Using BOSS TONE STUDIO for KATANA BASS HEAD

This document explains basic operation of BOSS TONE STUDIO for KATANA BASS HEAD (subsequently referred to as "TONE STUDIO").

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* The names of the respective companies and products are used in this guide to appropriately explain about the various sounds that are emulated with DSP technology.

Getting ready to use TONE STUDIO

Installing the USB driver

Before you use TONE STUDIO, the appropriate USB driver for the product you're using must be installed on your computer.

1. **From the product support page, download the KATANA Driver.**

   To obtain the latest USB driver, access the following URL, and download and install the appropriate driver for the product you're using.

   http://www.boss.info/support/

2. **Double-click the downloaded KATANA Driver.**

   Installation begins.

   Proceed with the installation as directed by the installation screens.

   When the screen indicates "Installation has been completed". click the [Close] button.

   The KATANA Driver has been installed on your computer.

Installing TONE STUDIO

MEMO

Before you install TONE STUDIO, the USB driver must be installed in your computer as described in "Installing the USB driver" (p. 1).

Windows users

1. **Unpack the Zip file.**
2. **Double-click "BOSS TONE STUDIO for KATANA BASS HEAD Installer.exe".**

   Installation begins.
3. **Proceed with installation as directed by the install screens.**
4. **When the screen indicates "Completing the BOSS TONE STUDIO for KATANA BASS HEAD Setup Wizard", click the [Finish] button.**

Mac users

1. **Unpack the Zip file.**
2. **Double-click "BOSS TONE STUDIO for KATANA BASS HEAD Installer.pkg".**

   Installation begins.
3. **Proceed with installation as directed by the install screens.**
4. **When the screen indicates "The installation was successful. The software was installed.", click the [Close] button.**

Starting TONE STUDIO

1. **Use a USB cable to connect the KATANA BASS HEAD to your computer, and then turn on the power of the KATANA BASS HEAD.**

MEMO

You can edit livesets and download livesets from BOSS TONE EXCHANGE (p. 12) even if the KATANA BASS HEAD is not connected to your computer via a USB cable.

However, you can't save the results of tone settings you edit. To save this data, the unit must be connected to your computer.

2. **In the [Start] menu, choose [All apps] ➡ [BOSS TONE STUDIO for KATANA BASS HEAD] ➡ [BOSS TONE STUDIO for KATANA BASS HEAD].**

   The first time you start up, the dialog box "Choose a device connect with." appears.

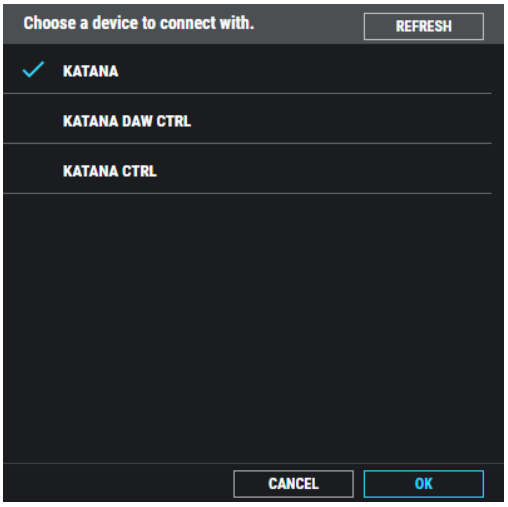
MEMO

On the second and subsequent startups, the device is selected automatically.

macOS users

From the Finder, in the application/BOSS/KATANA BASS HEAD folder, double-click [BOSS TONE STUDIO for KATANA BASS HEAD (.app)].

3. **Choose "KATANA", and click the [OK] button.**



TONE STUDIO starts.

MEMO

Since data will be loaded from the KATANA BASS HEAD it may take some time until you can use TONE STUDIO.

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Editor basic screen

1 Tone Setting select area

2 Function select area

3 [CLEAR] / [WRITE] button

If you click the [CLEAR] button, all settings are initialized to the KATANA BASS HEAD's original settings. By clicking the [WRITE] button you can save the edited settings in the tone setting select area (p. 3).

4 Amp setting editing area

5 Effect editing area

Here you can specify the effects that you want to assign to the [COMP/LIMITER], [DRIVE], and [FX] knobs, and to the expression pedal.

Editing a tone setting

1. **At the top of the TONE STUDIO screen, click the [EDITOR] button.**
2. **Click the tone setting that you want to edit.**

3. **To edit the settings, use the mouse to operate the knobs and buttons in the screen.**

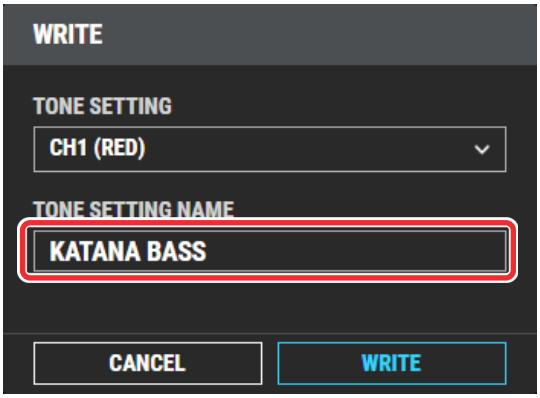
Saving edited settings (WRITE)

Here's how to save the edited settings.

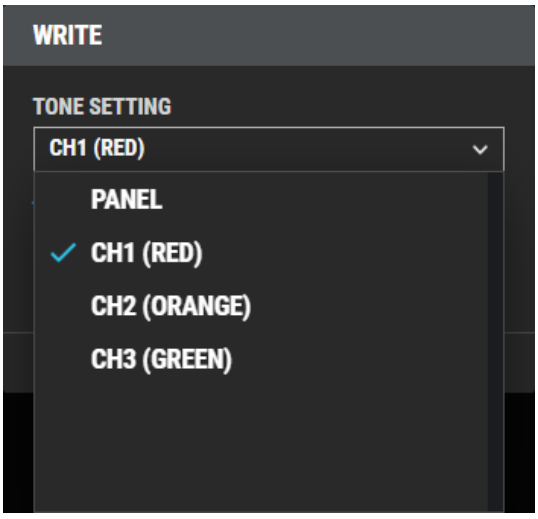
1. **In the upper right of the TONE STUDIO screen, click the [WRITE] button.**

The "WRITE" dialog box appears.

2. **If you want to change the name of the tone setting, click the TONE SETTING NAME field. You can use your computer keyboard to enter a tone setting name.**



3. **Select the write-destination.**



NOTE

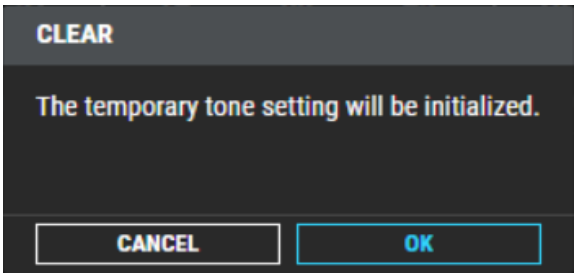
When you save, the tone setting of the selected number is overwritten; the original settings cannot be recovered. Select a tone setting that you don't mind overwriting.

4. Click [WRITE].

The settings of the new tone setting are saved in the specified destination.

MEMO

If you want to discard the settings, click the [CLEAR] button located in the upper right of the screen.



Effects assigned to each knob when the unit is shipped

Following effects are assigned to each knob when the unit is shipped.

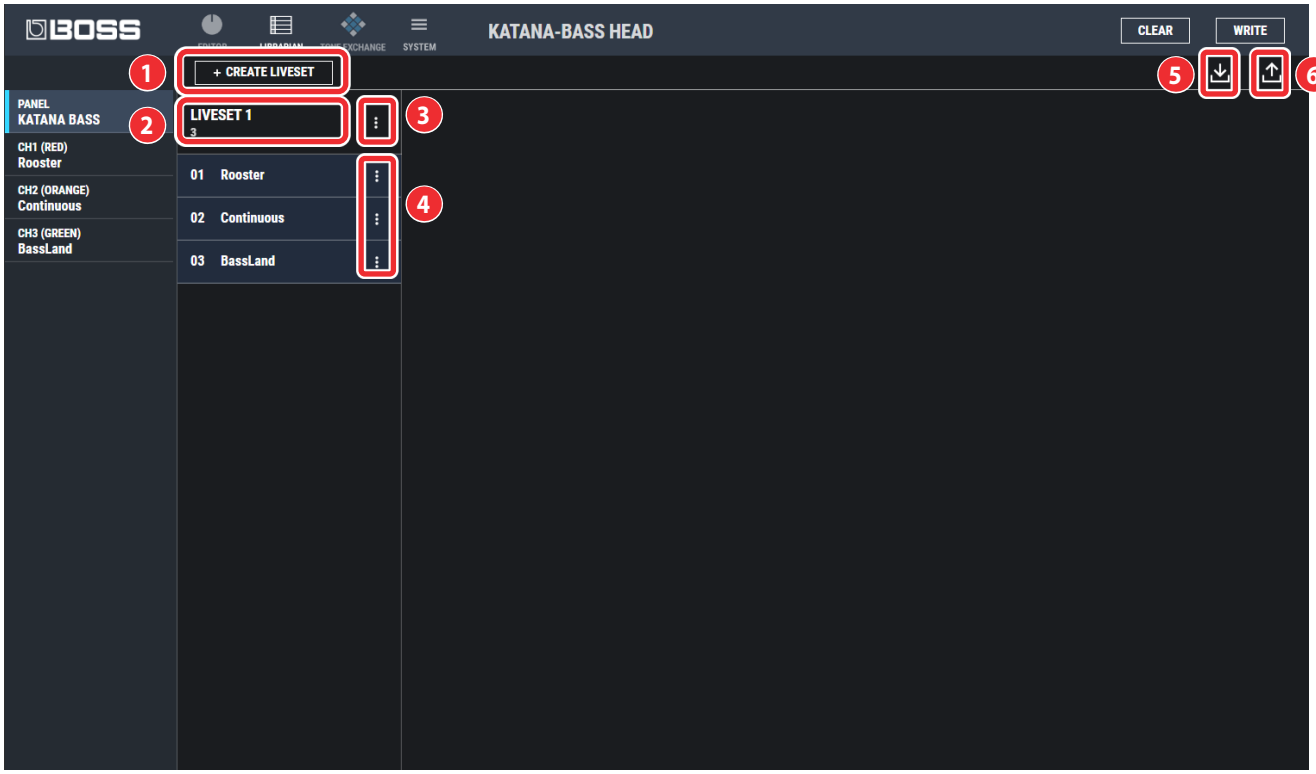
PANEL	Color of the button	MODE	TYPE
COMP/LIMITER	Green	COMP	LIGHT
	Red	COMP	BOSS COMP
	Orange	LIMITER	BOSS LIMITER
DRIVE	Green	–	BASS OD
	Red	–	BASS DS
	Orange	–	BASS FUZZ
FX	Green	FX	CHORUS
	Red	FX	T. WAH
	Orange	FX	HEAVY OCTAVE

