Aerophone Editor Owner's Manual

Getting Ready to Use Aerophone Editor

Use a USB cable to connect the Aerophone to your smartphone, and power-on the Aerophone.

Connecting to an Aerophone AE-10

You'll need to provide the following

iOS device users

- Apple Corporation Lightning – USB camera adaptor (sold separately)

Android device users

- USB A type – USB micro B type adaptor (commercially available)
  Each of these items are subsequently referred to as a "USB adapter."

To use Aerophone Editor with a smartphone, first install batteries in the Aerophone AE-10 or connect the AC adapter.
For details on how to install batteries or connect the AC adapter, refer to the owner's manual.

1. **Use a USB cable to connect the USB adapter to the Aerophone.**

2. **Connect the USB adapter to the smartphone.**

3. **Turn the Aerophone's [POWER] switch "on."**

Apple Corporation Lightning - USB camera adaptor (sold separately)

USB A type – USB micro B type adaptor (commercially available)
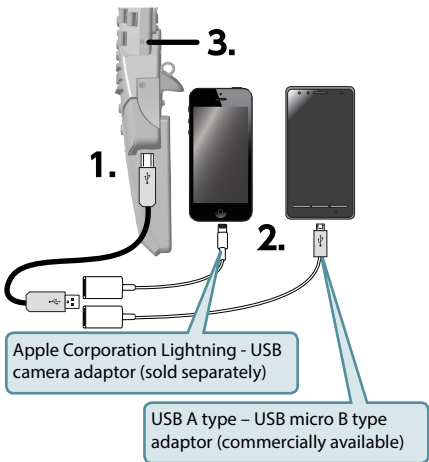
4. Tap "Aerophone Editor"
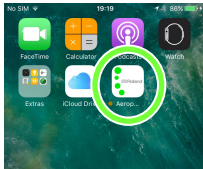
5. Tap the gear icon.
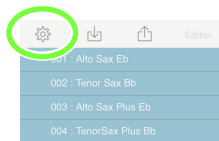
6. For both INPUT and OUTPUT, select "Aerophone."

7. Tap [Close].

Using Aerophone Editor

Specifying Values

When you tap a value, a controller (*1) appears.
You can continue swiping left or right to change
the value.
You can tap the [-][+] buttons to adjust the value
precisely.

Returns
to the default
value.
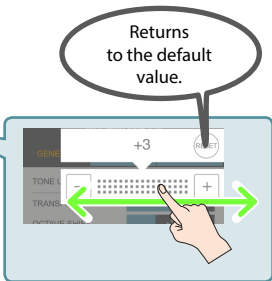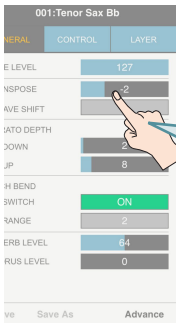
* 1: This appears if "Show big slider" is "on" in the
settings screen.

Close

MIDI DEVICE

INPUT   Aerophone ▼

OUTPUT   Aerophone ▼

■ Show big slider.

Specifying a range

For parameters that specify a range of values (lower limit – upper limit), you can swipe the left side of the slider to change the lower limit, or swipe the right side to change the upper limit.

NERAL   CONTROL   LAYER

Lower limit   **Upper limit**

I LEFT
ASSIGN   CC18

RANGE   0   1

TOGGLE

I RIGHT
ASSIGN   C

RANGE   0   1
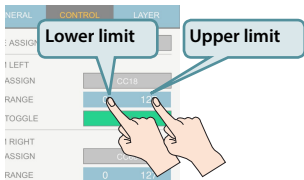
Editing a Tone

When you start Aerophone Editor, a tone list (001–100) appears.
Swipe up or down on the list to scroll the list.
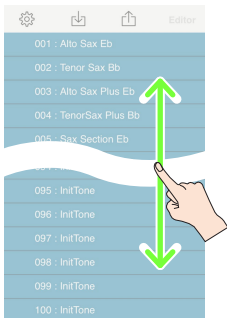
1. Select the tone that you want to edit.

The tone is sent to the Aerophone.

			Editor
001 : Alto Sax Eb			
002 : Tenor Sax Bb			
003 : Alto Sax Plus Eb			
004 : TenorSax Plus Bb			
005 : Sax Section Eb			
095 : InitTone			
096 : InitTone			
097 : InitTone			
098 : InitTone			
099 : InitTone			
100 : InitTone			

2. With the tone selected, tap [Editor].

Editing a Tone (GENERAL Screen)

In the GENERAL screen you can edit the basic settings of a tone.

[GENERAL]

TONE LEVEL
Specifies the volume of the tone.

OCTAVE SHIFT
Specifies the octave of the tone.

CHORUS
Specifies the amount of the chorus effect.

TRANSPOSE
Transposes the key.

VIBRATO DEPTH
Use DOWN and UP to specify the range of pitch change produced by vibrato.

PITCH BEND
Specifies the amount of change produced by the pitch bend function.

REVERB
Specifies the amount of the reverb effect.

(Screen shows: Read, Write, Initia... — 001:Alto Sax Eb — GENERAL / CONTROL / ...YER — TONE LEVEL 127, TRANSPOSE +3, OCTAVE SHIFT -1, VIBRATO DEPTH DOWN, UP 8, PITCH BEND SWITCH On, RANGE 4, REVERB 64, CHORUS — Save ...ve As Advan...)
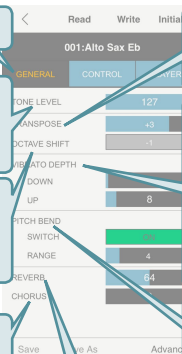
Editing a Tone's Controller Settings (CONTROL Screen)

In the CONTROL screen you can assign functions to the controllers. By using controllers, you can control the character of the sound while you perform.

[CONTROL]

BITE ASSIGN
Specifies the function that is assigned to the bite sensor.

THUMB LEFT
Assigns the function operated by moving the thumb controller to the left.

