds up when the rotation is switched from Fast to Slow.
Wf Level	0–127	Volume of the woofer
Tw Slow	0.05–10.00 [Hz]	Settings of the tweeter The parameters are the same as for the woofer.
Tw Fast	0.05–10.00 [Hz]	
Tw Trs Up	0–127	
Tw Trs Dw	0–127	
Tw Level	0–127	
Spread	0–10	Sets the rotary speaker stereo image. The higher the value set, the wider the sound is spread out.
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level
OD Switch	OFF, ON	Overdrive on/off
OD Gain	0–127	Overdrive input level Higher values will increase the distortion.
OD Drive	0–127	Degree of distortion
OD Level	0–127	Volume of the overdrive
Asgn1–4	OFF, Speed, Brake, OD Gain, OD Drive, OD Level	Specifies the parameters that are assigned to assign 1–4.

Drive / Amp

36 Overdrive

This is an overdrive that provides heavy distortion.



Parameter	Value	Explanation
Drive	0–127	Degree of distortion Also changes the volume.
Tone	0–127	Sound quality of the Overdrive effect
Amp Switch	OFF, ON	Turns the Amp Simulator on/off.
AmpType	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp **SMALL:** Small amp **BUILT-IN:** Single-unit type amp **2-STACK:** Large double stack amp **3-STACK:** Large triple stack amp
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Pan	L64–63R	Stereo location of the output sound
Level	0–127	Output Level
Asgn1–4	OFF, Drive, Tone, Pan	Specifies the parameters that are assigned to assign 1–4.

37 Distortion

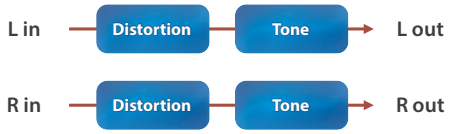
Produces a more intense distortion than Overdrive.



Parameter	Value	Explanation
Drive	0–127	Degree of distortion Also changes the volume.
Tone	0–127	Sound quality of the Overdrive effect
Amp Switch	OFF, ON	Turns the Amp Simulator on/off.
AmpType	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp **SMALL:** Small amp **BUILT-IN:** Single-unit type amp **2-STACK:** Large double stack amp **3-STACK:** Large triple stack amp
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Pan	L64–63R	Stereo location of the output sound
Level	0–127	Output Level
Asgn1–4	OFF, Drive, Tone, Pan	Specifies the parameters that are assigned to assign 1–4.

38 T-Scream

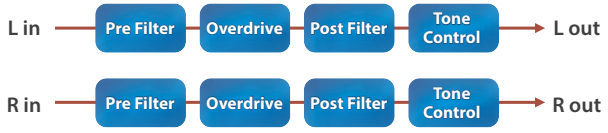
This models a classic analog overdrive. It is distinctive in adding an appropriate amount of overtones without muddying the sound.



Parameter	Value	Explanation
Distortion	0–127	Degree of distortion Also changes the volume.
Tone	0–127	Tonal character of the overdrive
Level	0–127	Output Level
Asgn1–4	OFF, Distortion, Tone	Specifies the parameters that are assigned to assign 1–4.

39 Fuzz

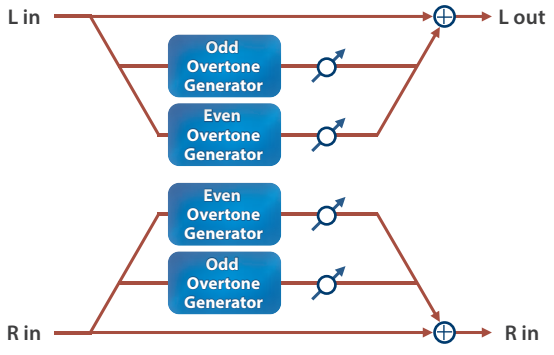
Adds overtones and intensely distorts the sound.



Parameter	Value	Explanation
Drive	0–127	Adjusts the depth of distortion. This also changes the volume.
Tone	0–100	Sound quality of the Overdrive effect
Level	0–127	Output Level
Asgn1–4	OFF, Drive, Tone	Specifies the parameters that are assigned to assign 1–4.

40 Fattener (Tone Fattener)

This effect applies distinctive distortion, adding overtones to give more depth to the sound.



Parameter	Value	Explanation
Odd Level	0–400 [%]	Raising the value adds odd-order overtones.
Even Level	0–400 [%]	Raising the value adds even-order overtones.
Level	0–127	Output Level
Asgn1–4	OFF, Odd Level, Even Level	Specifies the parameters that are assigned to assign 1–4.

41 HMS Distort (HMS Distortion)

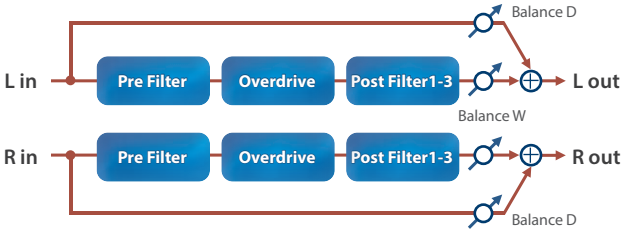
This is a distortion-type effect that models the vacuum tube amp section of a rotary speaker of the past.



Parameter	Value	Explanation
Dist	0–127	Strength of distortion
Level	0–127	Output Level
Asgn1–4	OFF, Distortion	Specifies the parameters that are assigned to assign 1–4.

42 Saturator

This effect combines overdrive and filter.

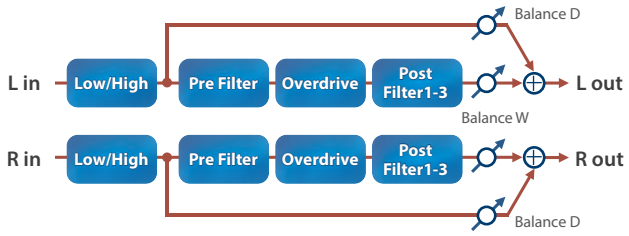


Parameter	Value	Explanation
Pre Type	THRU, LPF, HPF, LSV, HSV	Type of filter that precedes the distortion processing **THRU:** No filter is applied **LPF:** A filter that passes the sound below the specified frequency **HPF:** A filter that passes the sound above the specified frequency **LSV:** A filter that boosts/cuts the sound below the specified frequency **HSV:** A filter that boosts/cuts the sound above the specified frequency
Pre Freq	20–16000 [Hz]	Frequency at which the pre-distortion filter operates
Pre Gain	-24.0–+24.0 [dB]	For the LSV/HSV types, the amount of boost/cut
Drive	0.0–48.0 [dB]	Strength of distortion
Post1 Type	THRU, LPF, HPF, LSV, HSV	Type of filter 1 which follows the distortion processing
Post1Frq	20–16000 [Hz]	Frequency at which post-distortion filter 1 operates
Post1Gain	-24.0–+24.0 [dB]	For the LSV/HSV types, the amount of boost/cut
Post2 Type	THRU, LPF, HPF, LSV, HSV	Type of filter 2 which follows the distortion processing
Post2Frq	20–16000 [Hz]	Frequency at which post-distortion filter 2 operates
Post2Gain	-24.0–+24.0 [dB]	For the LSV/HSV types, the amount of boost/cut
Post3 Type	THRU, LPF, HPF, BPF, PKG	Type of filter 3 which follows the distortion processing **THRU:** No filter is applied **LPF:** A filter that passes the sound below the specified frequency **HPF:** A filter that passes the sound above the specified frequency **BPF:** A filter that passes only the specified frequency **PKG:** A filter that boosts/cuts the specified frequency
Post3Frq	20–16000 [Hz]	Frequency at which post-distortion filter 3 operates
Post3Gain	-24.0–+24.0 [dB]	For the PKG type, the amount of boost/cut

Parameter	Value	Explanation
Post3 Q	0.5–16.0	Width of the frequency range affected by the filter
Sense	-60.0–0.0 [dB]	Adjust this value so that the sound is not made louder when distortion is applied.
PostGain	-48.0 +12.0 [dB]	Gain following distortion processing
Balance	D100: 0W–D0: 100W	Volume balance between the dry sound (D) and effect sound (W)
Level	0–127	Output Level
Asgn1–4	OFF, Drive, Drive Balance, Level	Specifies the parameters that are assigned to assign 1–4.

43 W Saturator (Worm Saturator)

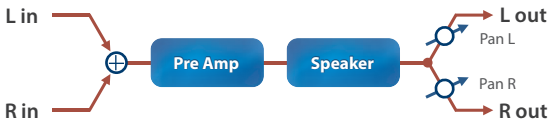
This is a variety of saturator, and is distinctive for its warmer sound.



Parameter	Value	Explanation
LowFreq	20–16000 [Hz]	Input filter (low range) Boosts/cuts the sound below the specified frequency.
LowGain	-24.0–+24.0 [dB]	Input filter (low range) Amount of boost/cut
Hi Slope	THRU, -12dB, -24dB	Amount of attenuation per octave **THRU:** No attenuation **-12 dB:** Gentle **-24 dB:** Steep
Hi Freq	20–16000 [Hz]	Input filter (high range) Boosts/cuts the sound above the specified frequency.
Pre1 Type	THRU, LPF, HPF, LSV, HSV	Types of filter that precedes the distortion processing **THRU:** No filter is applied **LPF:** A filter that passes the sound below the specified frequency **HPF:** A filter that passes the sound above the specified frequency **LSV:** A filter that boosts/cuts the sound below the specified frequency **HSV:** A filter that boosts/cuts the sound above the specified frequency
Pre1Freq	20–16000 [Hz]	Frequency at which the pre-distortion filter operates
Pre1Gain	-24.0–+24.0 [dB]	For the LSV/HSV types, the amount of boost/cut
Drive	0.0–48.0 [dB]	Strength of distortion
Post1 Type	THRU, LPF, HPF, LSV, HSV	Type of filter 1 which follows the distortion processing
Post1Frq	20–16000 [Hz]	Frequency at which post-distortion filter 1 operates
Post1Gain	-24.0–+24.0 [dB]	For the LSV/HSV types, the amount of boost/cut
Post2 Type	THRU, LPF, HPF, LSV, HSV	Type of filter 2 which follows the distortion processing
Post2Frq	20–16000 [Hz]	Frequency at which post-distortion filter 2 operates
Post2Gain	-24.0–+24.0 [dB]	For the LSV/HSV types, the amount of boost/cut
Post3 Type	THRU, LPF, HPF, BPF, PKG	Type of filter 3 which follows the distortion processing **THRU:** No filter is applied **LPF:** A filter that passes the sound below the specified frequency **HPF:** A filter that passes the sound above the specified frequency **BPF:** A filter that passes only the specified frequency **PKG:** A filter that boosts/cuts the specified frequency
Post3Frq	20–16000 [Hz]	Frequency at which post-distortion filter 3 operates
Post3Gain	-24.0–+24.0 [dB]	For the PKG type, the amount of boost/cut
Post3 Q	0.5–16.0	Width of the frequency range affected by the filter
Sense	-60.0–0.0 [dB]	Adjust this value so that the sound is not made louder when distortion is applied.
PostGain	-48.0–+12.0 [dB]	Gain following distortion processing
Balance	D100: 0W–D0: 100W	Volume balance between the dry sound (D) and effect sound (W)
Level	0–127	Output Level
Asgn1–4	OFF, LowGain, Hi Freq, Drive, Balance, Level	Specifies the parameters that are assigned to assign 1–4.

44 Gt Amp Sim (Guitar Amp Simulator)

This is an effect that simulates the sound of a guitar amplifier.