CH1	Color of the button	MODE	TYPE
COMP/LIMITER	Green	COMP	D-COMP
	Red	COMP	BOSS COMP
	Orange	LIMITER	VTG RACK U
DRIVE	Green	–	BASS MT
	Red	–	BASS DS
	Orange	–	BASS FUZZ
FX	Green	FX	CHORUS
	Red	FX	T. WAH
	Orange	FX	HEAVY OCTAVE

CH2	Color of the button	MODE	TYPE
COMP/LIMITER	Green	COMP	LIGHT
	Red	COMP	BOSS COMP
	Orange	LIMITER	VTG RACK U
DRIVE	Green	–	GUV DS
	Red	–	BASS DS
	Orange	–	BASS FUZZ
FX	Green	FX	CHORUS
	Red	FX	T. WAH
	Orange	FX	HEAVY OCTAVE

CH3	Color of the button	MODE	TYPE
COMP/LIMITER	Green	COMP	LIGHT
	Red	COMP	BOSS COMP
	Orange	LIMITER	VTG RACK U
DRIVE	Green	–	BASS OD
	Red	–	BASS DS
	Orange	–	BASS FUZZ
FX	Green	FX	CHORUS
	Red	FX	T. WAH
	Orange	FX	HEAVY OCTAVE

LIBRARIAN basic screen



1 [CREATE LIVESET] button

Press this button to create a new empty liveset.

2 Liveset name

Shows the name of the liveset and the number of tone settings.

3 Liveset name edit button

Click this to edit the name of the liveset. You can click the trash can symbol to delete the liveset.

4 TONE SETTING name edit button

Click this to edit the name of the tone setting. You can click the trash can symbol to delete the tone setting.

5 [Import] button

This lets you import all of the KATANA BASS HEAD unit's tone settings into the LIBRARIAN, or import a LIBRARIAN file from your computer into the LIBRARIAN.

6 [Export] button

This lets you export a liveset to the KATANA BASS HEAD unit, or export a liveset and save it on your computer.

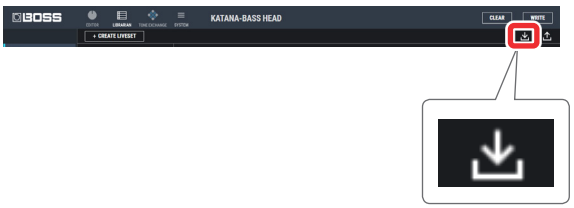
Importing all the tone settings into the LIBRARIAN (IMPORT FROM KATANA BASS HEAD)

Here's how to import all of the KATANA BASS HEAD's tone settings into LIBRARIAN.

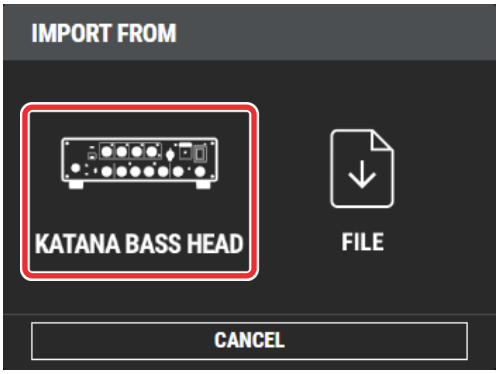
All tone settings are saved as a liveset.

1. In the TONE STUDIO screen, click the [LIBRARIAN] button.

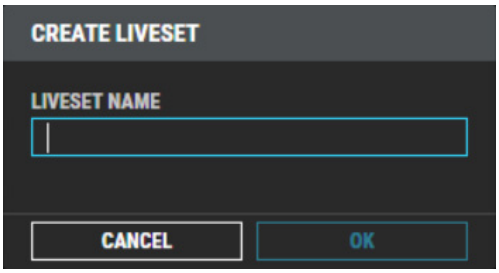
2. At the top of the TONE STUDIO screen, click the [Import] button.



3. Click the [KATANA BASS HEAD] button.



The CREATE LIVESET screen appears.



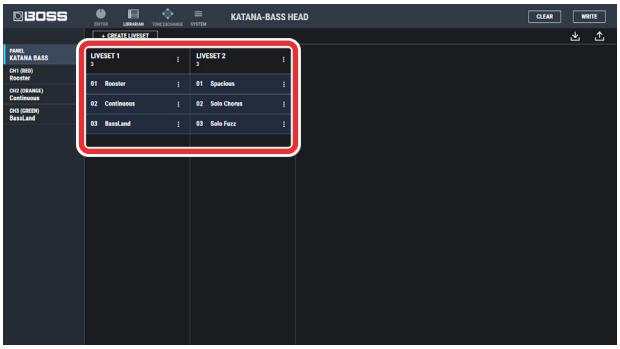
4. Enter the liveset name, and click the [OK] button.

Import begins. If you decide to cancel during the operation, click the [CANCEL] button.

It will take some time to import all of the KATANA BASS HEAD's tone settings. When import is finished, the message "Completed." appears.

5. Click the [OK] button.

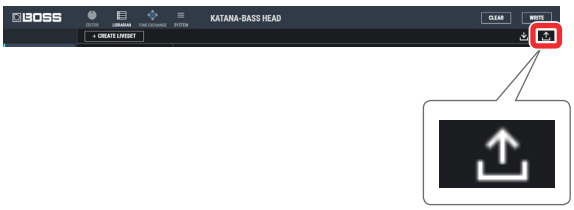
The tone settings are saved as a liveset in the LIBRARIAN.



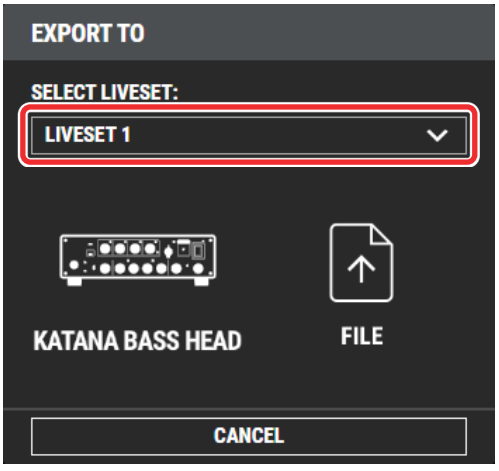
Exporting a LIBRARIAN liveset to the KATANA BASS HEAD (EXPORT TO KATANA BASS HEAD)

Here's how a liveset that you saved can be restored to the KATANA BASS HEAD.

1. At the top of the TONE STUDIO screen, click the [Export] button.



2. From SELECT LIVESET, select the liveset that you want to export.



3. Click the [KATANA BASS HEAD] button.

Export begins. If you decide to cancel during the operation, click the [CANCEL] button.

When export is finished, the message "Completed." appears.

4. Click the [OK] button.

The selected liveset is written back into the KATANA BASS HEAD.

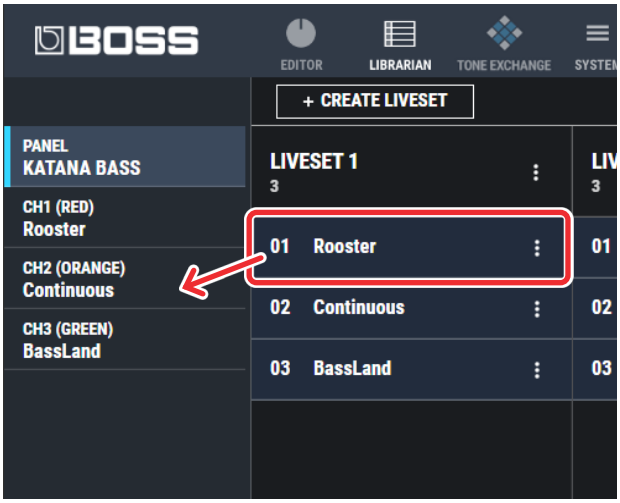
Restoring a tone setting to the KATANA BASS HEAD

Here's how to select a tone setting from a liveset that you saved, and restore it back to the KATANA BASS HEAD.

1. **Drag the tone setting that you want to restore and drop it onto the desired tone setting number of the KATANA BASS HEAD.**

NOTE

When you drop a tone setting, it overwrites the tone setting of the selected number; the original settings cannot be recovered. Select a user tone setting that you don't mind overwriting.



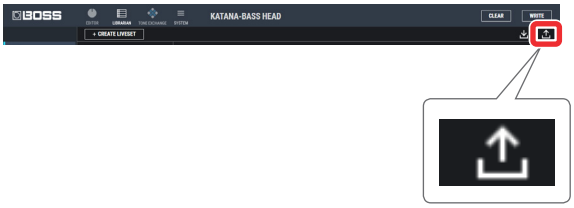
MEMO

You can also select multiple tone settings as described in "Selecting multiple tone settings" (p. 9).