THUMB RIGHT
Assigns the function operated by moving the thumb controller to the right.

OCTAVE KEY
Specifies the function of the octave key.

HOLD
Sustains the sound.

Layering Multiple Parts (LAYER Screen)

By using Aerophone Editor you can play up to four instruments simultaneously. In the LAYER screen you can edit the basic parameters of each part.

PART switch
Turns the part on/off.

[LAYER]

LEVEL
Specifies the volume of the part.

[LIST] button
Selects the tone (*2) of the part.

OCT.
Specifies the octave of the part.

```
    ‹      Read    Write   Initia
         001:Alto Sax Eb
   GENERAL    CONTROL    LAYER
 PART 1    SOUND
 On                        LIST
 PART     100      OCT    0
 LEVEL
 PART 2    SOUND
 ON                        LIST
 LEVEL    100      OCT    0
 PART 3    SOUND
 ON                        LIST
 PART     100      OCT    0
 LEVEL
 PART 4    SOUND
 ON                        LIST
 PART     100      OCT    0
 LEVEL
   Save    Save As      Advanc
```
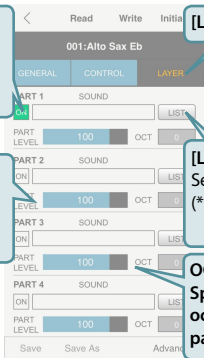
* 2: If a SuperNATURAL sound is assigned to multiple parts, the onset of notes might be delayed. SuperNATURAL sounds are shown by a [SN] indication.

Editing Tones in More Detail (Advance Screen)

You can make more detailed adjustments to the parameters of each part.
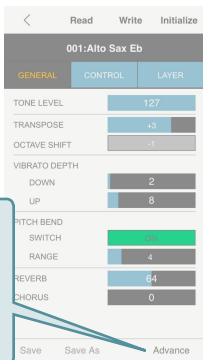
[Advance] button
Accesses a screen where you can edit parameters in detail.

For details on the each parameter, refer to "Advance Screen Parameter List" (p. 25).

Saving Your Edits

Saving to the Tone List

You can save the edited tone to the tone list.
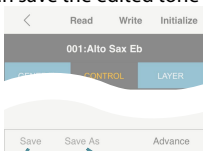
Save
Saves to the current tone number.

Save As
Saves to a tone number that you specify.

Sending the Tone to the Aerophone AE-10

You can send the edited tone to the Aerophone AE-10.

Read
Reads the tone from the Aerophone AE-10.

Write
Sends the tone to the Aerophone AE-10 (*3).

| < | Read | Write | Initialize |

001:Alto Sax Eb

GENERAL CONTROL LAYER

Save Save As Advance
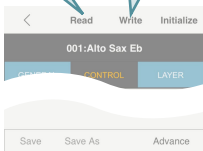
* 3: Simply sending the tone does not save it in the user tones of the Aerophone AE-10. To save it as a user tone, execute the save operation on the Aerophone AE-10.

Initializing the Tone

You can initialize the settings of the tone.
This is convenient when you want to design the entire sound from scratch.

Initialize
Initializes all parameters of the tone.
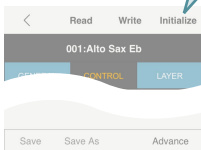
Editing the List

You can copy or delete tones shown in the list. You can also use the copy buffer to change the order of the tones.

MEMO

The "copy buffer" is temporary memory within the app. You can use it to copy or organize tones.
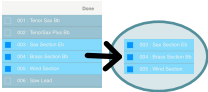
1. Tap [Organize].

2. Tap the tone(s) that you want to copy or the tone(s) whose order you want to change.

001 : Tenor Sax Bb

002 : TenorSax Plus Bb

003 : Sax Section Eb

004 : Brass Section Bb

005 : Wind Section

006 : Saw Lead
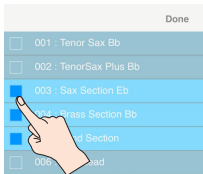
3. Tap one of the following.

Command	Explanation
[Copy]	Copies the tapped tone(s) to the copy buffer.
[Cut]	Copies the tapped tone(s) to the copy buffer, and removes them from the list. The subsequent tone numbers are renumbered forward.
[Delete]	Deletes the tapped tone(s) from the list. The subsequent tone numbers are renumbered forward.

4. Tap the tone that you want to be

the copy-destination (exchange-destination).

5. Tap one of the following.

Command	Explanation
[Paste]	The tones in the copy buffer are overwritten onto the tone that you tap in step 5. If the copy buffer contains multiple tones, they overwrite the tone that you tap in step 5 and subsequent tones.
[Insert]	The tones in the copy buffer are inserted at the tone that you tap, and the subsequent portion of the list is shifted backward. If shifting the list causes any tone numbers to exceed 100, those tones are discarded (a message is displayed).

Exchanging Tone Lists

Tone lists of the Aerophone Editor can be exchanged between the Aerophone AE-10, the smartphone, and cloud service.

Exporting

You can send the current tone list to an Aerophone AE-10, the smartphone, or cloud service.

1. **Access the tone list screen.**

2. **Tap the export icon.**
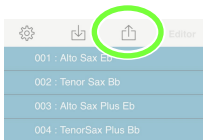
3. Tap one of the following.
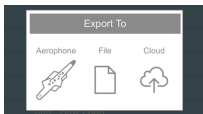
Icon	Explanation
Aerophone	Transfers the tones to the Aerophone AE-10.
File	Saves the tones to the smartphone.
Cloud	Saves the tones in the cloud service. **iOS device** • Saves the tones in the iCloud Drive. **Android device** • Saves the tones in the Google Drive.

MEMO

When you tap the Cloud icon, multiple services supported by the device might appear. This app only supports operation using iCloud Drive (for iOS) or Google Drive (for Android).

Importing

A tone list saved in the Aerophone AE-10, the smartphone, or cloud service can be imported into Aerophone Editor.