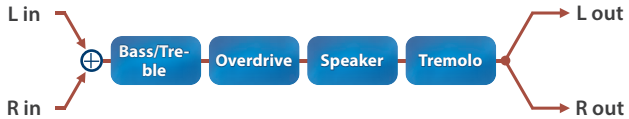


Parameter	Value	Explanation
Pre Amp Sw	OFF, ON	Turns the amp switch on/off.
ATyp		**Type of guitar amp**
	JC-120	This models the sound of the Roland JC-120.
	CLEAN TWIN	This models a Fender Twin Reverb.
	MATCH DRIVE	This models the sound input to left input on a Matchless D/C-30. A simulation of the latest tube amp widely used in styles from blues rock and fusion.
	BG LEAD	This models the lead sound of the MESA/ Boogie combo amp. The sound of a tube amp typical of the late '70s to '80s.
	MS1959I	This models the sound input to Input I on a Marshall 1959. This is a trebly sound suited to hard rock.
	MS1959II	This models the sound input to Input II on a Marshall 1959.
	MS1959I+II	The sound of connecting inputs I and II of the guitar amp in parallel, creating a sound with a stronger low end than I.
	SLDN LEAD	This models a Soldano SLO-100. This is the typical sound of the eighties.
	METAL 5150	This models the lead channel of a Peavey EVH 5150.
	METAL LEAD	This is distortion sound that is ideal for performances of heavy riffs.
	OD-1	This models the sound of the BOSS OD-1. This produces sweet, mild distortion.
	OD-2 TURBO	This is the high-gain overdrive sound of the BOSS OD-2.
	DISTORTION	This gives a basic, traditional distortion sound.
	FUZZ	A fuzz sound with rich harmonic content.
Drive	0–127	Volume and amount of distortion of the amp
Master	0–127	Volume of the entire pre-amp
Gain	LOW, MIDDLE, HIGH	Amount of pre-amp distortion

Parameter	Value	Explanation
Bass	0–127	Tone of the bass/mid/treble frequency range
Middle	0–127	
Treble	0–127	
Presence	0–127	Tone for the ultra-high frequency range
Bright	OFF, ON	Turning this "On" produces a sharper and brighter sound. * **This parameter applies to the "JC-120," "CLEAN TWIN," "MATCH DRIVE," and "BG LEAD" Pre Amp Types.**
Speaker Sw	OFF, ON	Selects whether the sound will be sent through the speaker simulation (ON) or not (OFF)
STyp		Cabinet / Diameter (in inches) and number of the speaker / Microphone
	SMALL 1	small open-back enclosure / 10 / dynamic
	SMALL 2	small open-back enclosure / 10 / dynamic
	MIDDLE	open back enclosure / 12 x 1 / dynamic
	JC-120	open back enclosure / 12 x 2 / dynamic
	BUILT-IN 1	open back enclosure / 12 x 2 / dynamic
	BUILT-IN 2	open back enclosure / 12 x 2 / condenser
	BUILT-IN 3	open back enclosure / 12 x 2 / condenser
	BUILT-IN 4	open back enclosure / 12 x 2 / condenser
	BUILT-IN 5	open back enclosure / 12 x 2 / condenser
	BG STACK 1	sealed enclosure / 12 x 2 / condenser
	BG STACK 2	large sealed enclosure / 12 x 2 / condenser
	MS STACK 1	large sealed enclosure / 12 x 4 / condenser
	MS STACK 2	large sealed enclosure / 12 x 4 / condenser
	METAL STACK	large double stack / 12 x 4 / condenser
	2-STACK	large double stack / 12 x 4 / condenser
	3-STACK	large triple stack / 12 x 4 / condenser
Mic Setting	1–3	Adjusts the location of the microphone that is recording the sound of the speaker. This can be adjusted in three steps, with the microphone becoming more distant in the order of 1, 2, and 3.
Mic Level	0–127	Volume of the microphone
Direct Level	0–127	Volume of the direct sound
Pan	L64–63R	Stereo location of the output sound
Level	0–127	Output Level
Asgn1–4	OFF, Volume, Master Lv, Pan, Level	Specifies the parameters that are assigned to assign 1–4.

45 EP Amp Sim (RD EP Amp Simulator)

This is an effect that was developed for the RD series SuperNatural E.Piano.

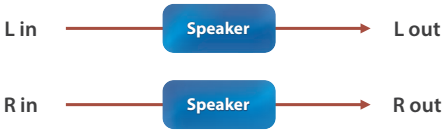


Parameter	Value	Explanation
Bass	-50–+50	Amount of low-frequency boost/cut
Treble	-50–+50	Amount of high-frequency boost/cut
Tremolo Sw	OFF, ON	Tremolo on/off
Type		Type of tremolo effect
	OLDCASE MO	A standard electric piano sound of the early 70s (mono)
	OLDCASE ST	A standard electric piano sound of the early 70s (stereo)
	NEWCASE	A standard electric piano sound of the late 70s and early 80s
	DYNO	A classic modified electric piano
	WURLY	A classic electric piano of the '60s

Parameter	Value	Explanation
Speed Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
Speed	0.05–10.00 [Hz]	Rate of the tremolo effect
Speed Nt	Note ➡ "Note" (p. 75)	
Depth	0–127	Depth of the tremolo effect
Shape	0–20	Adjusts the waveform of the tremolo.
AMP	OFF, ON	Turns the speaker and distortion on/off
Speaker	LINE, OLD, NEW, WURLY, TWIN	Type of speaker If LINE is selected, the sound will not be sent through the speaker simulation.
Drive	0–127	Degree of distortion Also changes the volume.
Level	0–127	Output Level
Asgn1–4	OFF, Bass, Treble, Tremolo Sw, Speed, Depth	Specifies the parameters that are assigned to assign 1–4.

46 Speaker Sim (Speaker Simulater)

Simulates the speaker type and mic settings used to record the speaker sound.

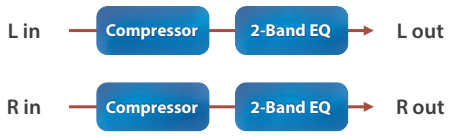


Parameter	Value	Explanation
Type		Cabinet / Speaker / Microphone
	SMALL 1	small open-back enclosure / 10 / dynamic
	SMALL 2	small open-back enclosure / 10 / dynamic
	MIDDLE	open back enclosure / 12 x 1 / dynamic
	JC-120	open back enclosure / 12 x 2 / dynamic
	BUILT-IN 1	open back enclosure / 12 x 2 / dynamic
	BUILT-IN 2	open back enclosure / 12 x 2 / condenser
	BUILT-IN 3	open back enclosure / 12 x 2 / condenser
	BUILT-IN 4	open back enclosure / 12 x 2 / condenser
	BUILT-IN 5	open back enclosure / 12 x 2 / condenser
	BG STACK 1	sealed enclosure / 12 x 2 / condenser
	BG STACK 2	large sealed enclosure / 12 x 2 / condenser
	MS STACK 1	large sealed enclosure / 12 x 4 / condenser
	MS STACK 2	large sealed enclosure / 12 x 4 / condenser
	METAL STACK	large double stack / 12 x 4 / condenser
	2-STACK	large double stack / 12 x 4 / condenser
	3-STACK	large triple stack / 12 x 4 / condenser
Mic Setting	1–3	Adjusts the location of the microphone that is recording the sound of the speaker. This can be adjusted in three steps, with the microphone becoming more distant in the order of 1, 2, and 3.
Mic Level	0–127	Volume of the microphone
Direct Lv	0–127	Volume of the direct sound
Level	0–127	Output Level
Asgn1–4	OFF, Mic Level, Direct Level, Level	Specifies the parameters that are assigned to assign 1–4.

Comp / Limiter

47 Compressor

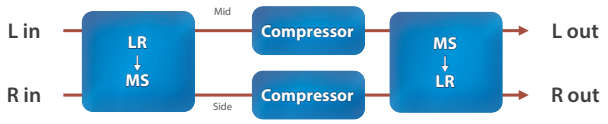
Flattens out high levels and boosts low levels, smoothing out fluctuations in volume.



Parameter	Value	Explanation
Attack	0–124	Sets the speed at which compression starts
Release	0–124	Adjusts the time after the signal volume falls below the Threshold Level until compression is no longer applied.
Threshold	-60–0 [dB]	Adjusts the volume at which compression begins
Knee	0–30 [dB]	This is a function that smooths the onset of compression from the uncompressed state; it gradually applies compression starting earlier than Threshold. Higher values produce a smoother transition.
Ratio	1: 1, 1.5: 1, 2: 1, 4: 1, 16: 1, INF: 1	Compression ratio
Post Gain	0–+18 [dB]	Level of the output sound
Level	0–127	Output Level
Asgn1–4	OFF, Attack, Threshold, Level	Specifies the parameters that are assigned to assign 1–4.

48 M/S Comp (Mid-Side Compressor)

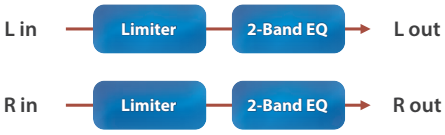
This effect allows the left/right signals that have similar phase to be adjusted to a different sense of volume than the left/right signals that have different phase.



Parameter	Value	Explanation
M Comp Sw	OFF, ON	Switches whether to adjust the sense of volume for left/right input signals whose phase is similar (in phase).
M Attack	0–124	Sets the speed at which compression starts
M Release	0–124	Adjusts the time after the signal volume falls below the M Thres Level until compression is no longer applied.
M Thres	-60–0 [dB]	Adjusts the volume at which compression begins
M Knee	0–30 [dB]	This is a function that smooths the onset of compression from the uncompressed state; it gradually applies compression starting earlier than M Thres. Higher values produce a smoother transition.
M Ratio	1: 1, 1.5: 1, 2: 1, 4: 1, 16: 1, INF: 1	Compression ratio
M Gain	0–+18 [dB]	Level of the output sound
S Comp Sw	OFF, ON	Switches whether to adjust the sense of volume for left/right input signals whose phase is distant (opposite phase).
S Attack	0–124	Sets the speed at which compression starts
S Release	0–124	Adjusts the time after the signal volume falls below the S Thres Level until compression is no longer applied.
S Thres	-60–0 [dB]	Adjusts the volume at which compression begins
S Knee	0–30 [dB]	This is a function that smooths the onset of compression from the uncompressed state; it gradually applies compression starting earlier than S Thres. Higher values produce a smoother transition.
S Ratio	1: 1, 1.5: 1, 2: 1, 4: 1, 16: 1, INF: 1	Compression ratio
S Gain	0–+18 [dB]	Level of the output sound
Level	0–127	Output Level
Asgn1–4	OFF, M Attack, M Release, M Threshold, M Post Gain, S Attack, S Release, S Threshold, S Post Gain	Specifies the parameters that are assigned to assign 1–4.

49 Limiter

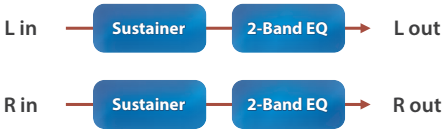
Compresses signals that exceed a specified volume level, preventing distortion from occurring.



Parameter	Value	Explanation
Release	0–127	Adjusts the time after the signal volume falls below the Threshold Level until compression is no longer applied.
Threshold	0–127	Adjusts the volume at which compression begins
Ratio	1.5: 1, 2: 1, 4: 1, 100: 1	Compression ratio
Post Gain	0–+18 [dB]	Level of the output sound
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level
Asgn1–4	OFF, Release, Threshold, Level	Specifies the parameters that are assigned to assign 1–4.

50 Sustainer

By compressing loud input and boosting low input, this effect keeps the volume consistent to produce a sustain effect without distortion.

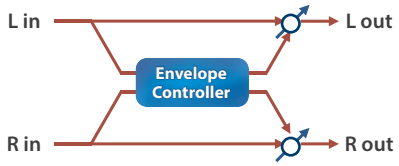


Parameter	Value	Explanation
Sustain	0–127	Adjusts the range in which a low input signal is boosted to a consistent volume. Higher values produce longer sustain.
Attack	0–127	Time until the volume is compressed
Release	0–127	Time until compression is removed
Post Gain	-15–+15 [dB]	Level of the output sound
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range

Parameter	Value	Explanation
Level	0–127	Output Level
Asgn1–4	OFF, Sustain, Attack, Release	Specifies the parameters that are assigned to assign 1–4.

51 Transient

This effect lets you control the way in which the sound attacks and decays.



Parameter	Value	Explanation
Attack	-50–+50	Character of the attack. Higher values make the attack more aggressive; lower values make the attack milder.
Release	-50–+50	Character of the decay. Higher values make the sound linger; lower values make the sound cutoff quickly.
Out Gain	-24–+12 [dB]	Output gain
Sens	LOW, MID, HIGH	Quickness with which the attack is detected
Level	0–127	Output Level
Asgn1–4	OFF, Attack, Release	Specifies the parameters that are assigned to assign 1–4.

52 Gate

Cuts the reverb's delay according to the volume of the sound sent into the effect. Use this when you want to create an artificial-sounding decrease in the reverb's decay.



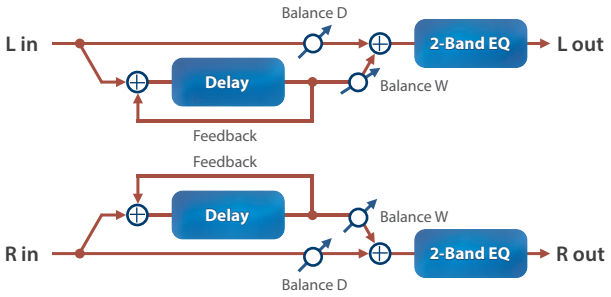
Parameter	Value	Explanation
Threshold	0–127	Volume level at which the gate begins to close
Mode	GATE, DUCK	Type of gate GATE: The gate will close when the volume of the original sound decreases, cutting the original sound. DUCK (Duking): The gate will close when the volume of the original sound increases, cutting the original sound.
Attack	0–127	Adjusts the time it takes for the gate to fully open after being triggered.
Hold	0–127	Adjusts the time it takes for the gate to start closing after the source sound falls beneath the Threshold.
Release	0–127	Adjusts the time it takes the gate to fully close after the hold time.
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the effect sound (W)
Level	0–127	Output Level
Asgn1–4	OFF, Threshold, Balance	Specifies the parameters that are assigned to assign 1–4.