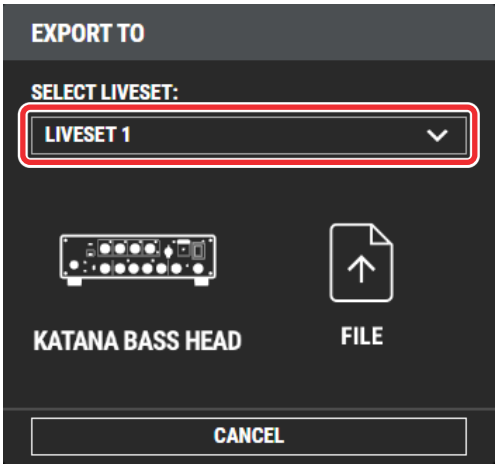
Saving a liveset to a computer (EXPORT TO FILE)

A liveset that you backed up can be exported to your computer.

1. **At the top of the TONE STUDIO screen, click the [Export] button.**



2. **From SELECT LIVESET, select the liveset that you want to export.**



3. **Click the [FILE] button.**

The "Save As" dialog box appears.

4. **Enter a name and save-destination, and click the [Save] button.**

A liveset file (.tsl) is created at the save-destination.

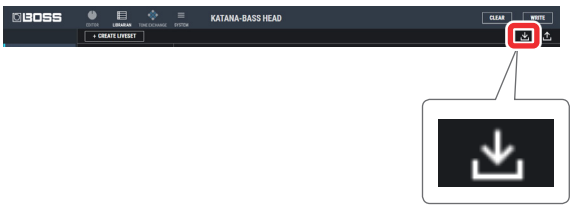
Ways to use an exported liveset

- Use a USB flash drive to copy the liveset to a different device.
- Sent the liveset via email to another KATANA BASS HEAD user.

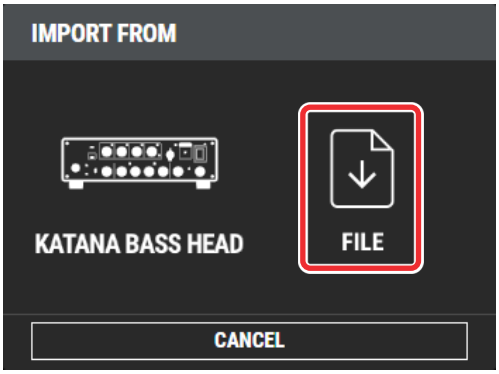
Importing a liveset from a computer into the LIBRARIAN (IMPORT FROM FILE)

A liveset that you exported to a computer can be imported into a TONE STUDIO library (Import).

1. At the top of the TONE STUDIO screen, click the [Import] button.



2. Click the [FILE] button.



The "Open" dialog box appears.

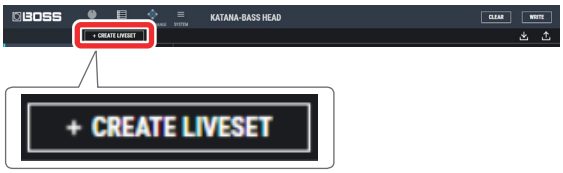
3. Select the liveset file (extension: .tsl) that you want to import into the library, and click the [Open] button.

The liveset is imported into the LIBRARIAN.

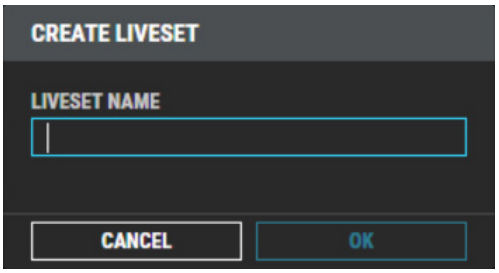
Creating an original liveset

You can collect your favorite tone settings to create an original liveset.

1. At the top of the TONE STUDIO screen, click the [CREATE LIVESET] button.

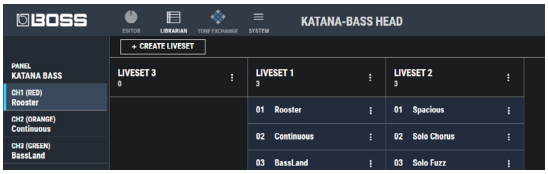


2. Input a name for the liveset.

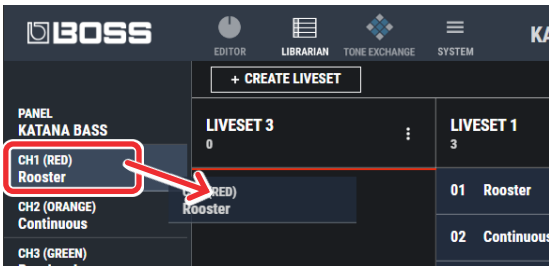


3. Click the [OK] button.

An empty liveset containing no tone settings is created.



4. From the tone setting list at the left of the TONE STUDIO screen, drag and drop your favorite tone settings into the new liveset.



The selected tone settings are registered in the new liveset.

MEMO

- A maximum of 15 tone settings can be registered in one liveset. If inserting tone settings would cause the liveset to exceed 15 tone settings, the tone settings are not inserted.
- Tone settings that are registered in another liveset can also be dragged and dropped into the new liveset.
- You can drag and drop the tone settings in the liveset to change their order.
- TONE STUDIO lets you create up to 50 livesets. If you want to create and save more than 50 livesets, use the EXPORT TO FILE function to save existing livesets on your computer.

Copying tone settings

Here's how to copy a tone setting to another liveset or to a KATANA BASS HEAD tone setting.

1. Click the tone setting that you want to copy.

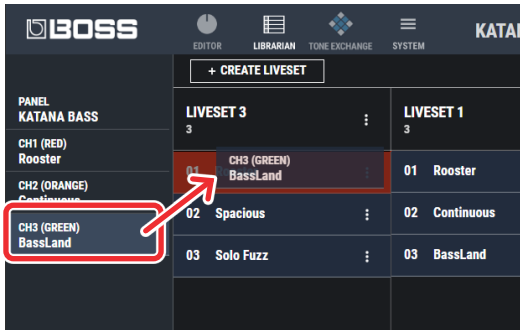
MEMO

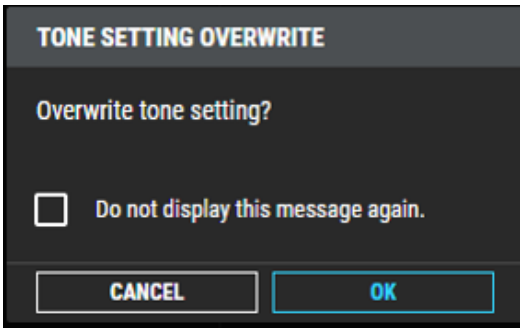
You can also select and copy multiple tone settings as described in "Selecting multiple tone settings" (p. 9).

2. Drag and drop the selected tone settings onto the desired copy-destination.

NOTE

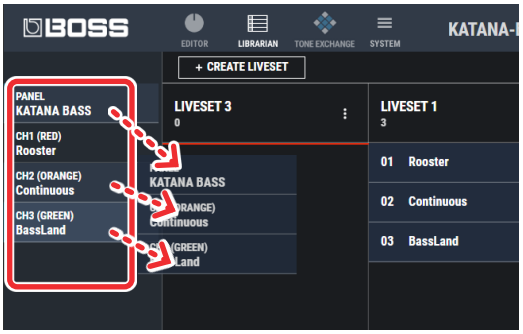
When you drop the tone settings, they are overwritten onto the tone settings of the selected red area, and the original settings cannot be recovered. Select tone settings that you don't mind overwriting.





MEMO

- If you select non-consecutive tone settings and copy them, they are copied as successive tone settings.



- A maximum of 15 tone settings can be registered in one liveset. If inserting tone settings would cause the liveset to exceed 15 tone settings, the tone settings are not inserted.
- Tone settings that are registered in a liveset can be copied to your own liveset or to a new liveset.

Selecting multiple tone settings

By using your computer's mouse and keyboard together, you can select multiple tone settings.

Selecting a range of tone settings

Here's how to select a range of consecutive tone settings.

1. Click the first tone setting that you want to select.

2. While holding down your computer keyboard's Shift key, click the last tone setting that you want to select.

The first through last tone settings that you click are selected.

Selecting tone settings individually

Here's how to select just the individual tone settings that you click.

1. While holding down your computer keyboard's Ctrl key, click a tone setting that you want to select.

The tone setting you click is selected. The selected tone setting is highlighted.

macOS users

While holding down your computer keyboard's command key, click a tone setting that you want to select.

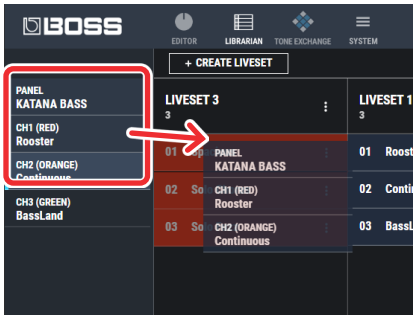
2. If you want to select other tone settings, repeat step 1.

If you hold down the Ctrl key and click a selected (highlighted) tone setting once again, the selection is cleared (that tone setting is no longer highlighted).

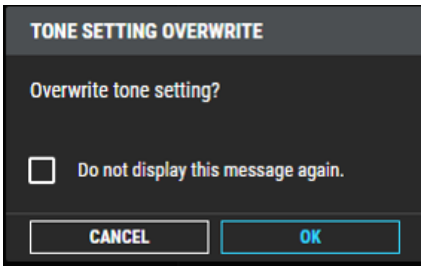
The difference between operations when selecting and copying multiple tone settings

When you drag and drop the selected tone settings, the copy result will differ depending on your mouse operation.

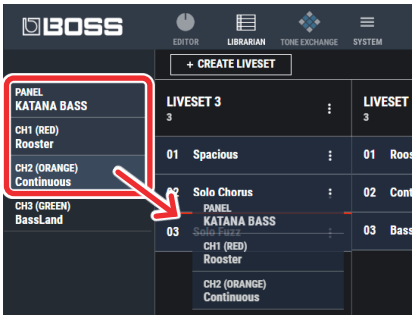
Drag and drop when a red area is shown at the copy-destination (overwrite copy)



The tone settings are copied to the area indicated by the red color.