1. **Access the tone list screen.**

2. **Tap the import icon.**

3. **Tap one of the following.**

Icon	Explanation
Aerophone	Imports user tones from the Aerophone AE-10 into Aerophone Editor.
File	Imports user tones saved in the smartphone into Aerophone Editor.
Cloud	Imports user tones saved in cloud service into Aerophone Editor. **iOS device** • Imports user tones saved in iCloud Drive into Aerophone Editor. **Android device** • Imports user tones saved in Google Drive into Aerophone Editor.

MEMO

When you tap the Cloud icon, multiple services supported by the device might appear.
This app only supports operation using iCloud Drive (for iOS) or Google Drive (for Android).

Advance Screen Parameter List

PART

Parameter	Explanation
LAYER	Switches the part to edit.
SWITCH	Selects the parts that will sound.
[LIST] button	Selects the sound of the part. The selected sound is shown in "SOUND." SuperNATURAL sounds are indicated by an "SN" icon.
TONE LEVEL	Adjust the volume of each part. This setting's main purpose is to adjust the volume balance between parts.
PAN	Adjust the pan of each part. "L64" is far left, "0" is center, and "63R" is far right.
KEY RANGE	Adjusts the amount of Chorus for each Part. If you don't want to add the Chorus effect, set it to 0.

Parameter		Explanation
PITCH	**OCTAVE SHIFT**	Adjusts the pitch of the part's sound up or down in units of an octave (+/-3 octaves).
	COURSE TUNE	Adjusts the pitch of the part's sound up or down in semitone steps (+/-4 octaves).
	FINE TUNE	Adjusts the pitch of the part's sound up or down in 1-cent steps (+/- 50 cents). * One cent is 1/100th of a semitone.
FILTER OFFSET	**CUTOFF**	Adjusts the cutoff frequency for the tone/drum kit assigned to a part. * For some tones, the effect may be difficult to notice.
	RESONANCE	Adjusts the Resonance for the tone/drum kit assigned to a part. * For some tones, the effect may be difficult to notice.
ENV OFFSET	**ATTACK**	Adjusts the Attack Time for the tone/drum kit assigned to a part.
	DECAY	Adjusts the Decay Time for the tone/drum kit assigned to a part.
	RELEASE	Adjusts the Release Time for the tone/drum kit assigned to a part.

Parameter		Explanation
LFO OFFSET	RATE	For each part, adjust 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.
	DEPTH	For each part, this 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.
	DELAY	For each part, this adjusts the time delay until the vibrato (pitch modulation) effect begins. Higher settings will produce a longer delay time before vibrato begins, while lower settings produce a shorter time.
BEND RANGE		Specifies the amount of pitch change caused by operating pitch bend, in semitone steps (up to two octaves). If you want to use the Pitch Bend Range initial setting of the tone, set this to "TONE."

Parameter		Explanation
PORTAMENTO	SW	Specify whether portamento will be applied. Turn this parameter "ON" when you want to apply Portamento and "OFF" when you don't. If you want to use the Portamento Switch initial setting of the tone, set this to "TONE."
	TIME	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. If you want to use the Portamento Time initial setting of the tone, set this to "TONE."
OUTPUT	ASSIGN	Specifies the output destination of the part. Choose "MFX" if you want to output to MFX, or "OUTPUT" if you want to output directly.
	MFX SELECT	Specifies the MFX that is assigned to the part. If you don't want to use MFX, choose "OFF."
	LEVEL	Specifies the output level of the part.
SEND LEVEL	CHORUS	Adjusts the amount of Chorus for each Part.
	REVERB	Adjusts the amount of Reverb for each Part.

Copying a part's settings to another part

1. Tap [Copy this part to...].

SEND LEVEL	
CHORUS	0
REVERB	0

Copy this part to...
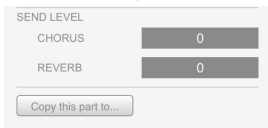
2. Select the copy-destination part.

Select Destination Part

Part 1

Part 2

Part 3

Part 4

Cancel   COPY
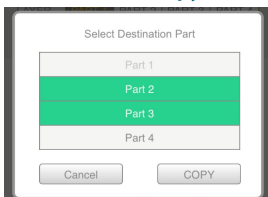
* You can select multiple copy-destinations.
* If you decide to cancel, tap [Cancel].

3. Tap [COPY].

NOTE

Note that executing the copy overwrites the previous data.

CONTROL

Parameter		Explanation
BREATH1 BREATH2	**ASSIGN**	Specifies the parameter that is controlled by the breath sensor (the force of your blowing).
	RANGE	Specifies the range (minimum value, maximum value) of the value controlled by the breath sensor.
	TOGGLE	Uses the breath sensor as a switch. If this is ON, the value switches between the maximum value and minimum value specified by RANGE each time you blow.
BITE1 BITE2	**ASSIGN**	Specifies the parameter that is controlled by the bite sensor (the strength with which you bite the mouthpiece).
	RANGE	Specifies the range (minimum value, maximum value) of the value controlled by the bite sensor.
	TOGGLE	Uses the bite sensor as a switch. If this is ON, the value switches between the maximum value and minimum value specified by RANGE each time you bite the mouthpiece.

THUMB CONTROLS

Parameter		Explanation
UP1 UP2	ASSIGN	Specifies the parameter that is controlled when you operate the thumb control upward.
	RANGE	Specifies the range (minimum value, maximum value) of the value controlled when you operate the thumb control upward.
	TOGGLE	Uses the thumb control as a switch. If this is ON, the value switches between the maximum value and minimum value specified by RANGE each time you operate the thumb control upward.
DOWN1 DOWN2	ASSIGN	Specifies the parameter that is controlled when you operate the thumb control downward.
	RANGE	Specifies the range (minimum value, maximum value) of the value controlled when you operate the thumb control downward.
	TOGGLE	Uses the thumb control as a switch. If this is ON, the value switches between the maximum value and minimum value specified by RANGE each time you operate the thumb control downward.