Delay

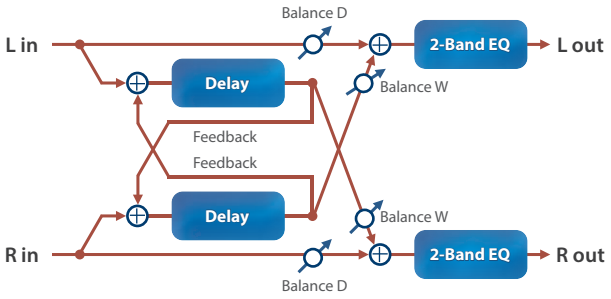
53 Delay

This is a stereo delay.

When Feedback Mode is NORMAL:



When Feedback Mode is CROSS:

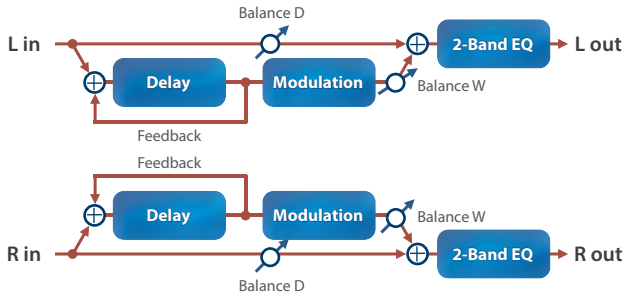


Parameter	Value	Explanation
Dly L Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
DL. Time	1–1300	Adjusts the time until the left delay sound is heard.
DLTime Nt	Note ➡ "Note" (p. 75)	
Dly R Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
DR. Time	1–1300	Adjusts the time until the right delay sound is heard.
DRTime Nt	Note ➡ "Note" (p. 75)	
Phase L	NORMAL, INVERSE	Phase of left and right delay sound **NORMAL:** Non-inverted **INVERT:** Inverted
Phase R	NORMAL, INVERSE	
Fbk Mode	NORMAL, CROSS	Selects the way in which delay sound is fed back into the effect. (See the figures above.)
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect is filtered out. If you don't want to filter out any high frequencies, set this parameter to BYPASS.
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the delay sound (W)
Level	0–127	Output Level
Asgn1–4	OFF, Feedback, Balance	Specifies the parameters that are assigned to assign 1–4.

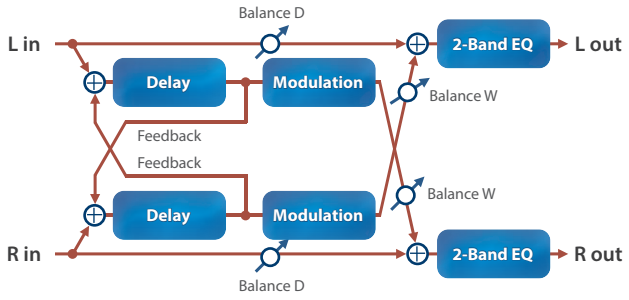
54 Mod Delay (Modulation Delay)

Adds modulation to the delayed sound.

When Feedback Mode is NORMAL:

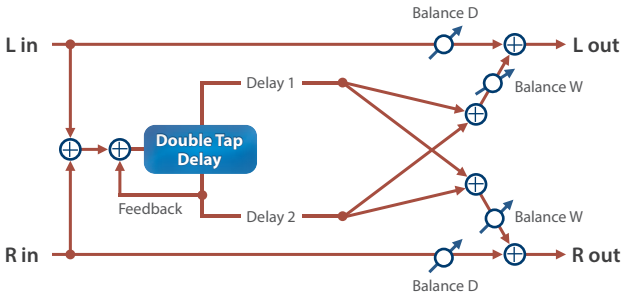


When Feedback Mode is CROSS:



Parameter	Value	Explanation
Dly L Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
DL. Time	1–1300	Adjusts the time until the left delay sound is heard.
DLTime Nt	Note ➡ "Note" (p. 75)	
Dly R Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
DR. Time	1–1300	Adjusts the time until the right delay sound is heard.
DRTime Nt	Note ➡ "Note" (p. 75)	
Fbk Mode	NORMAL, CROSS	Selects the way in which delay sound is fed back into the effect. (See the figures above.)
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect is filtered out. If you don't want to filter out any high frequencies, set this parameter to BYPASS.
Rate Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
Rate	0.05–10.00 [Hz]	Frequency of modulation
Rate Note	Note ➡ "Note" (p. 75)	
Depth	0–127	Depth of modulation
Phase	0–180 [deg]	Spatial spread of the sound
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the delay sound (W)
Level	0–127	Output Level
Asgn1–4	OFF, Feedback, Rate (Hz), Balance	Specifies the parameters that are assigned to assign 1–4.

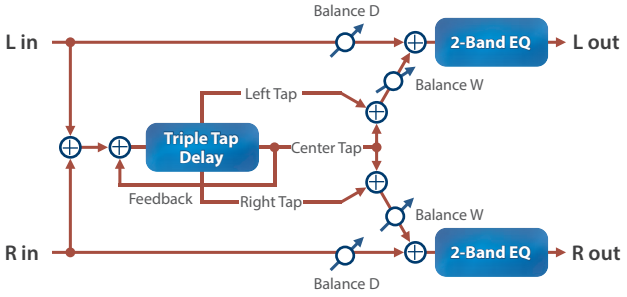
55 2Tap PanDly (2 Tap Pan Delay)



Parameter	Value	Explanation
Delay Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
D. Time (ms)	1–2600	Adjusts the time until the second delay sound is heard.
D. Time (Nt)	Note ➡ "Note" (p. 75)	
Delay Fbk	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Dly HF	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect is filtered out. If you don't want to filter out any high frequencies, set this parameter to BYPASS.
Dly1 Pan	L64–63R	Adjusts the stereo location of delay 1.
Dly2 Pan	L64–63R	Adjusts the stereo location of delay 2.
Dly1 Lv	0–127	Adjusts the volume of delay 1.
Dly2 Lv	0–127	Adjusts the volume of delay 2.
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the delay (W) and the sound that is not sent through the delay (D).
Level	0–127	Output Level
Asgn1–4	OFF, D. Time (ms), Delay Fbk, Balance	Specifies the parameters that are assigned to assign 1–4.

56 3Tap PanDly (3 Tap Pan Delay)

Produces three delay sounds; center, left and right.

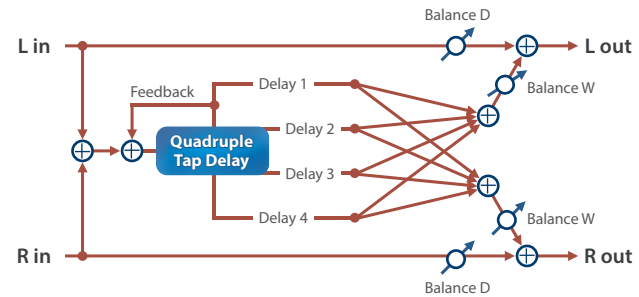


Parameter	Value	Explanation
Dly L Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
DL. Time	1–2600	Adjusts the time until the left delay sound is heard.
DLTime Nt	Note ➡ "Note" (p. 75)	

Parameter	Value	Explanation
Dly R Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
DR. Time	1–2600	Adjusts the time until the right delay sound is heard.
DRTime Nt	Note ➡ "Note" (p. 75)	
Dly C Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
DC. Time	1–2600	Adjusts the time until the center delay sound is heard.
DCTime Nt	Note ➡ "Note" (p. 75)	
C Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect is filtered out. If you don't want to filter out any high frequencies, set this parameter to BYPASS.
Left Lv	0–127	Volume of each delay sound
Right Lv	0–127	
Center Lv	0–127	
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the delay sound (W)
Level	0–127	Output Level
Asgn1–4	OFF, C Feedback, Balance	Specifies the parameters that are assigned to assign 1–4.

57 4Tap PanDly (4 Tap Pan Delay)

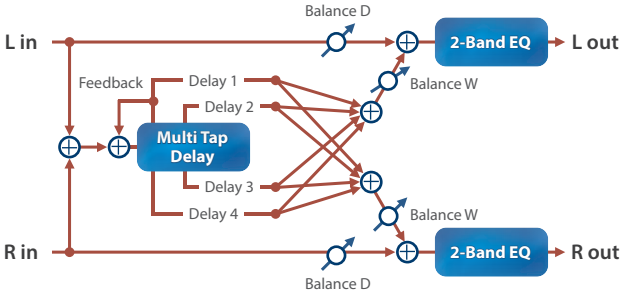
This effect has four delays.



Parameter	Value	Explanation
Dly1 Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
D1. Time	1–2600	Adjusts the time from the original sound until delay 1 sounds is heard.
D1Time Nt	Note ➡ "Note" (p. 75)	
Dly2 Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
D2. Time	1–2600	Adjusts the time from the original sound until delay 2 sounds is heard.
D2Time Nt	Note ➡ "Note" (p. 75)	
Dly3 Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
D3. Time	1–2600	Adjusts the time from the original sound until delay 3 sounds is heard.
D3Time Nt	Note ➡ "Note" (p. 75)	
Dly4 Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
D4. Time	1–2600	Adjusts the time from the original sound until delay 4 sounds is heard.
D4Time Nt	Note ➡ "Note" (p. 75)	
Dly1 Fbk	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect is filtered out. If you don't want to filter out any high frequencies, set this parameter to BYPASS.
Dly1 Lv	0–127	Volume of each delay
Dly2 Lv	0–127	
Dly3 Lv	0–127	
Dly4 Lv	0–127	
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the delay sound (W)
Level	0–127	Output Level
Asgn1–4	OFF, Dly1 Fbk, Balance	Specifies the parameters that are assigned to assign 1–4.

58 MultiTapDly (Multi Tap Delay)

This effect has four delays. Each of the Delay Time parameters can be set to a note length based on the selected tempo. You can also set the panning and level of each delay sound.

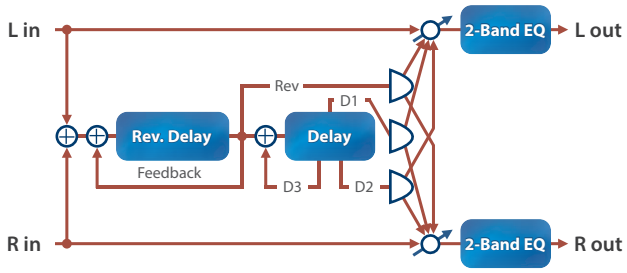


Parameter	Value	Explanation
Dly1 Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
D1. Time	1–2600	Adjusts the time from the original sound until delay 1 sounds is heard.
D1Time Nt	Note ➡ "Note" (p. 75)	
Dly2 Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
D2. Time	1–2600	Adjusts the time from the original sound until delay 2 sounds is heard.
D2Time Nt	Note ➡ "Note" (p. 75)	
Dly3 Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)

Parameter	Value	Explanation
D3. Time	1–2600	Adjusts the time from the original sound until delay 3 sounds is heard.
D3Time Nt	Note ➡ "Note" (p. 75)	
Dly4 Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
D4. Time	1–2600	Adjusts the time from the original sound until delay 4 sounds is heard.
D4Time Nt	Note ➡ "Note" (p. 75)	
Dly1 Fbk	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect is filtered out. If you don't want to filter out any high frequencies, set this parameter to BYPASS.
Dly1 Pan	L64–63R	Stereo location of Delays 1–4
Dly2 Pan	L64–63R	
Dly3 Pan	L64–63R	
Dly4 Pan	L64–63R	
Dly1 Lv	0–127	Volume of each delay
Dly2 Lv	0–127	
Dly3 Lv	0–127	
Dly4 Lv	0–127	
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the effect sound (W)
Level	0–127	Output Level
Asgn1–4	OFF, Dly1 Fbk, Balance	Specifies the parameters that are assigned to assign 1–4.

59 Reverse Dly (Reverse Delay)

This is a reverse delay that adds a reversed and delayed sound to the input sound. A tap delay is connected immediately after the reverse delay.