Drag and drop between copy-destination tone settings (insert)



The tone settings are inserted at the position of the red line. Subsequent tone settings are moved backward.

Moving tone settings

Here's how to move a tone setting to another liveset or to a KATANA BASS HEAD tone setting. When you move a tone setting, it disappears from its previous location.

1. Click the tone setting that you want to move.

MEMO

You can also select and move multiple tone settings as described in "Selecting multiple tone settings" (p. 9).

2. While holding down your computer keyboard's Alt key, drag and drop the selected tone setting to the desired copy-destination.

macOS users

While holding down your computer keyboard's option key, drag and drop.

Deleting tone settings

Here's how to delete an unwanted tone setting.

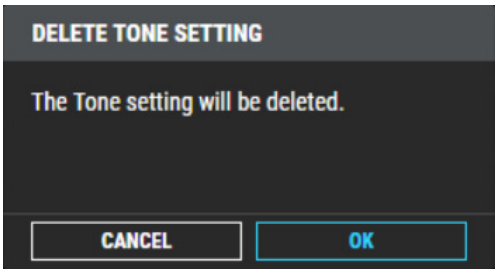
1. Click the tone setting that you want to delete.

MEMO

You can also select and delete multiple tone settings as described in "Selecting multiple tone settings" (p. 9).

2. Press your computer keyboard's Delete key.

The "DELETE TONE SETTING" message appears.



NOTE

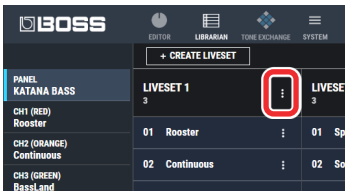
Deleted tone settings cannot be recovered. If you decide not to delete, click the [CANCEL] button.

3. Click the [OK] button.

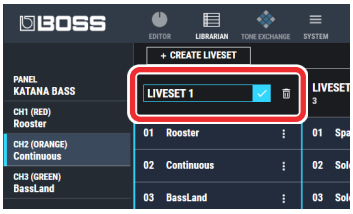
The selected tone settings are deleted.

Editing a liveset name

1. **Click the [⋮] button located at the right of the name of the liveset that you want to edit.**



2. **Edit the name, and then click the [✓] button.**



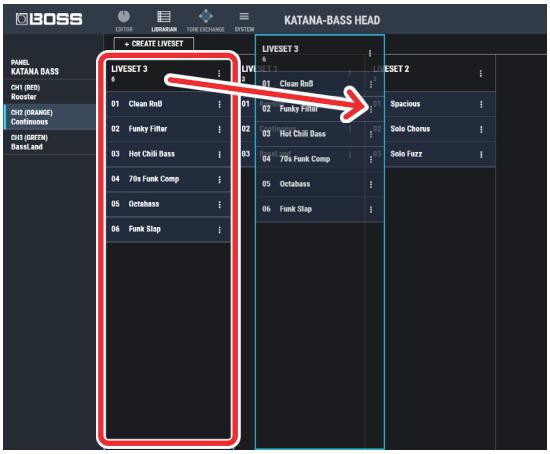
Rearranging livesets

Here's how to rearrange the livesets that are displayed.

1. **Click the liveset that you want to rearrange.**

2. **Drag and drop the liveset name.**

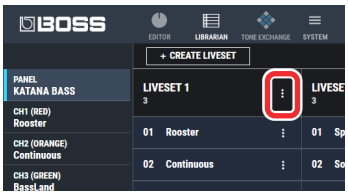
   The liveset moves to the position indicated by the red line.



Deleting a liveset

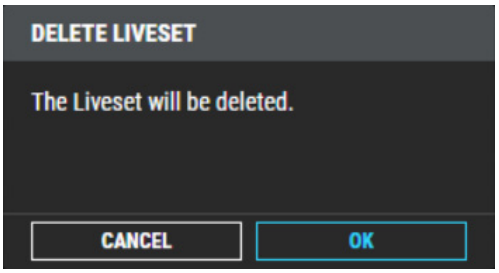
Here's how to delete a liveset that you no longer need.

1. **Click the [⋮] button located at the right of the name of the liveset that you want to delete.**



2. **Click the [🗑] button.**

   The "Delete liveset" message appears.



NOTE

The deleted liveset cannot be recovered. If you decide to cancel without deleting, click the [CANCEL] button.

3. **Click the [OK] button.**

   The selected liveset is deleted.

What you can do with BOSS TONE EXCHANGE

BOSS TONE EXCHANGE (hereafter "TONE EXCHANGE") is a service that lets you share the livesets you've created using TONE STUDIO with users around the world.

Here's what you can do with TONE EXCHANGE.

- Upload and share your livesets on TONE EXCHANGE.
- Download your favorite livesets from those created by BOSS users around the world.

MEMO

You must sign in with your Roland account to use TONE EXCHANGE.

To make use of all the TONE EXCHANGE functions, access the TONE EXCHANGE website as shown below.

https://bosstoneexchange.com/

When you access TONE EXCHANGE from the TONE STUDIO app, you can only download livesets currently offered by BOSS.

We plan to update the app to let you upload and download livesets created by users.

SYSTEM

1. **At the top of the TONE STUDIO screen, click the [SYSTEM] button.**

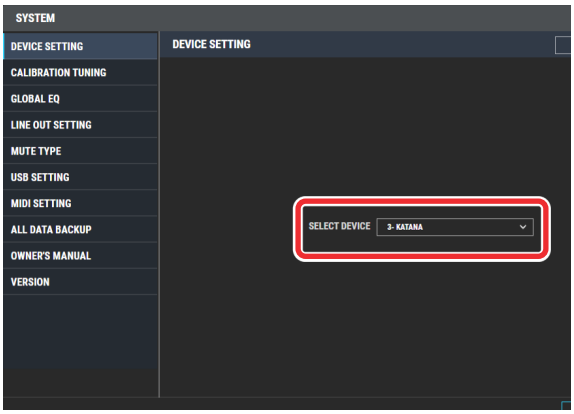
The SYSTEM screen appears.

Selecting the device controlled by TONE STUDIO

Here's how to select the device controlled by TONE STUDIO.

1. **At the top of the TONE STUDIO screen, click the [SYSTEM] button.**
2. **Click the [DEVICE SETTING] button.**

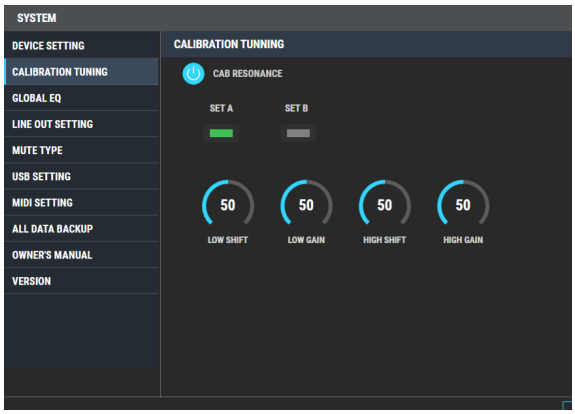
   The "Device" screen appears.
3. **Click SELECT DEVICE, and from the list choose [KATANA].**



CALIBRATION TUNING

This feature calibrates the sound of the amp to improve the sound coming from external speakers.

There are two types of settings, SET A (green) and SET B (orange).



Adjusting the tone of the entire KATANA BASS HEAD (GLOBAL EQ)

You can place the global equalizer either before (INPUT) or after (OUTPUT) the effect chain.

1. **At the top of the TONE STUDIO screen, click the [SYSTEM] button.**
2. **Click [GLOBAL EQ].**

   The GLOBAL EQ screen appears.

3. **Make settings for the global equalizer.**

   You can make one type of equalizer settings.

4. **Click the [CLOSE] button.**

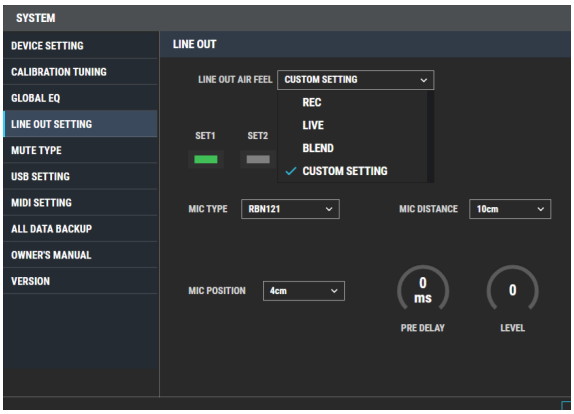
   The settings are completed.

LINE OUT SETTING

LINE OUT AIR FEEL

Specifies the sound of the LINE OUT, PHONES/REC OUT, and the USB EFFECT OUT.

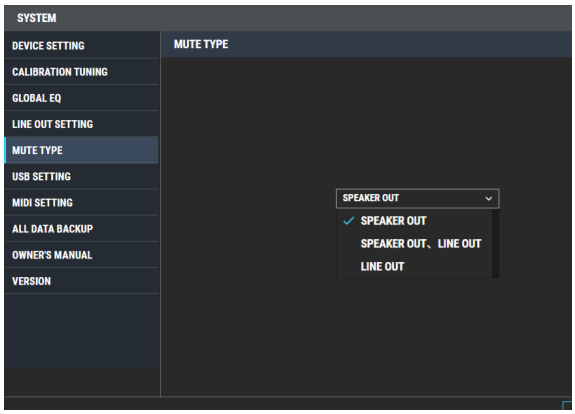
Value	Explanation
REC	A distantly-miked sound for recording.
LIVE	A close-miked sound for live.
BLEND	A sound providing a good blend of closed-miked and distantly-miked sound that can be broadly used for live or recording.
CUSTOM SETTING	Lets you configure the mic type and position.