Parameter		Explanation
LEFT1 LEFT2	ASSIGN	Specifies the parameter that is controlled when you operate the thumb control leftward.
	RANGE	Specifies the range (minimum value, maximum value) of the value controlled when you operate the thumb control leftward.
	TOGGLE	Uses the thumb control as a switch. If this is ON, the value switches between the maximum value and minimum value specified by RANGE each time you operate the thumb control leftward.
RIGHT1 RIGHT2	ASSIGN	Specifies the parameter that is controlled when you operate the thumb control rightward.
	RANGE	Specifies the range (minimum value, maximum value) of the value controlled when you operate the thumb control rightward.
	TOGGLE	Uses the thumb control as a switch. If this is ON, the value switches between the maximum value and minimum value specified by RANGE each time you operate the thumb control rightward.
VELOCITY	MIN	Specifies the minimum velocity value.
	MAX	Specifies the maximum velocity value.

SuperNATURAL CONTROL SOURCE

Parameter	Explanation
CONTROL 1 **CONTROL 2**	Specify the MIDI messages that control SuperNATURAL sounds. CONTROL 1 typically controls dynamics, and CONTROL 2 typically controls vibrato.

MFX

MEMO

Parameters marked with a ☆ can be controlled using the "MFX1" and "MFX2" parameters of the Aerophone AE-10.

Parameter	Explanation
MFX1/MFX2	The Aerophone is equipped with two MFX processors. Select the MFX that you want to edit.
MFX TYPE	Turns MFX on/off, and selects the type of MFX to use.

EQUALIZER

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

L in ⟶ [4-Band EQ] ⟶ L out

R in ⟶ [4-Band EQ] ⟶ R out
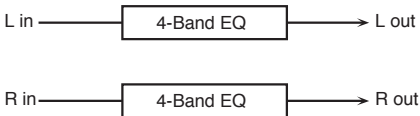
Parameter	Value	Explanation
HIGH FREQ	2000, 4000, 8000[Hz]	Frequency of the high range
HIGH GAIN (☆)	-15–+15[dB]	Gain of the high range
MID1 FREQ	200–8000[Hz]	Frequency of the middle range 1
MID1 Q	0.5, 1.0, 2.0, 4.0, 8.0	Width of the middle range 1 Set a higher value for Q to narrow the range to be affected.
MID1 GAIN	-15–+15[dB]	Gain of the middle range 1
MID2 FREQ	200–8000[Hz]	Frequency 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.
MID2 GAIN	-15–+15[dB]	Gain of the middle range 2
LOW FREQ	200, 400[Hz]	Frequency of the low range
LOW GAIN	-15–+15[dB]	Gain of the low range
LEVEL	0–127	Output level

LOW BOOST

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

```
L in ── Low Boost ── 2-Band EQ ──→ L out

R in ── Low Boost ── 2-Band EQ ──→ R out
```
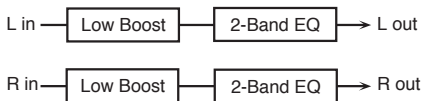
Parameter	Value	Explanation
BOOST FREQ	50–125[Hz]	Center frequency at which the lower range will be boosted
BOOST GAIN (☆)	0–+12[dB]	Amount by which the lower range will be boosted
BOOST WIDTH	WIDE, MID, NARROW	Width of the lower range that will be boosted
HIGH GAIN	-15–+15[dB]	Gain of the high frequency range
LOW GAIN	-15–+15[dB]	Gain of the low frequency range
LEVEL	0–127	Output level

ENHANCER

Controls the overtone structure of the high frequencies, adding sparkle and tightness to the sound.
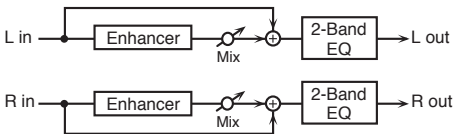
Parameter	Value	Explanation
SENS	0–127	Sensitivity of the enhancer
MIX (☆)	0–127	Level of the overtones generated by the enhancer
HIGH GAIN	-15–+15[dB]	Gain of the high range
LOW GAIN	-15–+15[dB]	Gain of the low range
LEVEL	0–127	Output Level

AUTO WAH

Cyclically controls a filter to create cyclic change in timbre.

L in → Auto Wah → 2-Band EQ → L out

R in → Auto Wah → 2-Band EQ → R out
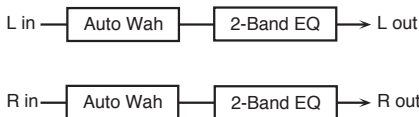
Parameter	Value	Explanation
FILTER TYPE	Type of filter	
	LPF	The wah effect will be applied over a wide frequency range.
	BPF	The wah effect will be applied over a narrow frequency range.
MANUAL	0–127	Adjusts the center frequency at which the effect is applied.
PEAK	0–127	Adjusts the amount of the wah effect that will occur in the range of the center frequency. Set a higher value for Q to narrow the range to be affected.
SENS	0–127	Adjusts the sensitivity with which the filter is controlled.