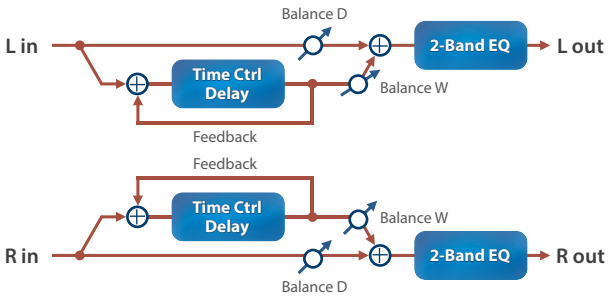


Parameter	Value	Explanation
Threshold	0–127	Volume at which the reverse delay will begin to be applied
RDly Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
RD. Time	1–1300	Delay time from when sound is input into the reverse delay until the delay sound is heard
RD. Time Nt	Note ➡ "Note" (p. 75)	
RDly Fbk	-98–+98 [%]	Proportion of the delay sound that is to be returned to the input of the reverse delay negative (-) values invert the phase)
RDly HF	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Frequency at which the high-frequency content of the reverse-delayed sound will be cut (**BYPASS:** no cut)
RDly Pan	L64–63R	Panning of the reverse delay sound
RDly Level	0–127	Volume of the reverse delay sound

Parameter	Value	Explanation
Dly1 Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
D1. Time	1–1300	Delay time from when sound is input into the tap delay until the delay sound is heard
D1Time Nt	Note ➡ "Note" (p. 75)	
Dly2 Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
D2. Time	1–1300	Delay time from when sound is input into the tap delay until the delay sound is heard
D2Time Nt	Note ➡ "Note" (p. 75)	
Dly3 Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
D3. Time	1–1300	Delay time from when sound is input into the tap delay until the delay sound is heard
D3Time Nt	Note ➡ "Note" (p. 75)	
Dly3 Fbk	-98–+98 [%]	Proportion of the delay sound that is to be returned to the input of the tap delay (negative (-) values invert the phase)
Dly HF	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Frequency at which the hi-frequency content of the tap delay sound will be cut (**BYPASS:** no cut)
Dly1 Pan	L64–63R	Panning of the tap delay sounds
Dly2 Pan	L64–63R	
Dly1 Lv	0–127	Volume of the tap delay sounds
Dly2 Lv	0–127	
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the delay sound (W)
Level	0–127	Output Level
Asgn1–4	OFF, RDly Fbk, Dly3 Fbk, Balance	Specifies the parameters that are assigned to assign 1–4.

60 TimeCtrlDly (Time Control Delay)

A stereo delay in which the delay time can be varied smoothly.

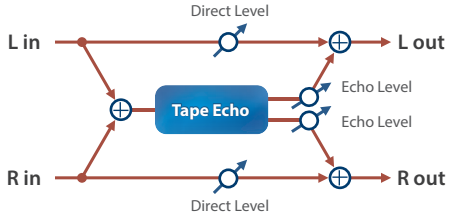


Parameter	Value	Explanation
Delay Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
D. Time	1–1300	Delay time from when the original sound is heard to when the delay sound is heard
D. Time Nt	Note ➡ "Note" (p. 75)	
Acceleration	0–15	Adjusts the speed which the Delay Time changes from the current setting to a specified new setting. The rate of change for the Delay Time directly affects the rate of pitch change.
Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.

Parameter	Value	Explanation
HF Damp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect is filtered out. If you don't want to filter out any high frequencies, set this parameter to BYPASS.
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the delay sound (W)
Level	0–127	Output Level
Asgn1–4	OFF, D. Time, Feedback, Balance	Specifies the parameters that are assigned to assign 1–4.

61 Tape Echo

A virtual tape echo that produces a realistic tape delay sound. This simulates the tape echo section of a Roland RE-201 Space Echo.



Parameter	Value	Explanation
Mode	S, M, L, S+M, S+L, M+L, S+M+L	Combination of playback heads to use Select from three different heads with different delay times. **S:** short **M:** middle **L:** long
Repeat Rate	0–127	Tape speed Increasing this value will shorten the spacing of the delayed sounds.
Intensity	0–127	Amount of delay repeats
Bass	-15–+15 [dB]	Boost/cut for the lower range of the echo sound
Treble	-15–+15 [dB]	Boost/cut for the upper range of the echo sound
Head S Pan	L64–63R	Independent panning for the short, middle, and long playback heads
Head M Pan	L64–63R	
Head L Pan	L64–63R	
Distortion	0–5	Amount of tape-dependent distortion to be added This simulates the slight tonal changes that can be detected by signal-analysis equipment. Increasing this value will increase the distortion.
Wf Rate	0–127	Speed of wow/flutter (complex variation in pitch caused by tape wear and rotational irregularity)
Wf Depth	0–127	Depth of wow/flutter
Echo Level	0–127	Volume of the echo sound
Direct Lv	0–127	Volume of the original sound
Level	0–127	Output Level
Asgn1–4	OFF, Mode, Repeat Rate, Intensity	Specifies the parameters that are assigned to assign 1–4.

62 M/S Delay (Mid-Side Delay)

This effect applies different amounts of delay to left/right signals of similar phase and differing phase.

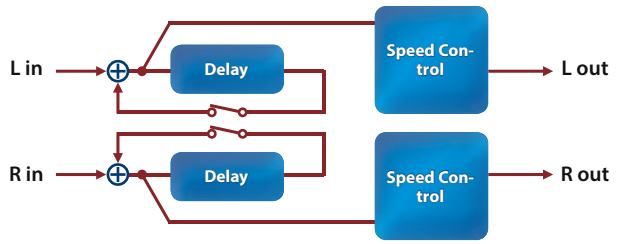


Parameter	Value	Explanation
MD Level	0–127	Delay volume of left/right input signals whose phase is similar (in phase)
MD Mode	2TAP, 3TAP, 4TAP	Delay divisions for the input signals whose left/right phase is similar (identical phase)
MD Tm Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
MD. Time	1–1300	Adjusts the time from the original sound until the delay sound is heard.
MDTime Nt	Note ➡ "Note" (p. 75)	
MD Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
MD HFDamp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect is filtered out. If you don't want to filter out any high frequencies, set this parameter to BYPASS.
MD1 Pan	L64–63R	Panning of the first delay sound
MD2 Pan	L64–63R	Panning of the second delay sound
MD3 Pan	L64–63R	Panning of the third delay sound
MD4 Pan	L64–63R	Panning of the fourth delay sound
SD Level	0–127	Delay volume of left/right input signals whose phase is distant (opposite phase)
SD Mode	2TAP, 3TAP, 4TAP	Delay divisions for the input signals whose left/right phase is distant (reverse phase)
SD Tm Sync	OFF, ON	If this is ON, the delay synchronizes with the tempo.
SD Time	1–1300	Adjusts the time from the original sound until the delay sound is heard.
SDTime Nt	Note ➡ "Note" (p. 75)	
SD Feedback	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
SD HFDamp	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect is filtered out. If you don't want to filter out any high frequencies, set this parameter to BYPASS.
SD1 Pan	L64–63R	Panning of the first delay sound
SD2 Pan	L64–63R	Panning of the second delay sound
SD3 Pan	L64–63R	Panning of the third delay sound
SD4 Pan	L64–63R	Panning of the fourth delay sound
Level	0–127	Output Level
Asgn1–4	OFF, MD Level, MD Feedback, SD Level, SD Feedback	Specifies the parameters that are assigned to assign 1–4.

Looper

63 DJFX Looper

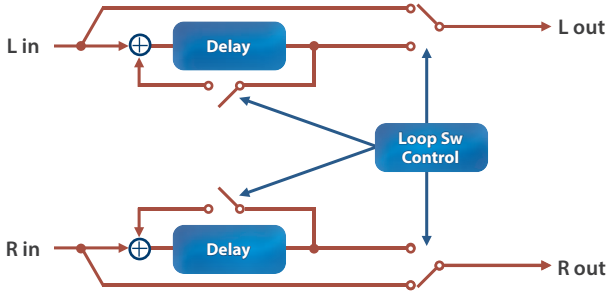
Loops a short portion of the input sound. You can vary the playback direction and playback speed of the input sound to add turntable-type effects.



Parameter	Value	Explanation
Length	230–23 (not straight)	Specifies the length of the loop.
Speed	-1.00–+1.00	Specifies the playback direction and playback speed. **- direction:** Reverse playback **+ direction:** Normal playback **0:** Stop playback As the value moves away from 0, the playback speed becomes faster.
Loop Sw	OFF, ON	If you turn this on while the sound is heard, the sound at that point will be looped. Turn this off to cancel the loop. * **If the effect is recalled with this ON, this parameter must be turned OFF and then turned ON again in order to make the loop operate.**
Level	0–127	Output Level
Asgn1–4	OFF, Length, Speed, Loop Sw	Specifies the parameters that are assigned to assign 1–4.

64 BPM Looper

Loops a short portion of the input sound. This can automatically turn the loop on/off in synchronization with the rhythm.



Parameter	Value	Explanation
Length	230–23 (not straight)	Specifies the length of the loop.
Rate Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
Rate	0.05–10.00 [Hz]	Cycle at which the loop automatically turns on/off
Rate Note	Note ➡ "Note" (p. 75)	
Timing	1–8	Specifies the timing within the cycle at which the loop automatically starts (which step of the eight timing divisions at which the sound is heard)
Lenth	1–8	Specifies the length at which the loop automatically ends within the cycle (the number of times that the 1/8-length of sound is heard)
Loop Mode	OFF, AUTO, ON	If this is AUTO, the loop automatically turns on/off in synchronization with the rhythm. * **If the effect is recalled with this ON, this parameter must first be set to something other than ON in order to make the loop operate.**
Level	0–127	Output Level
Asgn1–4	OFF, Length, Rate (Hz)	Specifies the parameters that are assigned to assign 1–4.

Lo-fi

65 LOFI Comp (Lo-Fi Compressor)

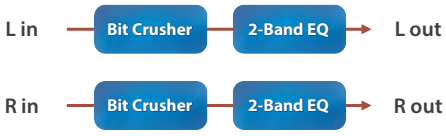
Degrades the sound quality.



Parameter	Value	Explanation
Pre Filter	1–6	Selects the type of filter applied to the sound before it passes through the Lo-Fi effect. 1: Compressor off 2–6: Compressor on
LoFi Type	1–9	Degrades the sound quality. The sound quality grows poorer as this value is increased.
Post Filter	OFF, LPF, HPF	Type of filter **OFF**: No filter is used **LPF**: Cuts the frequency range above the Cutoff Freq **HPF:** Cuts the frequency range below the Cutoff Freq
Cutoff	200–8000 [Hz]	Basic frequency of the Post Filter
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the effect sound (W)
Level	0–127	Output Level
Asgn1–4	OFF, Balance, Level	Specifies the parameters that are assigned to assign 1–4.

66 Bit Crusher

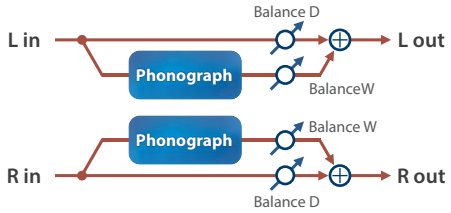
Produces an extreme lo-fi effect.



Parameter	Value	Explanation
Sample Rate	0–127	Adjusts the sample rate.
Bit Down	0–20	Adjusts the bit depth.
Filter	0–127	Adjusts the filter depth.
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level
Asgn1–4	OFF, Sample Rate, Filter	Specifies the parameters that are assigned to assign 1–4.

67 Phonograph

Recreates the sound of an analog record being played on a record player. This lets you simulate the unique noises produced when a record is played, as well as the variations that occur when the record spins.

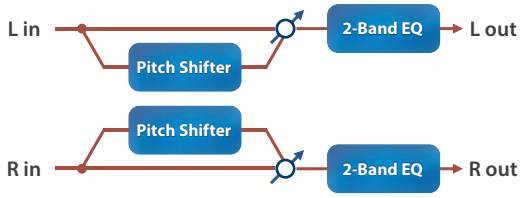


Parameter	Value	Explanation
Signal Dist	0–127	Sets the amount of distortion.
Frequency Range	0–127	Sets the frequency characteristics of the playback system. Smaller values create the feeling of an older system with narrow frequency bands.
Disc Type	LP, EP, SP	Sets the turntable rotation speed. This has an effect on the scratch noise cycle.
Scratch NZ Lev	0–127	Sets the volume of noise created by scratches in the record.
Dust NZ Lev	0–127	Sets the volume of noise created by dust on the record.
Hiss NZ Lev	0–127	Sets the volume of continuous hiss noise.
Total NZ Lev	0–127	Sets the volume of noise overall.
Wow	0–127	Sets the amount of variation in record spin (long cycle).
Flutter	0–127	Sets the amount of variation in record spin (short cycle).
Random	0–127	Sets the amount of non-cyclical variation in record spin.
Total W/F	0–127	Sets the volume of variation in record spin overall.
Balance	D100: 0W -D0: 100W	Sets the volume balance between the original sound (D) and the effect sound (W).
Level	0–127	Sets the output volume.

Lo-fi

68 PitchShiftr (Pitch Shifter)

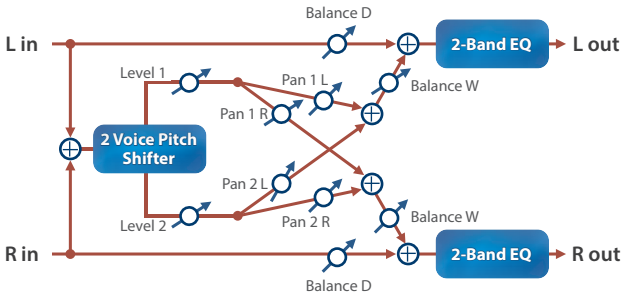
A stereo pitch shifter.