MUTE TYPE

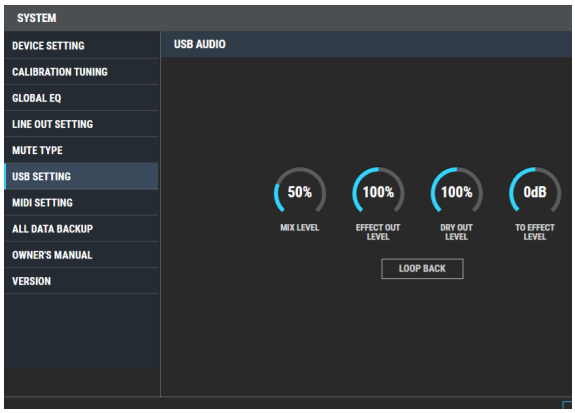
This can be turned on/off by using the [MUTE] button on this unit.

* When the [LINE OUT] switch on the rear panel of this unit is set to "DIRECT", muting is not activated even when "SPEAKER OUT" or "SPEAKER OUT, LINE OUT" are selected.



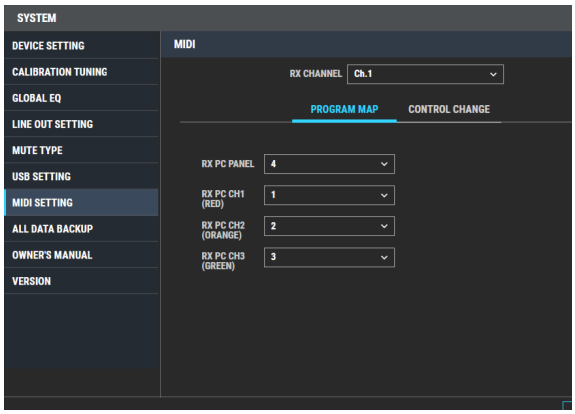
USB SETTING

Here you can edit the parameters used when connecting your computer to the KATANA BASS HEAD unit.



MIDI SETTING

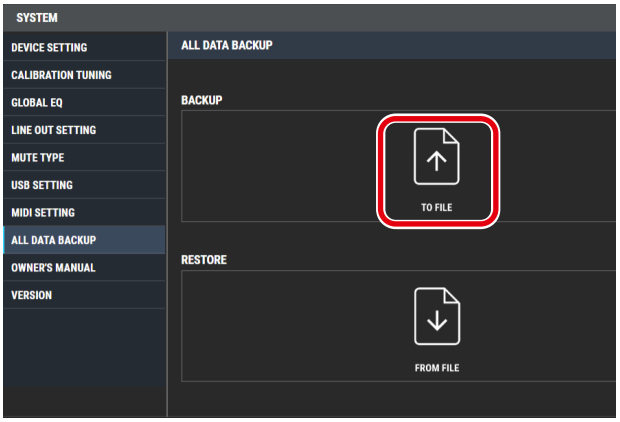
Here you can specify how the KATANA BASS HEAD is connected to an external MIDI device.



Saving all KATANA BASS HEAD settings to the computer (ALL DATA BACKUP)

Here's how all data saved in the KATANA BASS HEAD can be backed-up to the computer.

1. **At the top of the TONE STUDIO screen, click the [SYSTEM] button.**
2. **Click [ALL DATA BACKUP].**
   The ALL DATA BACKUP screen appears.
3. **Click the [TO FILE] button.**



The "Save As" dialog box appears.

4. **Input a name and save-destination, and click the [Save] button.**
   Export begins.
   It will take some time for all data to be exported.
   When the operation is finished, the message "Completed." appears.
5. **Click the [OK] button.**
   An all data file (.alb file) is created in the save-destination.

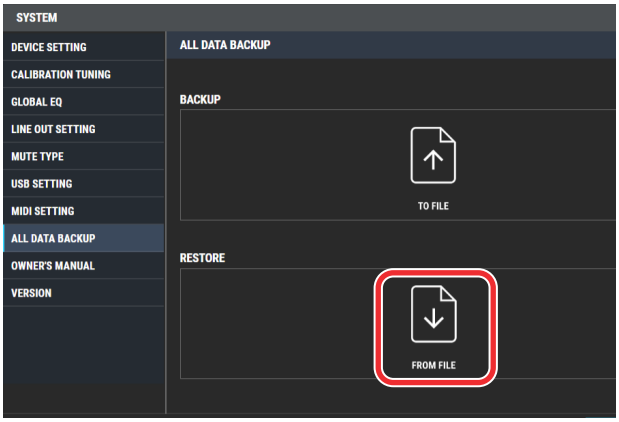
Restoring an all data file from the computer to the KATANA BASS HEAD (ALL DATA RESTORE)

Here's how an all data file previously saved on the computer can be restored to the KATANA BASS HEAD.

NOTE

When you restore, all data is overwritten, and cannot be returned to its previous settings.

1. **At the top of the TONE STUDIO screen, click the [SYSTEM] button.**
2. **Click [ALL DATA BACKUP].**
   The ALL DATA BACKUP screen appears.
3. **Click the [FROM FILE] button.**



The "Open" dialog box appears.

4. **Select the all data file (extension: .alb) that you want to restore, and click the [Open] button.**
   Import begins.
   Since all data is being imported, this will take some time. When the operation is finished, the message "Completed." appears.
5. **Click the [OK] button.**
   All data is restored to the KATANA BASS HEAD.

OWNER'S MANUAL

Here you can view the Owner's Manual for the KATANA BASS HEAD, and view the pages of this manual.

* An Internet connection is required to use this feature.

VERSION

Here you can view the software version and license information for BOSS TONE STUDIO for KATANA BASS HEAD.

Effect parameter list

COMP

This is an effect that produces a long sustain by evening out the volume level of the input signal. You can also use it as a limiter to suppress only the sound peaks and prevent distortion.

COMP type

Type	Explanation
BOSS COMP	This models a BOSS CS-3.
HI-BAND	This is a compressor that adds an even stronger effect in the high end.
LIGHT	This is a compressor with a light effect.
D-COMP	This models a MXR DynaComp.
ORANGE	This is modeled on the sound of the Dan Armstrong ORANGE SQUEEZER.
FAT	When applied heavily, this compressor effect provides a fat tone with a boosted midrange.
MILD	When applied heavily, this compressor effect produces a sweet tone with the high end cut.

COMP parameters

Parameter	Value	Explanation
SUSTAIN	0–100	Adjusts the range (time) over which low-level signals are boosted. Larger values will result in longer sustain.
ATTACK	0–100	Adjusts the strength of the picking attack when the strings are played. Higher values result in a sharper attack, creating a more clearly defined sound.
TONE	-50–+50	Adjusts the tone.
LEVEL	0–100	Adjusts the volume.

LIMITER

The limiter attenuates loud input levels to prevent distortion.

LIMITER type

Type	Explanation
BOSS LIMITER	This is an original BOSS limiter.
RACK 160D	This models a dbx 160X.
VTG RACK U	This models a UREI 1178.

LIMITER parameters

Parameter	Value	Explanation
ATTACK	0–100	Adjusts the strength of the picking attack when the strings are played. Higher values result in a sharper attack, creating a more clearly defined sound.
THRESHOLD	0–100	Adjusts this as appropriate for the input signal from your bass guitar. When the input signal level exceeds this threshold level, limiting will be applied.
RATIO	1:1–INF:1	This selects the compression ratio used with signals in excess of the threshold level.
RELEASE	0–100	Adjusts the release time.
LEVEL	0–100	Adjusts the volume.

DRIVE

Various distortion effects can be selected.

DRIVE type

Type	Explanation
BLUES OD	This is a crunch sound of the BOSS BD-2. This produces distortion that faithfully reproduces the nuances of picking.
NATURAL	This is an overdrive sound that provides distortion with a natural feeling.
GUV DS	This models a Marshall GUV'NOR.
METAL ZONE	This models the sound of the BOSS MT-2. It produces a wide range of metal sounds, from old style to slash metal.
MUFF FUZZ	This models an Electro-Harmonix Big Muff π.
BOOSTER	This not only functions as a booster, but also produces a clean tone that has punch even when used alone.
BASS OD	Overdrive tuned especially for use with bass guitars.
BASS DS	Distortion tuned especially for use with bass guitars.
BASS MT	Wild, radical distortion sound.
BASS FUZZ	Fuzz tuned especially for use with bass guitars.
HIBAND DRV	With this effect, distortion is applied only to the high frequency sounds, and not to the sounds in the low frequency range.
BASS DRV	This models a TECH21 SANSAMP BASS DRIVER DI.
BASS DI	This models a MXR Bass D.I.+.

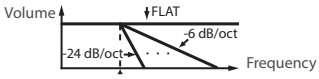
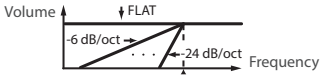
DRIVE parameters

Parameter	Value	Explanation
DRIVE	0–120	Adjusts the depth of distortion.
BOTTOM	0–100	Adjusts the tone for the low frequency range. Turning this to the left (counterclockwise) produces a sound with the low end cut; turning it to the right boosts the low end in the sound.
TONE	-50–+50	Adjusts the tone.
EFFECT LEVEL	0–100	Adjusts the volume of the effect sound.
DIRECT MIX	0–100	Adjusts the volume of the direct sound.

BLEND

This sets how the dry and wet sounds are blended together.

BLEND parameters

Parameter	Value	Explanation
DRY DRIVE	OFF, ON	Switches the DRIVE effect on/off that's applied to the dry sound.
DRY EQ	OFF, ON	Switches the EQ on/off (the BASS, LOW MID, HIGH MID and TREBLE on the top panel of the KATANA BASS HEAD) that's applied to the dry sound.
DRY LPF TYPE	FLAT, -6 dB/oct–-24 dB/oct	Sets the slope type for the LPF that's applied to the dry sound. 
DRY LPF FREQ	20.0 Hz–10.0 kHz	Sets the cutoff frequency for the LPF that's applied to the dry sound.
WET HPF TYPE	FLAT, -6 dB/oct–-24 dB/oct	Sets the slope type for the HPF that's applied to the wet sound. 
WET HPF FREQ	20.0 Hz–10.0 kHz	Sets the cutoff frequency for the HPF that's applied to the wet sound.