Parameter	Value	Explanation
POLARITY		Sets the direction in which the frequency will change when the auto-wah filter is modulated.
	UP	The filter will change toward a higher frequency.
	DOWN	The filter will change toward a lower frequency.
RATE (☆)	0.05–10.00[Hz]	Frequency of modulation
DEPTH	0–127	Depth of modulation
PHASE	0–180[deg]	Adjusts the degree of phase shift of the left and right sounds when the wah effect is applied.
HIGH GAIN	-15–+15[dB]	Gain of the high range
LOW GAIN	-15–+15[dB]	Gain of the low range
LEVEL	0–127	Output level

HUMANIZER

Adds a vowel character to the sound, making it similar to a human voice.
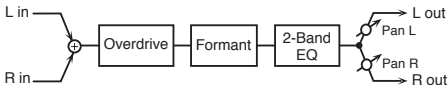
Parameter	Value	Explanation
DRIVE SW	OFF, ON	Turns Drive on/off.
DRIVE	0–127	Degree of distortion Also changes the volume.
VOWEL1	a, e, i, o, u	Selects the vowel.
VOWEL2	a, e, i, o, u	
RATE (☆)	0.05–10.00[Hz]	Frequency at which the two vowels switch

| Parameter	Value	Explanation
DEPTH	0–127	Effect depth
INPUT 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).
INPUT SYNC THRES	0–127	Volume level at which reset is applied
MANUAL	Point at which VOWEL 1/2 switch	
	49 or less	VOWEL1 will have a longer duration.
	50	VOWEL1 and 2 will be of equal duration.
	51 or more	VOWEL2 will have a longer duration.
HIGH GAIN	-15–+15[dB]	Gain of the high frequency range
LOW GAIN	-15–+15[dB]	Gain of the low frequency range
PAN	L64–63R	Stereo location of the output
LEVEL	0–127	Output level

PHASER

This is a stereo phaser. A phase-shifted sound is added to the original sound and modulated.
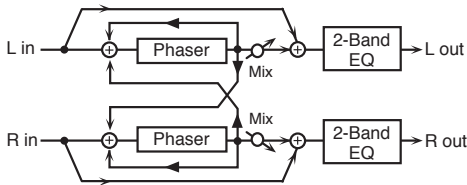
Parameter	Value	Explanation
MODE	4-STAGE, 8-STAGE, 12-STAGE	Number of stages in the phaser
MANUAL (☆)	0–127	Adjusts the basic frequency from which the sound will be modulated.
RATE	0.05–10.00[Hz]	Frequency of modulation
DEPTH	0–127	Depth of modulation
POLARITY	Selects whether the left and right phase 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
CROSS FEEDBACK	-98–+98 [%]	Adjusts the proportion of the phaser sound that is fed back into the effect. Negative (-) settings will invert the phase.

Parameter	Value	Explanation
MIX	0–127	Level of the phase-shifted sound
HIGH GAIN	-15–+15[dB]	Gain of the low range
LOW GAIN	-15–+15[dB]	Gain of the high range
LEVEL	0–127	Output level

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.

```
L in ──[ Ring Mod ]──[ 2-Band EQ ]──→ L out


R in ──[ Ring Mod ]──[ 2-Band EQ ]──→ R out
```
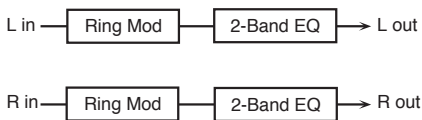
Parameter	Value	Explanation
FREQUENCY	0–127	Adjusts the frequency at which modulation is applied.
SENS	0–127	Adjusts the amount of frequency modulation applied.
POLARITY	Determines whether the frequency modulation moves towards higher frequencies or lower frequencies.	
	UP	Higher frequencies
	DOWN	Lower frequencies

Parameter	Value	Explanation
HIGH GAIN	-15–+15[dB]	Gain of the high frequency range
LOW GAIN	-15–+15[dB]	Gain of the low frequency range
BALANCE (☆)	D100:0W–D0:100W	Volume balance between the direct sound (D) and the effect sound (W)
LEVEL	0–127	Output level

TREMOLO

Cyclically modulates the volume to add tremolo effect to the sound.
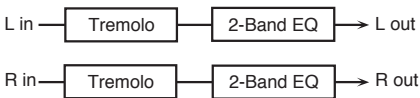
Parameter	Value	Explanation
MOD WAVE	Modulation Wave	
	TRI	Triangle wave
	SQR	Square wave
	SIN	Sine wave
	SAW1, 2	Sawtooth wave SAW1 SAW2
RATE (☆)	0.05–10.00[Hz]	Frequency of the change

Parameter	Value	Explanation
DEPTH	0–127	Depth to which the effect is applied
HIGH GAIN	-15–+15[dB]	Gain of the high range
LOW GAIN	-15–+15[dB]	Gain of the low range
LEVEL	0–127	Output level

AUTO PAN

Cyclically modulates the stereo location of the sound.

Parameter	Value	Explanation
	Modulation Wave	
	TRI	Triangle wave
	SQR	Square wave
	SIN	Sine wave
MOD WAVE	SAW1, 2	Sawtooth wave
RATE (☆)	0.05–10.00[Hz]	Frequency of the change
DEPTH	0–127	Depth to which the effect is applied

Parameter	Value	Explanation
HIGH GAIN	-15−+15[dB]	Gain of the high range
LOW GAIN	-15−+15[dB]	Gain of the low range
LEVEL	0–127	Output level

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.
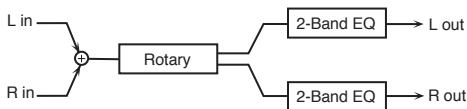
Parameter	Value	Explanation
SPEED (☆)	Rotational speed of the rotating speaker	
	SLOW	Slow
	FAST	Fast
BRAKE	OFF, ON	Switches the rotation of the rotary speaker. When this is turned on, the rotation will gradually stop. When it is turned off, the rotation will gradually resume.
TWEETER SLOW SPEED	0.05–10.00[Hz]	Low-speed rotation speed of the tweeter
TWEETER FAST SPEED	0.05–10.00[Hz]	High-speed rotation speed of the tweeter