Parameter	Value	Explanation
Coarse	-24–+12 [sem]	Adjusts the pitch of the pitch shifted sound in semitone steps.
Fine	-100–+100	Adjusts the pitch of the pitch shifted sound in 2-cent steps.
Delay Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
D.Time	1–1300	Adjusts the delay time from the direct sound until the pitch shifted sound is heard.
D.Time Nt	Note ➡ "Note" (p. 75)	
Feedback	-98–+98 [%]	Adjusts the proportion of the pitch shifted sound that is fed back into the effect. Negative (-) settings will invert the phase.
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the pitch shifted sound (W)
Level	0–127	Output Level
Asgn1–4	OFF, Coarse, Fine, Feedback, Balance	Specifies the parameters that are assigned to assign 1–4.

69 2V PShifter (2 Voice Pitch Shifter)

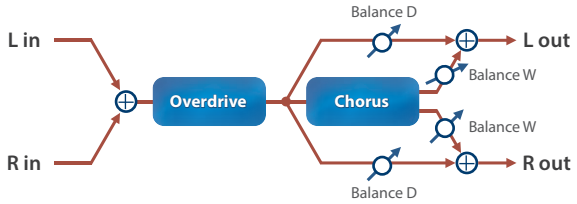
Shifts the pitch of the original sound. This 2-voice pitch shifter has two pitch shifters, and can add two pitch shifted sounds to the original sound.



Parameter	Value	Explanation
P1Coarse	-24–+12 [sem]	Adjusts the pitch of Pitch Shift 1 in semitone steps.
P1 Fine	-100–+100	Adjusts the pitch of Pitch Shift Pitch 1 in 2-cent steps.
P1 Dly Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
P1D.Time	1–1300	Adjusts the delay time from the direct sound until the Pitch Shift 1 sound is heard.
P1DRate Nt	Note ➡ "Note" (p. 75)	
P1 Feedback	-98–+98 [%]	Adjusts the proportion of the pitch shifted sound that is fed back into the effect. Negative (-) settings will invert the phase.
P1 Pan	L64–63R	Stereo location of the Pitch Shift 1 sound
P1 Level	0–127	Volume of the Pitch Shift 1 sound
P2Coarse	-24–+12 [sem]	Settings of the Pitch Shift 2 sound. The parameters are the same as for the Pitch Shift 1 sound.
P2 Fine	-100–+100	
P2 Dly Sync	OFF, ON	
P2D.Time	1–1300	
P2DRate Nt	Note	
P2 Feedback	-98–+98 [%]	
P2 Pan	L64–63R	
P2 Level	0–127	
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Balance	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the pitch shifted sound (W)
Level	0–127	Output Level
Asgn1–4	OFF, P1Coarse, P1 Fine, P1 Feedback, P1 Pan, P2Coarse, P2 Fine, P2 Feedback, P2 Pan, Balance	Specifies the parameters that are assigned to assign 1–4.

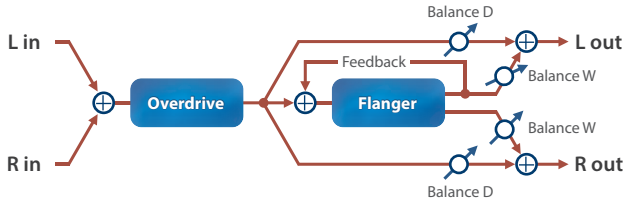
Combination

70 OD → Chorus (Overdrive → Chorus)



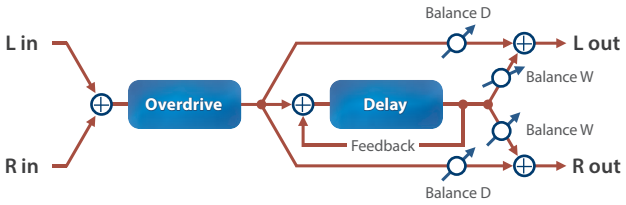
Parameter	Value	Explanation
OD Drive	0–127	Degree of distortion Also changes the volume.
OD Pan	L64–63R	Stereo location of the overdrive sound
Cho PreDly	0.0–100 [ms]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Cho Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
C. Rate	0.05–10.00 [Hz]	Frequency of modulation
C. Rate Nt	Note ➡ "Note" (p. 75)	
Cho Depth	0–127	Depth of modulation
Cho Bal	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the chorus (W) and the sound that is not sent through the chorus (D).
Level	0–127	Output Level
Asgn1–4	OFF, OD Drive, OD Pan, C. Rate, Cho Bal	Specifies the parameters that are assigned to assign 1–4.

71 OD → Flanger (Overdrive → Flanger)



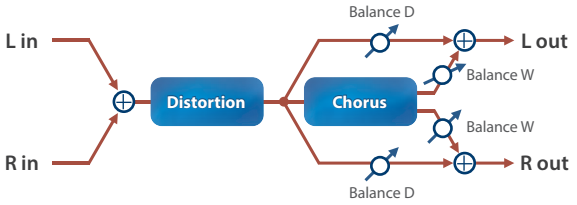
Parameter	Value	Explanation
OD Drive	0–127	Degree of distortion Also changes the volume.
OD Pan	L64–63R	Stereo location of the overdrive sound
Flg PreDly	0.0–100 [ms]	Adjusts the delay time from the direct sound until the flanger sound is heard.
Flg Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
F. Rate	0.05–10.00 [Hz]	Frequency of modulation
F. Rate Nt	Note ➡ "Note" (p. 75)	
Flg Depth	0–127	Depth of modulation
Flg Fbk	-98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.
Flg Bal	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the flanger (W) and the sound that is not sent through the flanger (D).
Level	0–127	Output Level
Asgn1–4	OFF, OD Drive, OD Pan, F. Rate, Flg Fbk, Flg Bal	Specifies the parameters that are assigned to assign 1–4.

72 OD → Delay (Overdrive → Delay)



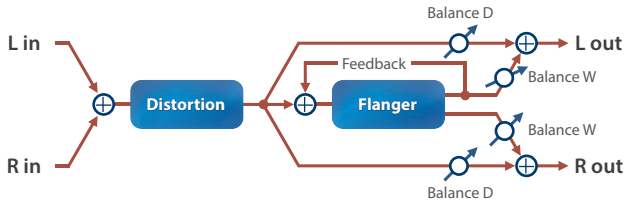
Parameter	Value	Explanation
OD Drive	0–127	Degree of distortion Also changes the volume.
OD Pan	L64–63R	Stereo location of the overdrive sound
Delay Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
D. Time	1–2600	Delay time from when the original sound is heard to when the delay sound is heard
D. Time Nt	Note ➡ "Note" (p. 75)	
Delay Fbk	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Dly HF	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect will be cut. If you do not want to cut the high frequencies, set this parameter to BYPASS.
Dly Bal	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the delay (W) and the sound that is not sent through the delay (D).
Level	0–127	Output Level
Asgn1–4	OFF, OD Drive, OD Pan, Delay Fbk, Dly Bal	Specifies the parameters that are assigned to assign 1–4.

73 DS → Chorus (Distortion → Chorus)



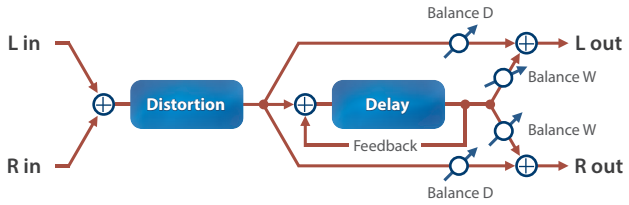
Parameter	Value	Explanation
Dist Drive	0–127	Degree of distortion Also changes the volume.
Dist Pan	L64–63R	Stereo location of the overdrive sound
Cho PreDly	0.0–100 [ms]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Cho Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
C. Rate	0.05–10.00 [Hz]	Frequency of modulation
C. Rate Nt	Note ➡ "Note" (p. 75)	
Cho Depth	0–127	Depth of modulation
Cho Bal	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the chorus (W) and the sound that is not sent through the chorus (D).
Level	0–127	Output Level
Asgn1–4	OFF, Dist Drive, Dist Pan, C. Rate, Cho Bal	Specifies the parameters that are assigned to assign 1–4.

74 DS → Flanger (Distortion → Flanger)



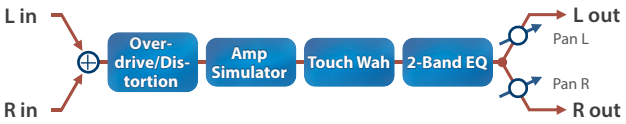
Parameter	Value	Explanation
Dist Drive	0–127	Degree of distortion Also changes the volume.
Dist Pan	L64–63R	Stereo location of the overdrive sound
Flg PreDly	0.0–100 [ms]	Adjusts the delay time from the direct sound until the flanger sound is heard.
Flg Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
F. Rate	0.05–10.00 [Hz]	Frequency of modulation
F. Rate Nt	Note ➡ "Note" (p. 75)	
Flg Depth	0–127	Depth of modulation
Flg Fbk	-98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.
Flg Bal	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the flanger (W) and the sound that is not sent through the flanger (D).
Level	0–127	Output Level
Asgn1–4	OFF, Dist Drive, Dist Pan, F. Rate, Flg Fbk, Flg Bal	Specifies the parameters that are assigned to assign 1–4.

75 DS → Delay (Distortion → Delay)



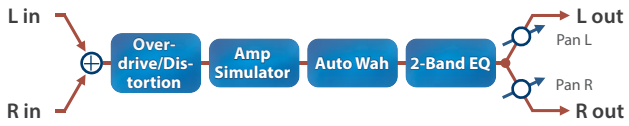
Parameter	Value	Explanation
Dist Drive	0–127	Degree of distortion Also changes the volume.
Dist Pan	L64–63R	Stereo location of the overdrive sound
Delay Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
D. Time	1–2600	Delay time from when the original sound is heard to when the delay sound is heard
D. Time Nt	Note ➡ "Note" (p. 75)	
Delay Fbk	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Dly HF	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect will be cut. If you do not want to cut the high frequencies, set this parameter to BYPASS.
Dly Bal	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the delay (W) and the sound that is not sent through the delay (D).
Level	0–127	Output Level
Asgn1–4	OFF, Dist Drive, Dist Pan, Delay Fbk, Dly Bal	Specifies the parameters that are assigned to assign 1–4.

76 OD/DS → T. Wah (Overdrive/Distortion → Touch Wah)



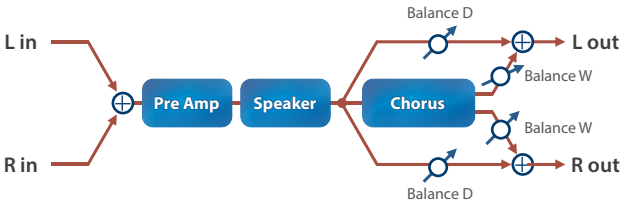
Parameter	Value	Explanation
Drive Switch	OFF, ON	Turns overdrive/distortion on/off
D. Type	OVERDRIVE, DISTORTION	Type of distortion
Drive	0–127	Degree of distortion Also changes the volume.
Tone	0–127	Sound quality of the Overdrive effect
Amp Switch	OFF, ON	Turns the Amp Simulator on/off.
AmpType	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp **SMALL**: Small amp **BUILT-IN**: Single-unit type amp **2-STACK**: Large double stack amp **3-STACK**: Large triple stack amp
TWah Switch	OFF, ON	Wah on/off
TWah Mode	LPF, BPF	Filter type **LPF**: The wah effect will be applied over a wide frequency range. **BPF**: The wah effect will be applied over a narrow frequency range.
TWah Polar	DOWN, UP	Direction in which the filter will move **DOWN**: The filter will change toward a lower frequency. **UP**: The filter will change toward a higher frequency.
TWah Sens	0–127	Sensitivity with which the filter is modified
TWah Manual	0–127	Center frequency at which the wah effect is applied
TWah Peak	0–127	Width of the frequency region at which the wah effect is applied Increasing this value will make the frequency region narrower.
TWah Bal	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the wah (W) and the sound that is not sent through the wah (D).
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level
Asgn1–4	OFF, Drive, Tone, TWah Sens, TWah Manual, TWah Peak, TWah Balance	Specifies the parameters that are assigned to assign 1–4.