EQUALIZER

This adjusts the tone.

You can save this setting for the green, red and orange-colored settings on the panel respectively.

LOW MID

Parameter	Value	Explanation
LOW-MID FREQ	20.0 Hz–10.0 kHz	Adjusts the tone for the low-mid frequency range.

HIGH MID

Parameter	Value	Explanation
HIGH-MID FREQ	20.0 Hz–10.0 kHz	Adjusts the tone for the high-mid frequency range.

FX

You can select one effect from FX/DELAY/REVERB.

FX type

This is a list of the effects that can be selected for FX.

Effect Name	Explanation
CHORUS	Frequency band division is employed to produce two different choruses, one for low frequencies and one for higher frequencies. This allows you to achieve a more natural chorus sound.
FLANGER	The flanging effect gives a twisting, jet-airplane-like character to the sound.
PHASER	By adding varied-phase portions to the direct sound, the phaser effect gives a whooshing, swirling character to the sound.
UNI-V	This models a Uni-Vibe. Although this resembles a phaser effect, it also provides a unique undulation that you can't get with a regular phaser.
TREMOLO	Tremolo is an effect that creates a cyclic change in volume.
VIBRATO	This effect creates vibrato by slightly modulating the pitch.
ROTARY	This produces an effect like the sound of a rotary speaker.
RING MOD (Ring Modulator)	This creates a bell-like sound by ring-modulating the bass sound with the signal from the internal oscillator. The sound can be unmusical and lack distinctive pitches.
SLOW GEAR	This produces a volume-swell effect ("violin-like" sound).
T. WAH (Touch Wah)	You can produce a wah effect with the filter changing in response to the bass level.
GRAPHIC EQ (Graphic Equalizer)	Adjusts the tone. You can adjust the sound quality in ten bands.
PARAMETRIC EQ (Parametric Equalizer)	Adjusts the tone. You can adjust the sound quality in four bands.
OCTAVE	This adds a note one octave lower, creating a richer sound.
PITCH SHIFTER	This effect changes the pitch of the original sound (up or down) within a range of two octaves.
HARMONIST	Harmonist is an effect where the amount of shifting is adjusted according to an analysis of the bass input, allowing you to create harmony based on diatonic scales.
HUMANIZER	This can create human vowel-like sounds.
ENHANCER	This is an effect that clarifies the contour of the input sound by emphasizing the attack of the sound following changes in the input level.
BASS SIMULATOR	Simulation of the characteristics of particular bass components such as pickups and different bass bodies allows you to switch among a number of different BASS types all while using a single bass.
DEFRETTER	This simulates a fretless bass.
BASS SYNTH	This is a synth sound that processes the bass input signal.
AUTO WAH	This changes the filtering over a periodic cycle, providing an automatic wah effect.
HEAVY OCTAVE	This adds sound lowered by an octave to the original sound. Since you can play chords even when using this effect, you can use it to fatten the sound of your chordal playing as well.
SLICER	This consecutively interrupts the sound to create the impression that a rhythm backing phrase is being played.

CHORUS

Frequency band division is employed to produce two different choruses, one for low frequencies and one for higher frequencies. This allows you to achieve a more natural chorus sound.

Parameter	Value	Explanation
LOW RATE	0–100	Adjust the speed of the chorus effect for the low frequency range.
LOW DEPTH	0–100	Adjust the depth of the chorus effect for the low frequency range. If you wish to use this as a doubling effect, use a setting of 0.
LOW PRE DELAY	0.0–40.0 ms	Adjusts the delay of the effect sound in the low-frequency range. Extending the pre-delay will produce the sensation of multiple sounds (doubling effect).
LOW LEVEL	0–100	Adjusts the volume of the effect sound in the low-frequency range.
DIRECT MIX	0–100	Adjusts the volume of the direct sound.
XOVER FREQ	100 Hz–4.00 kHz	This sets the frequency dividing the low-and high-frequency ranges.
HIGH RATE	0–100	Adjust the speed of the chorus effect for the high frequency range.
HIGH DEPTH	0–100	Adjust the depth of the chorus effect for the high frequency range. If you wish to use this as a doubling effect, use a setting of 0.
HIGH PRE DELAY	0.0–40.0 ms	Adjusts the delay of the effect sound in the high-frequency range. Extending the pre-delay will produce the sensation of multiple sounds (doubling effect).
HIGH LEVEL	0–100	Adjusts the volume of the effect sound in the high-frequency range.

FLANGER

The flanging effect gives a twisting, jet-airplane-like character to the sound.

Parameter	Value	Explanation
RATE	0–100	This sets the rate of the flanging effect.
DEPTH	0–100	Determines the depth of the flanging effect.
RESONANCE	0–100	Determines the amount of resonance (feedback). Increasing the value will emphasize the effect, creating a more unusual sound.
MANUAL	0–100	Adjusts the center frequency at which to apply the effect.
LOW CUT	FLAT, 55 Hz–800 Hz	This sets the frequency at which the low cut filter begins to take effect. When "Flat" is selected, the low cut filter will have no effect.
EFFECT LEVEL	0–100	Adjusts the volume of the flanger.
DIRECT MIX	0–100	Adjusts the volume of the direct sound.

PHASER

By adding varied-phase portions to the direct sound, the phaser effect gives a whooshing, swirling character to the sound.

Parameter	Value	Explanation
TYPE	Selects the number of stages that the phaser effect will use.	
	4 STAGE	This is a four-phase effect. A light phaser effect is obtained.
	8 STAGE	This is a eight-phase effect. It is a popular phaser effect.
	12 STAGE	This is a twelve-phase effect. A deep phase effect is obtained.
	BiPHASE	This is the phaser with two phase shift circuits connected in series.
RATE	0–100	This sets the rate of the phaser effect.
DEPTH	0–100	Determines the depth of the phaser effect.
RESONANCE	0–100	Determines the amount of resonance (feedback). Increasing the value will emphasize the effect, creating a more unusual sound.
MANUAL	0–100	Adjusts the center frequency of the phaser effect.
STEP RATE	OFF, 0–100	This sets the cycle of the step function that changes the rate and depth. When it is set to a higher value, the change will be finer. Set this to "Off" when not using the Step function.
EFFECT LEVEL	0–100	Adjusts the volume of the phaser.
DIRECT MIX	0–100	Adjusts the volume of the direct sound.

UNI-V

This models a Uni-Vibe.

Although this resembles a phaser effect, it also provides a unique undulation that you can't get with a regular phaser.

Parameter	Value	Explanation
RATE	0–100	Adjusts the rate of the UNI-V effect.
DEPTH	0–100	Adjusts the depth of the UNI-V effect.
LEVEL	0–100	Adjusts the volume.

TREMOLO

Tremolo is an effect that creates a cyclic change in volume.

Parameter	Value	Explanation
WAVE SHAPE	0–100	Adjusts changes in volume level. A higher value will steepen wave's shape.
RATE	0–100	Adjusts the frequency (speed) of the change.
DEPTH	0–100	Adjusts the depth of the effect.
LEVEL	0–100	Adjusts the volume.

VIBRATO

This effect creates vibrato by slightly modulating the pitch.

Parameter	Value	Explanation
RATE	0–100	Adjusts the rate of the vibrato.
DEPTH	0–100	Adjusts the depth of the vibrato.
LEVEL	0–100	Adjusts the volume.

ROTARY

This produces an effect like the sound of a rotary speaker.

Parameter	Value	Explanation
RATE	0–100	Adjusts the speed of the rotation.
DEPTH	0–100	Adjusts the amount of depth in the rotary effect.
LEVEL	0–100	Adjusts the volume.

RING MOD

The sound can be unmusical and lack distinctive pitches.

Parameter	Value	Explanation
MODE	This selects the mode for the ring modulator.	
	NORMAL	This is a normal ring modulator.
	INTELLIGENT	By ring-modulating the input signal, a bell like sound is created. The intelligent ring modulator changes the oscillation frequency according to the pitch of the input sound and therefore produces a sound with the sense of pitch, which is quite different from NORMAL. This effect does not give a satisfactory result if the pitch of the bass sound is not correctly detected. So, you must use single notes, not chords.
FREQUENCY	0–100	Adjusts the frequency of the internal oscillator.
EFFECT LEVEL	0–100	Adjusts the volume of the effect sound.
DIRECT MIX	0–100	Adjusts the volume of the direct sound.

SLOW GEAR

This produces a volume-swell effect ("violin-like" sound).

Parameter	Value	Explanation
SENS	0–100	Adjusts the sensitivity of the slow gear. When it is set to a lower value, the effect of the slow gear can be obtained only with a stronger picking, while no effect is obtained with a weaker picking. When the value is set higher, the effect is obtained even with a weak picking.
RISE TIME	0–100	Adjusts the time needed for the volume to reach its maximum from the moment you begin picking.
LEVEL	0–100	Adjusts the volume of the effect sound.

T. WAH

You can produce a wah effect with the filter changing in response to the bass level.

Parameter	Value	Explanation
MODE	Selects the wah mode.	
	LPF	Low pass filter. This provides a wah effect over a wide frequency range.
	BPF	Band pass filter. This provides a wah effect in a narrow frequency range.
POLARITY	Selects the direction in which the filter will change in response to the input.	
	DOWN	The frequency of the filter will fall.
	UP	The frequency of the filter will rise.
SENS	0–100	Specifies the sensitivity with which the filter changes in the direction specified by the POLARITY setting. Higher values will produce a stronger tone which emphasizes the wah effect more. With a setting of 0, the strength of picking will have no effect.
FREQ	0–100	Adjusts the center frequency of the Wah effect.
PEAK	0–100	Adjusts the way in which the wah effect applies to the area around the center frequency. Higher values will produce a stronger tone which emphasizes the wah effect more. With a value of 50 a standard wah sound will be produced.
EFFECT LEVEL	0–100	Adjusts the volume of the effect sound.
DIRECT MIX	0–100	Adjusts the volume of the direct sound.

GRAPHIC EQ

This adjusts the tone. You can adjust the sound quality in ten bands.