Parameter	Value	Explanation
TWEETER TRANS UP	0–127	Adjusts the rate at which the tweeter rotation speeds up when the rotation is switched from SLOW to FAST.
TWEETER TRANS DOWN	0–127	Adjusts the rate at which the tweeter rotation speeds up when the rotation is switched from FAST to SLOW.
TWEETER LEVEL	0–127	Volume of the tweeter
WOOFER SLOW SPEED	0.05–10.00[Hz]	Low-speed rotation speed of the woofer
WOOFER FAST SPEED	0.05–10.00[Hz]	High-speed rotation speed of the woofer
WOOFER TRANS UP	0–127	Adjusts the rate at which the woofer rotation speeds up when the rotation is switched from SLOW to FAST.
WOOFER TRANS DOWN	0–127	Adjusts the rate at which the woofer rotation speeds up when the rotation is switched from FAST to SLOW.
WOOFER LEVEL	0–127	Volume of the woofer
SPREAD	0–10	Sets the rotary speaker stereo image.
HIGH GAIN	-15–+15[dB]	Gain of the high range
LOW GAIN	-15–+15[dB]	Gain of the low range
TYPE	0–127	Output level
LEVEL	STANDARD, STACK, CLEAN	Type of speaker

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
FILTER TYPE	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 FREQ	200–8000[Hz]	Center frequency when using the filter to cut a specific frequency range
PRE DELAY	0.0–100[msec]	Adjusts the delay time from when the direct sound begins until the flanger sound is heard.
RATE (☆)	0.05–10.00[Hz]	Frequency of modulation

Parameter	Value	Explanation
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.
HIGH GAIN	-15–+15[dB]	Gain of the high range
LOW GAIN	-15–+15[dB]	Gain of the low range
BALANCE	D100:0W–D0:100W	Volume balance between the direct sound (D) and the flanger sound (W)
LEVEL	0–127	Output level

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.
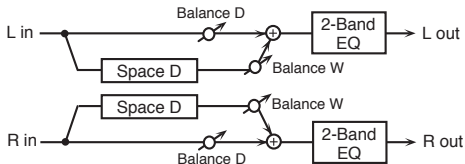
Parameter	Value	Explanation
PRE DELAY	0.0–100[msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.

Parameter	Value	Explanation
RATE (☆)	0.05–10.00[Hz]	Frequency of modulation
DEPTH	0–127	Depth of modulation
PHASE	0–180[deg]	Spatial spread of the sound
HIGH GAIN	-15–+15[dB]	Gain of the high range
LOW GAIN	-15–+15[dB]	Gain of the low range
BALANCE	D100:0W–D0:100W	Volume balance between the direct sound (D) and the chorus sound (W)
LEVEL	0–127	Output level

OVERDRIVE

Creates a soft distortion similar to that produced by vacuum tube amplifiers.
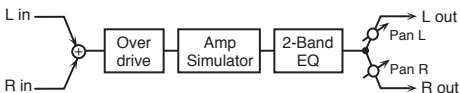
Parameter	Value	Explanation
DRIVE (☆)	0–127	Degree of distortion. Also changes the volume.
AMP TYPE	Type of guitar amp	
	SMALL	Small amp
	BUILT-IN	Single-unit type amp
	2-STACK	Large double stack amp
	3-STACK	Large triple stack amp
HIGH GAIN	-15–+15[dB]	Gain of the high range
LOW GAIN	-15–+15[dB]	Gain of the low range
PAN	L64–63R	Stereo location of the output sound
LEVEL	0–127	Output level

DISTORTION

Produces a more intense distortion than Overdrive.
The parameters are the same as for "OVERDRIVE."
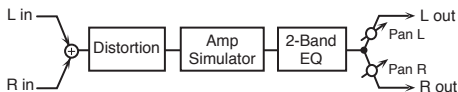
COMPRESSOR

Flattens out high levels and boosts low levels,
smoothing out fluctuations in volume.
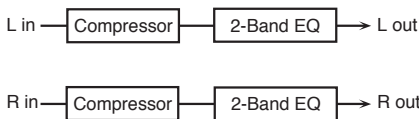
Parameter	Value	Explanation
ATTACK	0–127	Sets the time from when the input exceeds the Threshold until the volume starts being compressed
THRESHOLD (☆)	0–127	Adjusts the volume at which compression begins
POST GAIN	0–+18[dB]	Adjusts the output gain.
HIGH GAIN	-15–+15[dB]	Gain of the high range
LOW GAIN	-15–+15[dB]	Gain of the low range
LEVEL	0–127	Output level

LIMITER

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

L in —→ [Limiter] —→ [2-Band EQ] —→ L out

R in —→ [Limiter] —→ [2-Band EQ] —→ R out
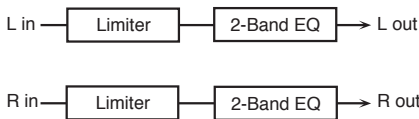
Parameter	Value	Explanation
RELEASE	0–127	Adjusts the time after the signal volume falls below the Threshold Level until compression is no longer applied.
THRESHOLD (☆)	0–127	Adjusts the volume at which compression begins
RATIO	1.5:1, 2:1, 4:1, 100:1	Compression ratio
POST GAIN	0–+18[dB]	Adjusts the output gain.
HIGH GAIN	-15–+15[dB]	Gain of the high range
LOW GAIN	-15–+15[dB]	Gain of the low range
LEVEL	0–127	Output level

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.

```
L in ————————[   Gate   ]————————→ L out


R in ————————[   Gate   ]————————→ R out
```
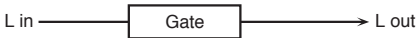
| Parameter	Value	Explanation
THRESHOLD (☆)	0–127	Volume level at which the gate begins to close
MODE	Type of gate	
	GATE	The gate will close when the volume of the original sound decreases, cutting the original sound.
	DUCK (Duking)	The gate will close when the volume of the original sound increases, 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

DELAY

This is a stereo delay.