77 OD/DS → A. Wah
(Overdrive/Distortion → Auto Wah)



Parameter	Value	Explanation
Drive Switch	OFF, ON	Turns overdrive/distortion on/off
D. Type	OVERDRIVE, DISTORTION	Type of distortion
Drive	0–127	Degree of distortion Also changes the volume.
Tone	0–127	Sound quality of the Overdrive effect
Amp Switch	OFF, ON	Turns the Amp Simulator on/off.
AmpType	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp **SMALL**: Small amp **BUILT-IN**: Single-unit type amp **2-STACK**: Large double stack amp **3-STACK**: Large triple stack amp
AWah Switch	OFF, ON	Wah on/off
AWah Mode	LPF, BPF	Filter type **LPF**: The wah effect will be applied over a wide frequency range. **BPF**: The wah effect will be applied over a narrow frequency range.
AWah Manual	0–127	Center frequency at which the wah effect is applied
AWah Peak	0–127	Width of the frequency region at which the wah effect is applied Increasing this value will make the frequency region narrower.
AWah Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
AWRate	0.05–10.00 [Hz]	Frequency of modulation
AWRate Nt	Note ➡ "Note" (p. 75)	
AWah Depth	0–127	Depth at which the wah effect is modulated
AWah Bal	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the wah (W) and the sound that is not sent through the wah (D).
Low Gain	-15–+15 [dB]	Amount of boost/cut for the low-frequency range
High Gain	-15–+15 [dB]	Amount of boost/cut for the high-frequency range
Level	0–127	Output Level
Asgn1–4	OFF, Drive, Tone, AWah Manual, AWah Peak, AWRate, AWah Depth, AWah Bal	Specifies the parameters that are assigned to assign 1–4.

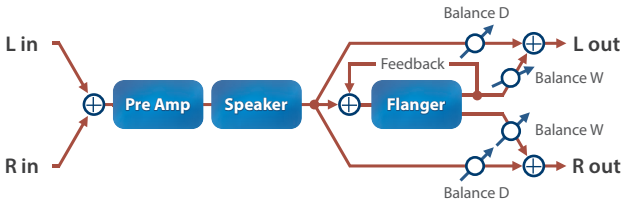
78 Gt → Chorus
(Guitar Amp Simulator → Chorus)



Parameter	Value	Explanation
Pre Amp Sw	OFF, ON	Turns the amp switch on/off.
AType		**Type of guitar amp**
	JC-120	This models the sound of the Roland JC-120.
	CLEAN TWIN	This models a Fender Twin Reverb.
	MATCH DRIVE	This models the sound input to left input on a Matchless D/C-30. A simulation of the latest tube amp widely used in styles from blues and rock.
	BG LEAD	This models the lead sound of the MESA/ Boogie combo amp. The sound of a tube amp typical of the late '70s to '80s.
	MS1959I	This models the sound input to Input I on a Marshall 1959. This is a trebly sound suited to hard rock.
	MS1959II	This models the sound input to Input II on a Marshall 1959.
	MS1959I+II	The sound of connecting inputs I and II of the guitar amp in parallel, creating a sound with a stronger low end than I.
	SLDN LEAD	This models a Soldano SLO-100. This is the typical sound of the eighties.
	METAL 5150	This models the lead channel of a Peavey EVH 5150.
	METAL LEAD	This is distortion sound that is ideal for performances of heavy riffs.
	OD-1	This models the sound of the BOSS OD-1. This produces sweet, mild distortion.
	OD-2 TURBO	This is the high-gain overdrive sound of the BOSS OD-2.
	DISTORTION	This gives a basic, traditional distortion sound.
	FUZZ	A fuzz sound with rich harmonic content.
Drive	0–127	Volume and amount of distortion of the amp
Master	0–127	Volume of the entire pre-amp
Gain	LOW, MIDDLE, HIGH	Amount of pre-amp distortion
Bass	0–127	Tone of the bass/mid/treble frequency range
Middle	0–127	
Treble	0–127	
Speaker Sw	OFF, ON	Selects whether the sound will be sent through the speaker simulation (ON) or not (OFF)

Parameter	Value	Explanation		
STyp		Cabinet	Diameter (in inches) and number of the speaker	Microphone
	SMALL 1	small open-back enclosure	10	dynamic
	SMALL 2	small open-back enclosure	10	dynamic
	MIDDLE	open back enclosure	12 x 1	dynamic
	JC-120	open back enclosure	12 x 2	dynamic
	BUILT-IN 1	open back enclosure	12 x 2	dynamic
	BUILT-IN 2	open back enclosure	12 x 2	condenser
	BUILT-IN 3	open back enclosure	12 x 2	condenser
	BUILT-IN 4	open back enclosure	12 x 2	condenser
	BUILT-IN 5	open back enclosure	12 x 2	condenser
	BG STACK 1	sealed enclosure	12 x 2	condenser
	BG STACK 2	large sealed enclosure	12 x 2	condenser
	MS STACK 1	large sealed enclosure	12 x 4	condenser
	MS STACK 2	large sealed enclosure	12 x 4	condenser
	METAL STACK	large double stack	12 x 4	condenser
	2-STACK	large double stack	12 x 4	condenser
	3-STACK	large triple stack	12 x 4	condenser
Chorus Sw	OFF, ON	Chorus on/off		
Cho PreDly	0.0–100 [ms]	Adjusts the delay time from the direct sound until the chorus sound is heard.		
C. Rate	0.05–10.00 [Hz]	Frequency of modulation		
Cho Depth	0–127	Depth of modulation		
Cho Bal	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the chorus (W) and the sound that is not sent through the chorus (D).		
Level	0–127	Output Level		
Asgn1–4	OFF, Volume, Master Lv, Chorus Sw, C. Rate, Cho Depth, Cho Bal	Specifies the parameters that are assigned to assign 1–4.		

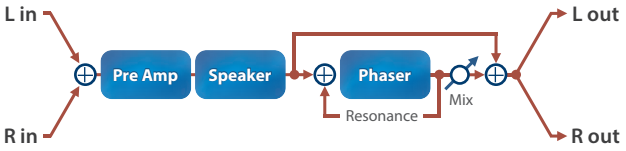
79 Gt → Flanger
(Guitar Amp Simulator → Flanger)



Parameter	Value	Explanation
Pre Amp Sw	OFF, ON	Turns the amp switch on/off.
ATyp		Type of guitar amp
	JC-120	This models the sound of the Roland JC-120.
	CLEAN TWIN	This models a Fender Twin Reverb.
	MATCH DRIVE	This models the sound input to left input on a Matchless D/C-30. A simulation of the latest tube amp widely used in styles from blues and rock.
	BG LEAD	This models the lead sound of the MESA/ Boogie combo amp. The sound of a tube amp typical of the late '70s to '80s.
	MS1959I	This models the sound input to Input I on a Marshall 1959. This is a trebly sound suited to hard rock.
	MS1959II	This models the sound input to Input II on a Marshall 1959.
	MS1959I+II	The sound of connecting inputs I and II of the guitar amp in parallel, creating a sound with a stronger low end than I.
	SLDN LEAD	This models a Soldano SLO-100. This is the typical sound of the eighties.
	METAL 5150	This models the lead channel of a Peavey EVH 5150.
	METAL LEAD	This is distortion sound that is ideal for performances of heavy riffs.
	OD-1	This models the sound of the BOSS OD-1. This produces sweet, mild distortion.
	OD-2 TURBO	This is the high-gain overdrive sound of the BOSS OD-2.
	DISTORTION	This gives a basic, traditional distortion sound.
	FUZZ	A fuzz sound with rich harmonic content.
Drive	0–127	Volume and amount of distortion of the amp
Master	0–127	Volume of the entire pre-amp
Gain	LOW, MIDDLE, HIGH	Amount of pre-amp distortion
Bass	0–127	Tone of the bass/mid/treble frequency range
Middle	0–127	
Treble	0–127	
Speaker Sw	OFF, ON	Selects whether the sound will be sent through the speaker simulation (ON) or not (OFF)

Parameter	Value	Explanation		
STyp		Cabinet	Diameter (in inches) and number of the speaker	Microphone
	SMALL 1	small open-back enclosure	10	dynamic
	SMALL 2	small open-back enclosure	10	dynamic
	MIDDLE	open back enclosure	12 x 1	dynamic
	JC-120	open back enclosure	12 x 2	dynamic
	BUILT-IN 1	open back enclosure	12 x 2	dynamic
	BUILT-IN 2	open back enclosure	12 x 2	condenser
	BUILT-IN 3	open back enclosure	12 x 2	condenser
	BUILT-IN 4	open back enclosure	12 x 2	condenser
	BUILT-IN 5	open back enclosure	12 x 2	condenser
	BG STACK 1	sealed enclosure	12 x 2	condenser
	BG STACK 2	large sealed enclosure	12 x 2	condenser
	MS STACK 1	large sealed enclosure	12 x 4	condenser
	MS STACK 2	large sealed enclosure	12 x 4	condenser
	METAL STACK	large double stack	12 x 4	condenser
	2-STACK	large double stack	12 x 4	condenser
	3-STACK	large triple stack	12 x 4	condenser
Flg Switch	OFF, ON	Flanger on/off		
Flg PreDly	0.0–100 [ms]	Adjusts the delay time from the direct sound until the flanger sound is heard.		
F. Rate	0.05–10.00 [Hz]	Frequency of modulation		
Flg Depth	0–127	Depth of modulation		
Flg Fbk	-98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.		
Flg Bal	D100: 0W– D0: 100W	Adjusts the volume balance between the sound that is sent through the flanger (W) and the sound that is not sent through the flanger (D).		
Level	0–127	Output Level		
Asgn1–4	OFF, Volume, Master Lv, Flg Switch, F. Rate, Flg Depth, Flg Fbk, Flg Bal	Specifies the parameters that are assigned to assign 1–4.		

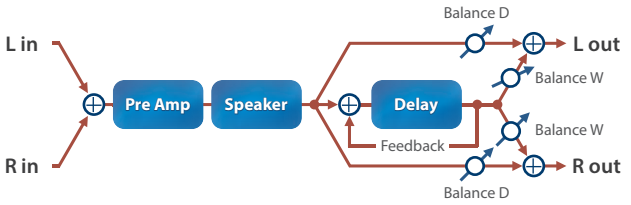
80 Gt → Phaser
(Guitar Amp Simulator → Phaser)



Parameter	Value	Explanation
Pre Amp Sw	OFF, ON	Turns the amp switch on/off.
ATyp		Type of guitar amp
	JC-120	This models the sound of the Roland JC-120.
	CLEAN TWIN	This models a Fender Twin Reverb.
	MATCH DRIVE	This models the sound input to left input on a Matchless D/C-30. A simulation of the latest tube amp widely used in styles from blues and rock.
	BG LEAD	This models the lead sound of the MESA/ Boogie combo amp. The sound of a tube amp typical of the late '70s to '80s.
	MS1959I	This models the sound input to Input I on a Marshall 1959. This is a trebly sound suited to hard rock.
	MS1959II	This models the sound input to Input II on a Marshall 1959.
	MS1959I+II	The sound of connecting inputs I and II of the guitar amp in parallel, creating a sound with a stronger low end than I.
	SLDN LEAD	This models a Soldano SLO-100. This is the typical sound of the eighties.
	METAL 5150	This models the lead channel of a Peavey EVH 5150.
	METAL LEAD	This is distortion sound that is ideal for performances of heavy riffs.
	OD-1	This models the sound of the BOSS OD-1. This produces sweet, mild distortion.
	OD-2 TURBO	This is the high-gain overdrive sound of the BOSS OD-2.
	DISTORTION	This gives a basic, traditional distortion sound.
	FUZZ	A fuzz sound with rich harmonic content.
Drive	0–127	Volume and amount of distortion of the amp
Master	0–127	Volume of the entire pre-amp
Gain	LOW, MIDDLE, HIGH	Amount of pre-amp distortion
Bass	0–127	Tone of the bass/mid/treble frequency range
Middle	0–127	
Treble	0–127	
Speaker Sw	OFF, ON	Selects whether the sound will be sent through the speaker simulation (ON) or not (OFF)

Parameter	Value	Explanation		
		Cabinet	Diameter (in inches) and number of the speaker	Microphone
STyp	SMALL 1	small open-back enclosure	10	dynamic
	SMALL 2	small open-back enclosure	10	dynamic
	MIDDLE	open back enclosure	12 x 1	dynamic
	JC-120	open back enclosure	12 x 2	dynamic
	BUILT-IN 1	open back enclosure	12 x 2	dynamic
	BUILT-IN 2	open back enclosure	12 x 2	condenser
	BUILT-IN 3	open back enclosure	12 x 2	condenser
	BUILT-IN 4	open back enclosure	12 x 2	condenser
	BUILT-IN 5	open back enclosure	12 x 2	condenser
	BG STACK 1	sealed enclosure	12 x 2	condenser
	BG STACK 2	large sealed enclosure	12 x 2	condenser
	MS STACK 1	large sealed enclosure	12 x 4	condenser
	MS STACK 2	large sealed enclosure	12 x 4	condenser
	METAL STACK	large double stack	12 x 4	condenser
	2-STACK	large double stack	12 x 4	condenser
	3-STACK	large triple stack	12 x 4	condenser
Phaser Sw	OFF, ON	Phaser on/off		
P. Rate	0.05–10.00 [Hz]	Frequency of modulation		
Phs Manual	0–127	Adjusts the basic frequency from which the sound will be modulated.		
Phs Depth	0–127	Depth of modulation		
Phs Reso	0–127	Amount of feedback		
Phs Mix	0–127	Level of the phase-shifted sound		
Level	0–127	Output Level		
Asgn1–4	OFF, Volume, Master Lv, Phaser Sw, P. Rate, Phs Manual, Phs Depth, Phs Reso, Phs Mix	Specifies the parameters that are assigned to assign 1–4.		