Parameter	Value
31 Hz	-20–+20 dB
62 Hz	
125 Hz	
250 Hz	
500 Hz	
1 kHz	
2 kHz	
4 kHz	
8 kHz	
16 kHz	
LEVEL	-20–+20 dB

PARAMETRIC EQ

This adjusts the tone. You can adjust the sound quality in four bands.

Parameter	Value	Explanation
LOW GAIN	-20–+20 dB	Adjusts the low frequency range tone.
LOW-MID GAIN	-20–+20 dB	Adjusts the low-middle frequency range tone.
HIGH-MID GAIN	-20–+20 dB	Adjusts the high-middle frequency range tone.
HIGH GAIN	-20–+20 dB	Adjusts the high frequency range tone.
LEVEL	-20–+20 dB	Adjusts the overall volume level of the equalizer.
LOW CUT	FLAT, 20 Hz–800 Hz	This sets the frequency at which the low cut filter begins to take effect. When "Flat" is selected, the low cut filter will have no effect.
LOW-MID FREQUENCY	20.0 Hz–10.0 kHz	Specifies the center of the frequency range that will be adjusted by the LOW-MID GAIN.
LOW-MID Q	0.5–16	Adjusts the width of the area affected by the EQ centered at the LOW-MID FREQ. Higher values will narrow the area.
HIGH-MID FREQUENCY	20.0 Hz–10.0 kHz	Specifies the center of the frequency range that will be adjusted by the HIGH-MID GAIN.
HIGH-MID Q	0.5–16	Adjusts the width of the area affected by the EQ centered at the HIGH-MID FREQ. Higher values will narrow the area.
HIGH CUT	630 Hz–12.5 kHz, FLAT	This sets the frequency at which the high cut filter begins to take effect. When "FLAT" is selected, the high cut filter will have no effect.

OCTAVE

This adds a note one or two octave lower, creating a richer sound.

Parameter	Value	Explanation
-1OCT LEVEL	0–100	Adjusts the volume of the sound one octave below.
-2OCT LEVEL	0–100	Adjusts the volume of the sound two octaves below.
DIRECT MIX	0–100	Adjusts the volume of the direct sound.

PITCH SHIFTER

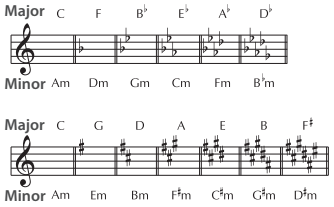
This effect changes the pitch of the original sound (up or down) within a range of two octaves.

Parameter	Value	Explanation
VOICE	Selects the number of voices for the pitch shift sound.	
	1VOICE	One-voice pitch-shifted sound output in mono.
	2VOICE	Two-voice pitch-shifted sound (PS1, PS2) output in mono.
PS1:MODE PS2:MODE	Selection for the pitch shifter mode.	
	FAST, MEDIUM, SLOW	The response is slower in the order of FAST, MEDIUM and SLOW, but the modulation is lessened in the same order.
	MONO	MONO is used for inputting single notes. You may be unable to produce the intended effect when playing chords (two or more notes played simultaneously).
PS1:PITCH PS2:PITCH	-24–+24	Adjusts the amount of pitch shift (the amount of interval) in semitone steps.
PS1:FINE PS2:FINE	-50–+50	Make fine adjustments to the interval. The amount of the change in the Fine 100 is equivalent to that of the Pitch 1.
PS1:PRE DELAY PS2:PRE DELAY	0–300 ms	Adjusts the time from when the direct sound is heard until the pitch shifted sounds are heard. Normally you can leave this set at 0 ms.
1:LEVEL 2:LEVEL	0–100	Adjusts the volume of the pitch shifter.
PS1:FEEDBACK	0–100	Adjusts the feedback amount of the pitch shift sound.
DIRECT MIX	0–100	Adjusts the volume of the direct sound.

HARMONIST

Harmonist is an effect where the amount of shifting is adjusted according to an analysis of the bass input, allowing you to create harmony based on diatonic scales.

* Because of the need to analyze the pitch, chords (two or more sounds played simultaneously) cannot be played. Be sure to mute all the other strings and play only one note at a time.
* If the unit cannot detect the attack, it may not sound correctly. If the unit cannot detect the attack, it may not sound correctly.
* The sensitivity may vary according to the guitar's TONE knob and pickup type.

Parameter	Value	Explanation
VOICE	Selects the number of voices for the pitch shift sound.	
	1VOICE	One pitch-shifted voice is output in mono.
	2VOICE	Two pitch-shifted voices are output in mono.
HR1:HARMONY HR2:HARMONY	-2 oct–+2 oct, USER	This determines the pitch of the sound added to the input sound, when you are making a harmony. It allows you to set it by up to 2 octaves higher or lower than the input sound. When the scale is set to USER, this parameter sets the user scale number to be used.
HR1:LEVEL HR2:LEVEL	0–100	Adjusts the volume of the harmony sound.
HR1:PRE DELAY HR2:PRE DELAY	0–300 ms	Adjusts the time from when the direct sound is heard until the harmonist sounds are heard. Normally you can leave this set at 0 ms.
HR1:FEEDBACK	0–100	Adjusts the feedback amount of the harmonist sound.
MASTER KEY	C (Am)–B (G#m)	The key setting corresponds to the key of the song (#, b) as follows. 
DIR.MIX (DIRECT MIX)	0–100	Adjusts the volume of the direct sound.

Parameter		Value	Explanation
USER SCALE *1 *2	C	-24𝄫C–+24𝄪C	You can specify a pitch in the range two octaves above or below the direct sound.
	Db	-24𝄫D♭–+24𝄪D♭	
	D	-24𝄫D–+24𝄪D	
	Eb	-24𝄫E♭–+24𝄪E♭	
	E	-24𝄫E–+24𝄪E	
	F	-24𝄫F–+24𝄪F	
	F#	-24𝄫F♯–+24𝄪F♯	
	G	-24𝄫G–+24𝄪G	
	Ab	-24𝄫A♭–+24𝄪A♭	
	A	-24𝄫A–+24𝄪A	
	Bb	-24𝄫B♭–+24–𝄪B♭	
	B	-24𝄫B–+24𝄪B	

*1 This can be specified if HR1:HARMONY or HR2:HARMONY is "USER".

*2 The correspondence between the note names and the knobs differs depending on the specified KEY. Knob [1] of the first page is the tonic (root note) of the specified KEY. The table shows the example of when KEY is set to C (Am).

HUMANIZER

This can create human vowel-like sounds.

Parameter	Value	Explanation
MODE	This sets the mode that switches the vowels.	
	PICKING	It changes from VOWEL 1 to VOWEL 2 along with the picking. The time spent for the change is adjusted with the rate.
	AUTO	By adjusting the rate and depth, two vowels (VOWEL 1 and VOWEL 2) can be switched automatically.
VOWEL 1	a, e, i, o, u	Selects the first vowel.
VOWEL 2	a, e, i, o, u	Selects the second vowel.
RATE	0–100	Adjusts the cycle for changing the two vowels.
DEPTH	0–100	Adjusts the depth of the effect.
LEVEL	0–100	Adjusts the volume.
SENS *1	0–100	Adjusts the sensitivity of the humanizer. When it is set to a lower value, no effect of the humanizer is obtained with weaker picking, while stronger picking produces the effect. When it is set to a higher value, the effect of the humanizer can be obtained whether the picking is weak or strong.
MANUAL *2	0–100	Adjusts the cycle for changing the two vowels. When it is set to lower than 50, the time for VOWEL 1 is shorter. When it is set to higher than 50, the time for VOWEL 1 is longer.

*1 Setting available when MODE is set to PICKING.

*2 Setting available when MODE is set to AUTO.

ENHANCER

This is an effect that clarifies the contour of the input sound by emphasizing the attack of the sound following changes in the input level.

Parameter	Value	Explanation
SENS	0–100	This adjusts the Enhancer sensitivity. The more the value is increased, the more softly you can play and still have the effect applied.
LOW	0–100	Adjusts the enhancer volume for the low frequency range.
LOW FREQ	31.5 Hz–125 Hz	Sets the low frequency range for the enhanced sound.
HIGH	0–100	Adjusts the enhancer volume for the high frequency range.
HIGH FREQ	800 Hz–8.00 kHz	Sets the high frequency range for the enhanced sound.

BASS SIMULATOR

Simulation of the characteristics of particular bass components such as pickups and different bass bodies allows you to switch among a number of different bass types all while using a single bass.

Parameter	Value	Explanation
TYPE	Selects the type of the bass simulator.	
	PAS→ACT	Changes from a passive type pickup tone to an active type pickup tone.
	ACT→PAS	Changes from an active type pickup tone to a passive type pickup tone.
	SGL→HUM	Changes from a single-coil pickup tone to a humbucking pickup tone.
	HUM→SGL	Changes from a humbucking pickup tone to a single-coil pickup tone.
	SLD→HLW	Changes a solid body bass tone to a hollow body bass tone with the body resonance added.
	SGL→AC	Changes a single-coil pickup tone to an acoustic bass tone.
	HUM→AC	Changes a humbucking pickup tone to an acoustic bass tone.
LOW	-50–+50	Adjusts the tone for the low frequency range.
HIGH	-50–+50	Adjusts the tone for the high frequency range.
BODY	0–100	Adjusts the way the body sounds when TYPE is set to SLD→HLW, SGL→AC, or HUM→AC. The body sound increases as the value is raised; reducing the value produces a tone similar to that from a piezo pickup.
LEVEL	0–100	Adjusts the volume of the effect sound.

DEFRETTER

This simulates a fretless bass.

Parameter	Value	Explanation
SENS	0–100	This controls the input sensitivity of the defretter.
ATTACK	0–100	Adjusts the attack of the picking sound.
TONE	-50–+50	Adjusts the amount of blurring between the notes.
EFFECT LEVEL	0–100	Adjust the volume of the defretter sound.
DIRECT LEVEL	0–100	Adjust the volume of the direct sound.