When Feedback Mode is NORMAL:
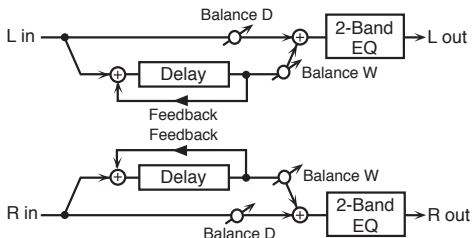
When Feedback Mode is CROSS:
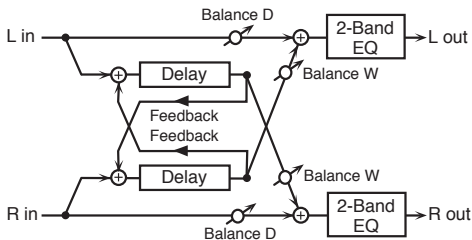
Parameter	Value	Explanation
DELAY LEFT	0–1300[msec]	Adjusts the time until the delay sound is heard.
DELAY RIGHT		
PHASE LEFT	Phase of the left delay sound	
	NORMAL	Non-inverted
	INVERT	Inverted

Parameter	Value	Explanation
PHASE RIGHT	Phase of the right delay sound	
	NORMAL	Non-inverted
	INVERT	Inverted
FEEDBACK MODE	NORMAL, CROSS	Selects the way in which delay sound is fed back into the effect (See the figures.).
FEEDBACK	-98–+98 [%]	Adjusts the amount of the delay sound that's fed back into the effect. Negative (-) settings invert the phase.
HF DAMP	200–8000[Hz], BYPASS	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.
HIGH GAIN	-15–+15[dB]	Gain of the high range
LOW GAIN	-15–+15[dB]	Gain of the low range
BALANCE (☆)	D100:0W–D0:100W	Volume balance between the direct sound (D) and the delay sound (W)
LEVEL	0–127	Output level

LONG DELAY

A delay that provides a long delay time.
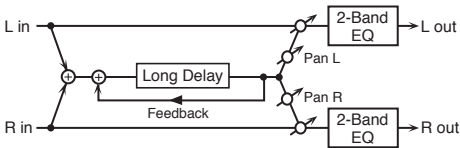
Parameter	Value	Explanation
DELAY TIME	0–2600[msec]	Delay time from when the original sound is heard to when the delay sound is heard
PHASE	NORMAL, INVERSE	Phase of the delay (NORMAL: non-inverted, INVERT: inverted)
FEEDBACK	-98–+98 [%]	Proportion of the delay sound that is to be returned to the input (negative (-) values invert the phase)
HF DAMP	200–8000[Hz], BYPASS	Frequency at which the high-frequency content of the delayed sound will be cut (BYPASS: no cut)
PAN	L64–63R	Panning of the delay sound
HIGH GAIN	-15–+15[dB]	Gain of the high range
LOW GAIN	-15–+15[dB]	Gain of the low range
BALANCE (☆)	D100:0W–D0:100W	Volume balance of the original sound (D) and delay sound (W)
LEVEL	0–127	Output level

3TAP PAN DELAY

Produces three delay sounds; center, left and right.
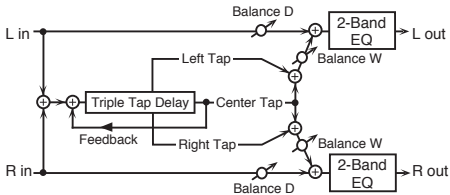
Parameter	Value	Explanation
Delay Left, Right, Center	0–2600[msec]	Adjusts the time from the original sound until the left, right, and center delayed sounds are heard
CENTER FEEDBACK	-98–+98 [%]	Adjusts the amount of the delay sound that's fed back into the effect. Negative (-) settings invert the phase.
HF DAMP	200–8000[Hz], BYPASS	Adjusts the frequency above which sound fed back to the effect is filtered out. If you do not want to filter out any high frequencies, set this parameter to BYPASS.
Left, Right, Center Level	0–127	Volume of each delay
HIGH GAIN	-15–+15[dB]	Gain of the high range
LOW GAIN	-15–+15[dB]	Gain of the low range
BALANCE (☆)	D100:0W–D0:100W	Volume balance between the direct sound (D) and the delay sound (W)
LEVEL	0–127	Output level

TELEPHONE

This effect produces a muffled sound, like that heard through a telephone.

```
L in ─────────▶│   Telephone   │─────────▶ L out

R in ─────────▶│   Telephone   │─────────▶ R out
```
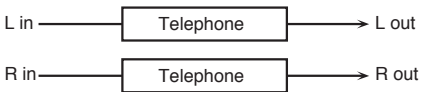
| Parameter	Value	Explanation
VOICE QUALITY (☆)	0–15	Audio quality of the telephone voice
TREBLE	-15–+15[dB]	Bandwidth of the telephone voice
BALANCE	D100:0W– D0:100W	Volume balance between the direct sound (D) and the effect sound (W)
LEVEL	0–127	Output level

PITCH SHIFTER

A stereo pitch shifter.

```
L in ─────●────────────⟋───│ 2-Band EQ │──▶ L out
          │ Pitch Shifter │
          └──────────────┘
          ┌──────────────┐
          │ Pitch Shifter │
R in ─────●────────────⟋───│ 2-Band EQ │──▶ R out
```
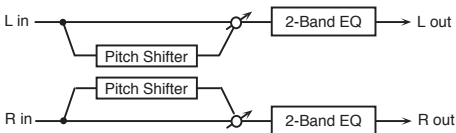
Parameter	Value	Explanation
COARSE (☆)	-24–+12[semi]	Adjusts the pitch of the pitch shifted sound in semitone steps.