81 Gt → Delay
(Guitar Amp Simulator → Delay)



Parameter	Value	Explanation
Pre Amp Sw	OFF, ON	Turns the amp switch on/off.
ATyp		Type of guitar amp
	JC-120	This models the sound of the Roland JC-120.
	CLEAN TWIN	This models a Fender Twin Reverb.
	MATCH DRIVE	This models the sound input to left input on a Matchless D/C-30. A simulation of the latest tube amp widely used in styles from blues and rock.
	BG LEAD	This models the lead sound of the MESA/ Boogie combo amp. The sound of a tube amp typical of the late '70s to '80s.
	MS1959I	This models the sound input to Input I on a Marshall 1959. This is a trebly sound suited to hard rock.
	MS1959II	This models the sound input to Input II on a Marshall 1959.
	MS1959I+II	The sound of connecting inputs I and II of the guitar amp in parallel, creating a sound with a stronger low end than I.
	SLDN LEAD	This models a Soldano SLO-100. This is the typical sound of the eighties.
	METAL 5150	This models the lead channel of a Peavey EVH 5150.
	METAL LEAD	This is distortion sound that is ideal for performances of heavy riffs.
	OD-1	This models the sound of the BOSS OD-1. This produces sweet, mild distortion.
	OD-2 TURBO	This is the high-gain overdrive sound of the BOSS OD-2.
	DISTORTION	This gives a basic, traditional distortion sound.
	FUZZ	A fuzz sound with rich harmonic content.
Drive	0–127	Volume and amount of distortion of the amp
Master	0–127	Volume of the entire pre-amp
Gain	LOW, MIDDLE, HIGH	Amount of pre-amp distortion
Bass	0–127	Tone of the bass/mid/treble frequency range
Middle	0–127	
Treble	0–127	
Speaker Sw	OFF, ON	Selects whether the sound will be sent through the speaker simulation (ON) or not (OFF)

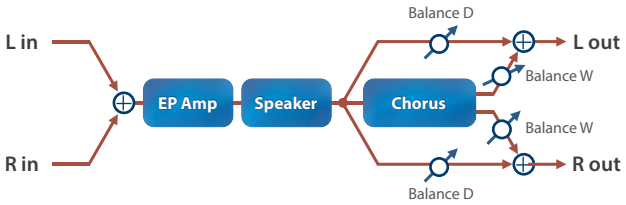
Parameter	Value	Explanation		
STyp		Cabinet	Diameter (in inches) and number of the speaker	Microphone
	SMALL 1	small open-back enclosure	10	dynamic
	SMALL 2	small open-back enclosure	10	dynamic
	MIDDLE	open back enclosure	12 x 1	dynamic
	JC-120	open back enclosure	12 x 2	dynamic
	BUILT-IN 1	open back enclosure	12 x 2	dynamic
	BUILT-IN 2	open back enclosure	12 x 2	condenser
	BUILT-IN 3	open back enclosure	12 x 2	condenser
	BUILT-IN 4	open back enclosure	12 x 2	condenser
	BUILT-IN 5	open back enclosure	12 x 2	condenser
	BG STACK 1	sealed enclosure	12 x 2	condenser
	BG STACK 2	large sealed enclosure	12 x 2	condenser
	MS STACK 1	large sealed enclosure	12 x 4	condenser
	MS STACK 2	large sealed enclosure	12 x 4	condenser
	METAL STACK	large double stack	12 x 4	condenser
	2-STACK	large double stack	12 x 4	condenser
	3-STACK	large triple stack	12 x 4	condenser
Delay Sw	OFF, ON	Delay on/off		
Dly Time	1–1300	Delay time from when the original sound is heard to when the delay sound is heard		
Delay Fbk	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.		
Dly HF	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Frequency at which the high-frequency portion of the delay sound will be cut (**BYPASS:** no cut)		
Dly Bal	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the delay (W) and the sound that is not sent through the delay (D).		
Level	0–127	Output Level		
Asgn1–4	OFF, Volume, Master Lv, Delay Sw, Dly Time, Delay Fbk, Dly Bal	Specifies the parameters that are assigned to assign 1–4.		

82 EP → Tremolo
(EP Amp Simulator → Tremolo)



Parameter	Value	Explanation
Type		Type of amp
	OLDCASE	A standard electric piano sound of the early 70s
	NEWCASE	A standard electric piano sound of the late 70s and early 80s
	WURLY	A standard electric piano sound of the 60s
Bass	-50–+50	Amount of low-frequency boost/cut
Treble	-50–+50	Amount of high-frequency boost/cut
Tremolo Sw	OFF, ON	Tremolo on/off
Tremolo Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
T. Speed	0.05–10.00 [Hz]	Rate of the tremolo effect
T. Spd Nt	Note ➡ "Note" (p. 75)	
Trm Depth	0–127	Depth of the tremolo effect
Trm Duty	-10–+10	Adjusts the duty cycle of the LFO waveform used to apply tremolo.
Sp Type	LINE, OLD, NEW, WURLY, TWIN	Type of speaker If LINE is selected, the sound will not be sent through the speaker simulation.
OD Switch	OFF, ON	Overdrive on/off
OD Gain	0–127	Overdrive input level
OD Drive	0–127	Degree of distortion Also changes the volume.
Level	0–127	Output Level
Asgn1–4	OFF, Bass, Treble, Tremolo Sw, T. Speed, Trm Depth	Specifies the parameters that are assigned to assign 1–4.

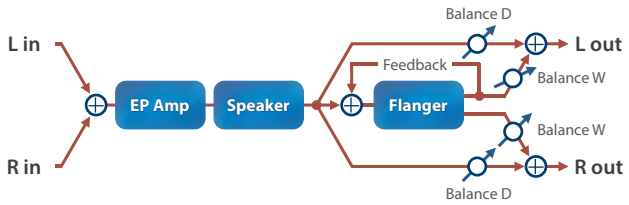
83 EP → Chorus
(EP Amp Simulator → Chorus)



Parameter	Value	Explanation
Type		Type of amp
	OLDCASE	A standard electric piano sound of the early 70s
	NEWCASE	A standard electric piano sound of the late 70s and early 80s
Bass	-50–+50	Amount of low-frequency boost/cut
Treble	-50–+50	Amount of high-frequency boost/cut
Cho Switch	OFF, ON	Chorus on/off
Cho PreDly	0.0–100 [ms]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Cho Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)

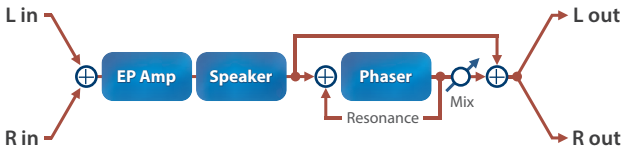
Parameter	Value	Explanation
C. Rate	0.05–10.00 [Hz]	Frequency of modulation
C. Rate Nt	Note ➡ "Note" (p. 75)	
Cho Depth	0–127	Depth of modulation
Cho Bal	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the chorus (W) and the sound that is not sent through the chorus (D).
Sp Type	LINE, OLD, NEW, WURLY, TWIN	Type of speaker If LINE is selected, the sound will not be sent through the speaker simulation.
OD Switch	OFF, ON	Overdrive on/off
OD Gain	0–127	Overdrive input level
OD Drive	0–127	Degree of distortion Also changes the volume.
Level	0–127	Output Level
Asgn1–4	OFF, Bass, Treble, Cho Switch, C. Rate, Cho Depth, Cho Bal	Specifies the parameters that are assigned to assign 1–4.

84 EP → Flanger (EP Amp Simulator → Flanger)



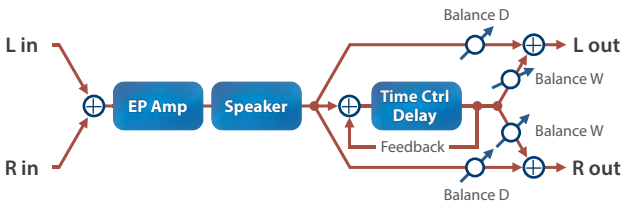
Parameter	Value	Explanation
Type		Type of amp
	OLDCASE	A standard electric piano sound of the early 70s
	NEWCASE	A standard electric piano sound of the late 70s and early 80s
Bass	-50–+50	Amount of low-frequency boost/cut
Treble	-50–+50	Amount of high-frequency boost/cut
Flg Switch	OFF, ON	Flanger on/off
Flg PreDly	0.0–100 [ms]	Adjusts the delay time from the direct sound until the flanger sound is heard.
Flg Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
F. Rate	0.05–10.00 [Hz]	Frequency of modulation
F. Rate Nt	Note ➡ "Note" (p. 75)	
Flg Depth	0–127	Depth of modulation
Flg Fbk	-98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.
Flg Bal	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the flanger (W) and the sound that is not sent through the flanger (D).
Sp Type	LINE, OLD, NEW, WURLY, TWIN	Type of speaker If LINE is selected, the sound will not be sent through the speaker simulation.
OD Switch	OFF, ON	Overdrive on/off
OD Gain	0–127	Overdrive input level
OD Drive	0–127	Degree of distortion Also changes the volume.
Level	0–127	Output Level
Asgn1–4	OFF, Bass, Treble, Flg Switch, F. Rate, Flg Depth, Flg Fbk, Flg Bal	Specifies the parameters that are assigned to assign 1–4.

85 EP → Phaser (EP Amp Simulator → Phaser)



Parameter	Value	Explanation
Type		Type of amp
	OLDCASE	A standard electric piano sound of the early 70s
	NEWCASE	A standard electric piano sound of the late 70s and early 80s
Bass	-50–+50	Amount of low-frequency boost/cut
Treble	-50–+50	Amount of high-frequency boost/cut
Phs Switch	OFF, ON	Phaser on/off
Phs Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
P. Rate	0.05–10.00 [Hz]	Frequency of modulation
P. Rate Nt	Note ➡ "Note" (p. 75)	
Phs Manual	0–127	Adjusts the basic frequency from which the sound will be modulated.
Phs Depth	0–127	Depth of modulation
Phs Reso	0–127	Amount of feedback
Phs Mix	0–127	Level of the phase-shifted sound
Sp Type	LINE, OLD, NEW, WURLY, TWIN	Type of speaker If LINE is selected, the sound will not be sent through the speaker simulation.
OD Switch	OFF, ON	Overdrive on/off
OD Gain	0–127	Overdrive input level
OD Drive	0–127	Degree of distortion Also changes the volume.
Level	0–127	Output Level
Asgn1–4	OFF, Bass, Treble, Phs Switch, P. Rate, Phs Manual, Phs Depth, Phs Reso, Phs Mix	Specifies the parameters that are assigned to assign 1–4.

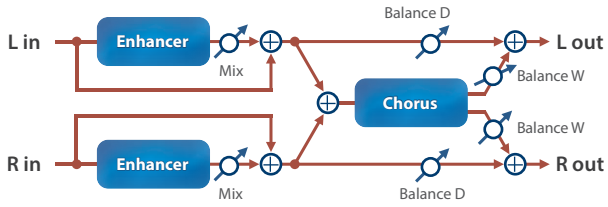
86 EP → Delay (EP Amp Simulator → Delay)



Parameter	Value	Explanation
Type		Type of amp
	OLDCASE	A standard electric piano sound of the early 70s
	NEWCASE	A standard electric piano sound of the late 70s and early 80s
Bass	-50–+50	Amount of low-frequency boost/cut
Treble	-50–+50	Amount of high-frequency boost/cut
Dly Switch	OFF, ON	Delay on/off
Delay Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
D. Time	1–1300	Delay time from when the original sound is heard to when the delay sound is heard
D. Time Nt	Note ➡ "Note" (p. 75)	

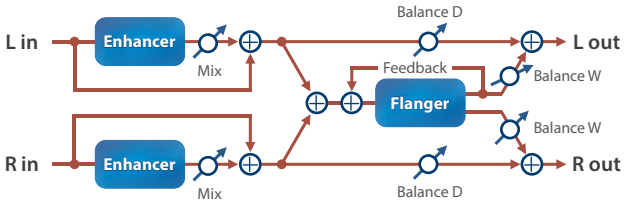
Parameter	Value	Explanation
Dly Accel	0–15	Speed at which the current delay time changes to the specified delay time when you change the delay time. The speed of the pitch change will change simultaneously with the delay time.
Delay Fbk	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Dly HF	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Frequency at which the high-frequency portion of the delay sound will be cut (**BYPASS:** no cut)
Dly Bal	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the delay (W) and the sound that is not sent through the delay (D).
Sp Type	LINE, OLD, NEW, WURLY, TWIN	Type of speaker If LINE is selected, the sound will not be sent through the speaker simulation.
OD Switch	OFF, ON	Overdrive on/off
OD Gain	0–127	Overdrive input level
OD Drive	0–127	Degree of distortion Also changes the volume.
Level	0–127	Output Level
Asgn1–4	OFF, Bass, Treble, Dly Switch, D. Time, Delay Fbk	Specifies the parameters that are assigned to assign 1–4.