BASS SYNTH

This is a synth sound that processes the bass input signal.

MEMO

- Because of the need to analyze the pitch, chords (two or more sounds played simultaneously) cannot be played. Be sure to mute all the other strings and play only one note at a time.
- When you are to play the next string while a certain sound is still playing, mute the previous sound and then play the next one with a clear attack. If the unit cannot detect the attack, it may not sound correctly.
- The sensitivity may vary according to the bass's TONE knob and pickup type.

Parameter	Value	Explanation
WAVE	SAW	Creates a synth sound with a saw waveform.
	SQUARE	Creates a synth sound with the square waveform.
CUTOFF	0–100	Adjusts the frequency where the harmonics contents of the sound are cut off.
RESONANCE	0–100	This adjusts the amount of resonance (and the tone coloration) in the synth sound. The higher the value, the more the synth tone coloration is emphasized.
EFFECT LEVEL	0–100	Adjusts the volume of the synth sound.
FILTER SENS	0–100	This adjusts the amount of filtering applied in response to the input.
FILTER DECAY	0–100	This sets the time needed for the filter to finish its sweep.
FILTER DEPTH	0–100	Adjusts the depth of the filter. When the value is higher, the filter will change more drastically.
DIRECT LEVEL	0–100	Adjust the volume of the direct sound.

AUTO WAH

This changes the filtering over a periodic cycle, providing an automatic wah effect.

Parameter	Value	Explanation
MODE	Selects the wah mode.	
	LPF	Low pass filter. This provides a wah effect over a wide frequency range.
	BPF	Band pass filter. This provides a wah effect in a narrow frequency range.
RATE	0–100	Adjusts the frequency (speed) of the change.
DEPTH	0–100	Adjusts the depth of the effect.
FREQ	0–100	Adjusts the center frequency of the Wah effect.
PEAK	0–100	Adjusts the way in which the wah effect applies to the area around the center frequency. Higher values will produce a stronger tone which emphasizes the wah effect more. With a value of 50 a standard wah sound will be produced.
EFFECT LEVEL	0–100	Adjusts the volume of the effect sound.
DIRECT MIX	0–100	Adjusts the volume of the direct sound.

HEAVY OCTAVE

This adds sound lowered by an octave to the original sound. Since you can play chords even when using this effect, you can use it to fatten the sound of your chordal playing as well.

Parameter	Value	Explanation
1OCT LEVEL	0–100	Adjusts the volume of the sound one octave below.
2OCT LEVEL	0–100	Adjusts the volume of the sound two octaves below.
DIRECT MIX	0–100	Adjusts the volume of the direct sound.

SLICER

This consecutively interrupts the sound to create the impression that a rhythm backing phrase is being played.

Parameter	Value	Explanation
PATTERN	P1–P20	Select the slice pattern that will be used to cut the sound.
RATE	0–100	Adjust the rate at which the sound will be cut.
TRIGGER SENS	0–100	Adjust the sensitivity of triggering. With low settings of this parameter, softly picked notes will not retrigger the phrase (i.e., the phrase will continue playing), but strongly picked notes will retrigger the phrase so that it will playback from the beginning. With high settings of this parameter, the phrase will be retriggered even by softly picked notes.
EFFECT LEVEL	0–100	Adjusts the volume of the effect sound.
DIRECT MIX	0–100	Adjusts the volume of the direct sound.

DELAY

DELAY type

This effect adds delayed sound to the direct sound, giving more body to the sound or creating special effects.

TYPE	Explanation
DIGITAL	This is a simple delay.
ANALOG	This gives a mild analog delay sound.
TAPE ECHO	This setting provides the characteristic wavering sound of the tape echo.
REVERSE	This produces an effect where the sound is played back in reverse.
MODULATE	This delay adds a pleasant wavering effect to the sound.
SDE-3000	This models the sound of the Roland SDE-3000.

DELAY parameters

Parameter	Value	Explanation
TYPE	Refer to DELAY type	
DELAY TIME	1–2000 ms	Adjusts the delay time.
FEEDBACK	0–100	Adjusts the volume that is returned to the input. A higher value will increase the number of the delay repeats.
HIGH CUT	630 Hz–12.5 kHz, FLAT	This sets the frequency at which the high cut filter begins to take effect. When "FLAT" is selected, the high cut filter will have no effect.
EFFECT LEVEL	0–120	Adjusts the volume of the delay sound.
DIRECT MIX	0–100	Adjusts the volume of the direct sound.
MOD RATE (TYPE = MODULATE, SDE-3000 only)	0–100	Adjusts the modulation rate of the delay sound.
MOD DEPTH (TYPE = MODULATE, SDE-3000 only)	0–100	Adjusts the modulation depth of the delay sound
TAP TIME	–	Sets the delay time. When you press this button two or more times, the delay time is set to the interval between presses.
FILTER (TYPE = SDE-3000 only)	OFF, ON	Turns the filter on/off. If this is on, a natural-sounding effect is obtained when you're using the delay as an echo.
RANGE (TYPE = SDE-3000 only)	8 kHz, 17 kHz	Models the way in which the SDE-3000's frequency response is affected by the delay range.
DELAY PHASE (TYPE = SDE-3000 only)	NORMAL, INVERSE	Specifies the phase of the delay sound. Selecting INV inverts the phase.
FEEDBACK PHASE (TYPE = SDE-3000 only)	NORMAL, INVERSE	Specifies the phase of the delay sound feedback. Selecting INV inverts the phase.
MOD SW (TYPE = SDE-3000 only)	OFF, ON	Turns the modulation on/off.

REVERB

REVERB type

This effect adds reverberation to the sound.

TYPE	Explanation
PLATE	Simulates plate reverberation (a reverb unit that uses the vibration of a metallic plate). Provides a metallic sound with a distinct upper range.
ROOM	Simulates the reverberation in a small room. Provides warm reverberations.
HALL	Simulates the reverberation in a concert hall. Provides clear and spacious reverberations.
SPRING	This simulates the sound of a guitar amp's built-in spring reverb.
MODULATE	This reverb adds the wavering sound found in hall reverb to provide an extremely pleasant reverb sound.

REVERB parameters

Parameter	Value	Explanation
REVERB TIME	0.1–10.0 s	Adjusts the length (time) of reverberation.
PRE DELAY	0–500 ms	Adjusts the time until the reverb sound appears.
LOW CUT	FLAT, 20 Hz–800 Hz	This sets the frequency at which the low cut filter begins to take effect. When "Flat" is selected, the low cut filter will have no effect.
HIGH CUT	630 Hz– 12.5 kHz, FLAT	This sets the frequency at which the high cut filter begins to take effect. When "FLAT" is selected, the high cut filter will have no effect.
DENSITY	0–10	Adjusts the density of the reverb sound.
EFFECT LEVEL	0–100	Adjusts the volume of the reverb sound.
DIRECT MIX	0–100	Adjusts the volume of the direct sound.
COLOR (TYPE = SPRING only)	0–100	Adjust the unique tone of the spring reverb.

PEDAL FX

You can control the effect in real time by adjusting the expression pedal connected to the EXP PEDAL jack on the rear panel, or to the rear panel of the GA-FC foot controller (sold separately).

PEDAL FX type

TYPE	Explanation
PEDAL WAH	You can control the wah effect in real time by adjusting the expression pedal connected to GA-FC jack or EXP PEDAL jack.
PEDAL BEND	This lets you use the pedal to get a pitch bend effect. * Because of the need to analyze the pitch, chords (two or more sounds played simultaneously) cannot be played.

PEDAL FX parameters

PEDAL WAH

You can control the wah effect in real time by adjusting the expression pedal connected to the GA-FC jack and EXP PEDAL jack.

Parameter	Value	Explanation
TYPE	Selects the type of wah.	
	CRY WAH	This models the sound of the CRY BABY wah pedal popular in the '70s.
	VO WAH	This models the sound of the VOX V846.
	FAT WAH	This is a wah sound featuring a bold tone.
	LIGHT WAH	This wah has a refined sound with no unusual characteristics.
	BASS WAH	A wah sound with a wide variable range, suitable for the tonal range of bass guitars.
	RESO WAH	This completely original effect offers enhancements on the characteristic resonances produced by analog synth filters.
PEDAL POS (Pedal Position)	0–100	Adjusts the position of the wah pedal. This parameter is used after it's been assigned to an EXP Pedal or similar controller.
PEDAL MIN	0–100	Selects the tone produced when the heel of the EXP Pedal is depressed.
PEDAL MAX	0–100	Selects the tone produced when the toe of the EXP Pedal is depressed.
EFFECT LEVEL	0–100	Adjusts the volume of the effect sound.
DIRECT MIX	0–100	Adjusts the volume of the direct sound.

PEDAL BEND

This lets you use the pedal to get a pitch bend effect.

* Because of the need to analyze the pitch, chords (two or more sounds played simultaneously) cannot be played.

Parameter	Value	Explanation
PEDAL POS (Pedal Position)	0–100	Adjusts the pedal position for pedal bend. This parameter is used after it's been assigned to an EXP Pedal or similar controller.
PITCH	-24–+24	This sets the pitch at the point where the EXP Pedal is all the way down.
EFFECT LEVEL	0–100	Adjusts the volume of the pitch bend sound.
DIRECT MIX	0–100	Adjusts the volume of the direct sound.

NS (NOISE SUPPRESSOR)

This effect reduces the noise and hum picked up by bass pickups. Since it suppresses the noise in synchronization with the envelope of the bass sound (the way in which the bass sound decays over time), it has very little effect on the bass sound, and does not harm the natural character of the sound.

Parameter	Value	Explanation
ON/OFF	OFF, ON	Turns this effect on/off.
THRESHOLD	0–100	Adjusts this parameter as appropriate for the volume of the noise. If the noise level is high, a higher setting is appropriate. If the noise level is low, a lower setting is appropriate. High settings for the threshold parameter may result in there being no sound when you play with your bass volume turned down.
RELEASE	0–100	Adjusts the time from when the noise suppressor begins to function until the noise level reaches "0".