Parameter	Value	Explanation
FINE	-100–+100[cent]	Adjusts the pitch of the pitch shifted sound in 2-cent steps.
DELAY TIME	0–1300[msec]	Adjusts the delay time from the direct sound until the pitch shifted sound is heard.
FEEDBACK	-98–+98 [%]	Adjusts the proportion of the pitch shifted sound that is fed back into the effect. Negative (-) settings will invert the phase.
HIGH GAIN	-15–+15[dB]	Gain of the high range
LOW GAIN	-15–+15[dB]	Gain of the low range
BALANCE	D100:0W–D0:100W	Volume balance between the direct sound (D) and the pitch shifted sound (W)
LEVEL	0–127	Output level

GATED REVERB

This is a special type of reverb in which the reverberant sound is cut off before its natural length.
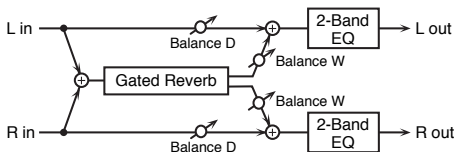
Parameter	Value	Explanation
TYPE	Type of reverb	
	NORMAL	Conventional gated reverb
	REVERSE	Backwards reverb
	SWEEP1	The reverberant sound moves from right to left
	SWEEP2	The reverberant sound moves from left to right
PRE DELAY	0.0–100[msec]	Adjusts the delay time from the direct sound until the reverb sound is heard.
GATE TIME	5–500[msec]	Adjusts the time from when the reverb is heard until it disappears.
HIGH GAIN	-15–+15[dB]	Gain of the high range
LOW GAIN	-15–+15[dB]	Gain of the low range
BALANCE (☆)	D100:0W–D0:100W	Volume balance between the direct sound (D) and the reverb sound (W)
LEVEL	0–127	Output level

(SEND LEVEL)

Parameter	Explanation
MFX2, OUTPUT	Specifies the output level to MFX2 or OUTPUT.
CHORUS	Sets the level of the signal sent to chorus for each part.
REVERB	Sets the level of the signal sent to reverb for each part.

REVERB

Parameter	Explanation
REVERB TYPE	Switches reverb on/off, and selects the type of reverb to use.
LEVEL	Specifies the volume of the sound that has passed through reverb.

REVERB

Parameter	Value	Explanation
TYPE	Type of reverb/delay	
	ROOM1	Short reverb with high density
	ROOM2	Short reverb with low density
	STAGE1	Reverb with greater late reverberation
	STAGE2	Reverb with strong early reflections
	HALL1	Very clear-sounding reverb
	HALL2	Rich reverb
	DELAY	Conventional delay effect
	PAN-DELAY	Delay effect with echoes that pan left and right

Parameter	Value	Explanation
TIME	0–127	Time length of reverberation (Type: ROOM1 – HALL2) Delay time (Type: DELAY, PAN-DELAY)
HF DAMP	200–8000[Hz], BYPASS	Adjusts the frequency above which the high-frequency content of the reverb sound will be cut, or "damped." If you do not want to cut the high frequencies, set this parameter to BYPASS.
DELAY FEEDBACK	0–127	Adjusts the amount of delay feedback when the Type setting is DELAY or PAN-DELAY. Amount of delay returned to the input (this setting is valid only if Type is DELAY or PAN-DELAY)

SRV ROOM, SRV HALL, SRV PLATE

Parameter	Value	Explanation
PRE DELAY	0.0–100.0[msec]	Adjusts the delay time from the direct sound until the reverb sound is heard.
TIME	0–127	Time length of reverberation
SIZE	1–8	Size of the simulated room or hall

Parameter	Value	Explanation
HIGH CUT	160–12500[Hz], BYPASS	Adjusts the frequency above which the high-frequency content of the reverb will be reduced. If you do not want to reduce the high frequencies, set this parameter to BYPASS.
DENSITY	0–127	Density of reverb
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 FREQ	50–4000[Hz]	Adjusts the frequency below which the low-frequency content of the reverb sound will be reduced, or "damped."
LF DAMP GAIN	-36–0[dB]	Adjusts the amount of damping applied to the frequency range selected with LF Damp. With a setting of "0," there will be no reduction of the reverb's low-frequency content.
HF DAMP FREQ	4000–12500[Hz]	Adjusts the frequency above which the high-frequency content of the reverb sound will be reduced, or "damped."

Parameter	Value	Explanation
HF DAMP GAIN	-36–0[dB]	Adjusts the amount of damping applied to the frequency range selected with HF Damp. With a setting of "0," there will be no reduction of the reverb's high-frequency content.

GM2 REVERB

Parameter	Value	Explanation
CHARACTER	Type of reverb	
	0–5	Reverb
	6, 7	Delay
PRE-LPF	0–7	Cuts the high frequency range of the sound coming into the reverb.
LEVEL	0–127	Output level of reverberation
TIME	0–127	Time length of reverberation
DELAY FEEDBACK	0–127	Adjusts the amount of the delay sound that is fed back into the effect when the CHARACTER setting is 6 or 7.

CHORUS

Parameter	Explanation	
CHORUS TYPE	Switches chorus on/off, and selects the type of chorus to use.	
LEVEL	Specifies the volume of the sound that has passed through chorus.	
OUTPUT	MAIN	Output to the OUTPUT jack.
	REV	Output to reverb.
	MAIN+REV	Output both to the OUTPUT jack and to reverb.

CHORUS

Parameter	Value	Explanation
PRE DELAY	0.0–100.0[msec]	Adjusts the delay time from the direct sound until the chorus sound is heard.
RATE	0.05–10.00Hz	Frequency of modulation
DEPTH	0–127	Depth of modulation
PHASE	0–180[deg]	Spatial spread of the sound
FEEDBACK	0–127	Adjusts the amount of the chorus sound that is fed back into the effect.

Parameter	Value	Explanation
FILTER TYPE	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 FREQ	200–8000[Hz]	Basic frequency of the filter

DELAY

Parameter	Value	Explanation
Delay Left, Right, Center	0–1000ms	Adjusts the delay time from the direct sound until the delay sound is heard.
CENTER 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	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.
Left, Right, Center Level	0–127	Volume of each delay sound

GM2 CHORUS

Parameter	Value	Explanation
PRE-LPF	0–7	Cuts the high frequency range of the sound coming into the chorus.
LEVEL	0–127	Volume of the chorus sound
FEEDBACK	0–127	Adjusts the amount of the chorus sound that is fed back into the effect.
RATE	0–127	Frequency of modulation
DEPTH	0–127	Depth of modulation
SEND LEVEL TO REV	0–127	Adjusts the amount of chorus sound that will be sent to the reverb.