87 Enhncr → Cho (Enhancer → Chorus)



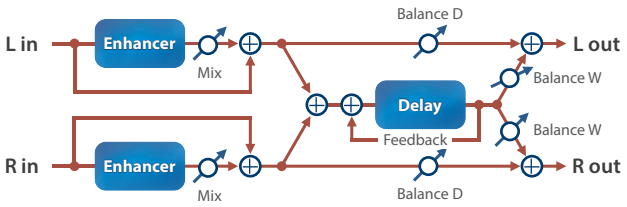
Parameter	Value	Explanation
Enh Sens	0–127	Sensitivity of the enhancer
Enh Mix	0–127	Level of the overtones generated by the enhancer
Cho PreDly	0.0–100 [ms]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Cho Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
C. Rate	0.05–10.00 [Hz]	Frequency of modulation
C. Rate Nt	Note ➡ "Note" (p. 75)	
Cho Depth	0–127	Depth of modulation
Cho Bal	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the chorus (W) and the sound that is not sent through the chorus (D).
Level	0–127	Output Level
Asgn1–4	OFF, Enh Sens, Enh Mix, C. Rate, Cho Bal	Specifies the parameters that are assigned to assign 1–4.

88 Enhncr → Fl (Enhancer → Flanger)



Parameter	Value	Explanation
Enh Sens	0–127	Sensitivity of the enhancer
Enh Mix	0–127	Level of the overtones generated by the enhancer
Flg PreDly	0.0–100 [ms]	Adjusts the delay time from the direct sound until the flanger sound is heard.
Flg Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
F. Rate	0.05–10.00 [Hz]	Frequency of modulation
F. Rate Nt	Note ➡ "Note" (p. 75)	
Flg Depth	0–127	Depth of modulation
Flg Fbk	-98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.
Flg Bal	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the flanger (W) and the sound that is not sent through the flanger (D).
Level	0–127	Output Level
Asgn1–4	OFF, Enh Sens, Enh Mix, F. Rate, Flg Fbk, Flg Bal	Specifies the parameters that are assigned to assign 1–4.

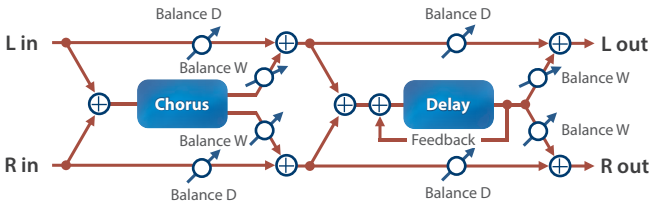
89 Enhncr → Dly (Enhancer → Delay)



Parameter	Value	Explanation
Enh Sens	0–127	Sensitivity of the enhancer
Enh Mix	0–127	Level of the overtones generated by the enhancer
Delay Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
D. Time	1–2600	Delay time from when the original sound is heard to when the delay sound is heard
D. Time Nt	Note ➡ "Note" (p. 75)	
Delay Fbk	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Dly HF	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect will be cut. If you do not want to cut the high frequencies, set this parameter to BYPASS.
Dly Bal	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the delay (W) and the sound that is not sent through the delay (D).
Level	0–127	Output Level

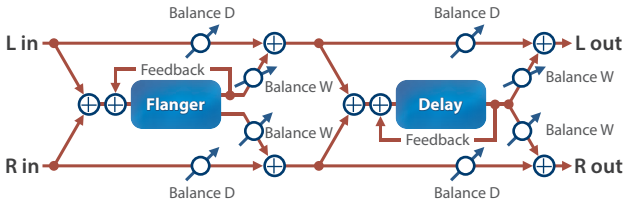
Parameter	Value	Explanation
Asgn1–4	OFF, Enh Sens, Enh Mix, D. Time, Delay Fbk, Dly Bal	Specifies the parameters that are assigned to assign 1–4.

90 Chorus → Dly (Chorus → Delay)



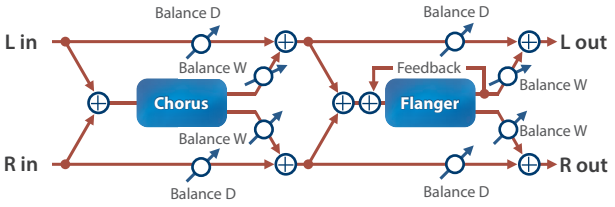
Parameter	Value	Explanation
Cho PreDly	0.0–100 [ms]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Cho Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
C. Rate	0.05–10.00 [Hz]	Frequency of modulation
C. Rate Nt	Note ➡ "Note" (p. 75)	
Cho Depth	0–127	Depth of modulation
Cho Bal	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the chorus sound (W)
Delay Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
D. Time	1–2600	Delay time from when the original sound is heard to when the delay sound is heard
D. Time Nt	Note ➡ "Note" (p. 75)	
Delay Fbk	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Dly HF	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect will be cut. If you do not want to cut the high frequencies, set this parameter to BYPASS.
Dly Bal	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the delay (W) and the sound that is not sent through the delay (D).
Level	0–127	Output Level
Asgn1–4	OFF, C. Rate, Cho Bal, Delay Fbk, Dly Bal	Specifies the parameters that are assigned to assign 1–4.

91 Flanger → Dly (Flanger → Delay)



Parameter	Value	Explanation
Flg PreDly	0.0–100 [ms]	Adjusts the delay time from the direct sound until the flanger sound is heard.
Flg Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
F. Rate	0.05–10.00 [Hz]	Frequency of modulation
F. Rate Nt	Note ➡ "Note" (p. 75)	
Flg Depth	0–127	Depth of modulation
Flg Fbk	-98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.
Flg Bal	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the flanger sound (W)
Delay Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
D. Time	1–2600	Delay time from when the original sound is heard to when the delay sound is heard
D. Time Nt	Note ➡ "Note" (p. 75)	
Delay Fbk	-98–+98 [%]	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Dly HF	200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, BYPASS [Hz]	Adjusts the frequency above which sound fed back to the effect will be cut. If you do not want to cut the high frequencies, set this parameter to BYPASS.
Dly Bal	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the delay (W) and the sound that is not sent through the delay (D).
Level	0–127	Output Level
Asgn1–4	OFF, F. Rate, Flg Fbk, Flg Bal, Delay Fbk, Dly Bal	Specifies the parameters that are assigned to assign 1–4.

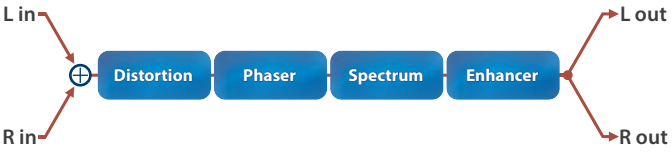
92 Chorus → Fl (Chorus → Flanger)



Parameter	Value	Explanation
Cho PreDly	0.0–100 [ms]	Adjusts the delay time from the direct sound until the chorus sound is heard.
Cho Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
C. Rate	0.05–10.00 [Hz]	Modulation frequency of the chorus effect
C. Rate Nt	Note ➡ "Note" (p. 75)	
Cho Depth	0–127	Modulation depth of the chorus effect
Cho Bal	D100: 0W–D0: 100W	Volume balance between the direct sound (D) and the chorus sound (W)
Flg PreDly	0.0–100 [ms]	Adjusts the delay time from the direct sound until the flanger sound is heard.
Flg Sync	OFF, ON	If this is ON, the rate synchronizes with the tempo of the rhythm. ➡ "Tempo" (p. 3, p. 34)
F. Rate	0.05–10.00 [Hz]	Modulation frequency of the flanger effect
F. Rate Nt	Note ➡ "Note" (p. 75)	
Flg Depth	0–127	Modulation depth of the flanger effect
Flg Fbk	-98–+98 [%]	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.
Flg Bal	D100: 0W–D0: 100W	Adjusts the volume balance between the sound that is sent through the flanger (W) and the sound that is not sent through the flanger (D).
Level	0–127	Output Level
Asgn1–4	OFF, C. Rate, Cho Bal, F. Rate, Flg Fbk, Flg Bal	Specifies the parameters that are assigned to assign 1–4.

93 JD-Multi

Recreates the effects included in group A of the JD-800.



Parameter	Value	Explanation
Seq	DS - PH - SP - EN	Selects the connection order of the effects. DS: Distortion PH: Phaser SP: Spectrum EN: Enhancer
	DS - PH - EN - SP	
	DS - SP - PH - EN	
	DS - SP - EN - PH	
	DS - EN - PH - SP	
	DS - EN - SP - PH	
	PH - DS - SP - EN	
	PH - DS - EN - SP	
	PH - SP - DS - EN	
	PH - SP - EN - DS	
	PH - EN - DS - SP	
	PH - EN - SP - DS	
	SP - DS - PH - EN	
	SP - DS - EN - PH	
	SP - PH - DS - EN	
	SP - PH - EN - DS	
	SP - EN - DS - PH	
	SP - EN - PH - DS	
	EN - DS - PH - SP	
	EN - DS - SP - PH	
	EN - PH - DS - SP	
	EN - PH - SP - DS	
	EN - SP - DS - PH	
	EN - SP - PH - DS	
DS Switch	OFF, ON	Turns the distortion on/off.
DS Type	Sets the type of distortion.	
	MELLOW DRV	Softer distortion with a slightly darker sound.
	OVERDRIVE	Distortion that resembles a vacuum tube amp being driven.
	CRY DRV	Distortion that emphasizes the high end.
	MELLOW DST	Gives the feeling of distortion playing through a large amp.
	LIGHT DST	Strong distortion with a bright sound.
	FAT DIST	Thick distortion that emphasizes the low and high ends.
	FUZZ DIST	Distortion that's even more powerful that FAT DIST.
DS Drive	0–100	Sets the amount of distortion.
DS Level	0–100	Sets the distortion output level.
PH Switch	OFF, ON	Turns the phaser on/off.
PH Manual	50 [Hz]–15.0 [kHz]	Sets the basic frequency from which the sound is modulated with the phaser effect.
PH Rate	0.1–10.0 [Hz]	Sets the cycle of the phaser modulation.
PH Depth	0–100	Sets the depth of the phaser modulation.
PH Resonance	0–100	Sets the amount of feedback for the phaser. Increasing the value creates a more unusual sound.
PH Mix	0–100	Sets the level of the phase-shifted sound.
SP Switch	OFF, ON	Turns the spectrum on/off.
SP Band Ctrl1	-15–+15 [dB]	Sets the gain (amount of boost/cut) in the 250 Hz range.
SP Band Ctrl2	-15–+15 [dB]	Sets the gain (amount of boost/cut) in the 500 Hz range.
SP Band Ctrl3	-15–+15 [dB]	Sets the gain (amount of boost/cut) in the 1000 Hz range.

Parameter	Value	Explanation
SP Band Ctrl4	-15–+15 [dB]	Sets the gain (amount of boost/cut) in the 2000 Hz range.
SP Band Ctrl5	-15–+15 [dB]	Sets the gain (amount of boost/cut) in the 4000 Hz range.
SP Band Ctrl6	-15–+15 [dB]	Sets the gain (amount of boost/cut) in the 8000 Hz range.
SP Width	1–5	Sets the bandwidth for changing the levels, common to all bands.
EH Switch	OFF, ON	Turns the enhancer on/off.
EH Sens	0–100	Sets how easily the enhancer effect is applied.
EH Mix	0–100	Sets the ratio at which the harmonics generated by the enhancer are mixed with the original sound.
Pan	L64–63R	Changes the pan.
Level	0–127	Sets the output volume.

Note

1/64T	Sixty-fourth-note triplet	1/64	Sixty-fourth note	1/32T	Thirty-second-note triplet
1/32	Thirty-second note	1/16T	Sixteenth-note triplet	1/32.	Dotted thirty-second note
1/16	Sixteenth note	1/8T	Eighth-note triplet	1/16.	Dotted sixteenth note
1/8	Eighth note	1/4T	Quarter-note triplet	1/8.	Dotted eighth note
1/4	Quarter note	1/2T	Half-note triplet	1/4.	Dotted quarter note
1/2	Half note	1T	Whole-note triplet	1/2.	Dotted half note
1	Whole note	2T	Double-note triplet	1.	Dotted whole note
2	Double note				