

VC-2 *Vocal Designer*

Owner's Manual

Thank you, and congratulations on your choice of the Roland Vocal Designer VC-2.

Before using this unit, carefully read the sections entitled: "USING THE UNIT SAFELY" and "IMPORTANT NOTES" (p. 2; p. 3). These sections provide important information concerning the proper operation of the unit. Additionally, in order to feel assured that you have gained a good grasp of every feature provided by your new unit, Owner's Manual should be read in its entirety. The manual should be saved and kept on hand as a convenient reference.

- * *Microsoft and Windows are registered trademarks of Microsoft Corporation.*
- * *Windows® is known officially as: "Microsoft® Windows® operating system."*
- * *Apple and Macintosh are registered trademarks of Apple Computer, Inc.*
- * *Mac OS is a trademark of Apple Computer, Inc.*
- * *All product names mentioned in this document are trademarks or registered trademarks of their respective owners.*



Copyright © 2005 ROLAND CORPORATION

All rights reserved. No part of this publication may be reproduced in any form without the written permission of ROLAND CORPORATION.

USING THE UNIT SAFELY

INSTRUCTIONS FOR THE PREVENTION OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

About WARNING and CAUTION Notices

 WARNING	Used for instructions intended to alert the user to the risk of death or severe injury should the unit be used improperly.
 CAUTION	Used for instructions intended to alert the user to the risk of injury or material damage should the unit be used improperly. * Material damage refers to damage or other adverse effects caused with respect to the home and all its furnishings, as well to domestic animals or pets.

About the Symbols

	The  symbol alerts the user to important instructions or warnings. The specific meaning of the symbol is determined by the design contained within the triangle. In the case of the symbol at left, it is used for general cautions, warnings, or alerts to danger.
	The  symbol alerts the user to items that must never be carried out (are forbidden). The specific thing that must not be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the unit must never be disassembled.
	The  symbol alerts the user to things that must be carried out. The specific thing that must be done is indicated by the design contained within the circle. In the case of the symbol at left, it means that the power-cord plug must be unplugged from the outlet.

ALWAYS OBSERVE THE FOLLOWING

WARNING

- Before using this unit, make sure to read the instructions below, and the Owner's Manual. 
- Do not open or perform any internal modifications on the unit. 
- Do not attempt to repair the unit, or replace parts within it (except when this manual provides specific instructions directing you to do so). Refer all servicing to your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page. 
- Never use or store the unit in places that are:
 - Subject to temperature extremes (e.g., direct sunlight in an enclosed vehicle, near a heating duct, on top of heat-generating equipment); or are 
 - Damp (e.g., baths, washrooms, on wet floors); or are 
 - Humid; or are
 - Exposed to rain; or are
 - Dusty; or are
 - Subject to high levels of vibration.

WARNING

- Do not allow any objects (e.g., flammable material, coins, pins); or liquids of any kind (water, soft drinks, etc.) to penetrate the unit. 

- In households with small children, an adult should provide supervision until the child is capable of following all the rules essential for the safe operation of the unit. 
- Protect the unit from strong impact. (Do not drop it!) 

CAUTION

- Never climb on top of, nor place heavy objects on the unit. 

IMPORTANT NOTES

In addition to the items listed under “USING THE UNIT SAFELY” on page 2, please read and observe the following:

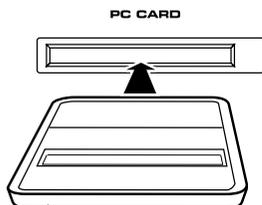
Placement

- Do not expose the unit to direct sunlight, place it near devices that radiate heat, leave it inside an enclosed vehicle, or otherwise subject it to temperature extremes. Excessive heat can deform or discolor the unit.

Before Using V-Card

Using V-Card

- Carefully insert the V-Card all the way in—until it is firmly in place.



- Never touch the terminals of the V-Card. Also, avoid getting the terminals dirty.

Additional Precautions

- Unauthorized duplication, reproduction, hiring, and lending prohibited.

Never delete files or folders from the VC-2 card, or format the card itself. Doing so will render the VC-2 inoperable.

To prevent accidents, do not insert the VC-2 card into your computer or any other device except as directed by Roland. If the V-Synth/VariOS is connected to your computer via USB, the VC-2 card will be detected as a conventional drive, so be careful not to delete the contents accidentally. If the contents of the card should be lost accidentally, please contact your retailer, the nearest Roland Service Center, or an authorized Roland distributor.

Contents

IMPORTANT NOTES	3	Carrier Screen for Processor~ Patch Algorithms	27
Main Features	6	TVA	27
Conventions Used in This Manual	6	Wave Screen	27
About the VC-2	7	OSC	27
Internal Structure	7	VARI	27
Patch Algorithms	7	TVA	27
Memory Structure	8	Poly Pitch Shifter Screen	28
Using with the V-Synth	9	OSC	28
Panel Descriptions	10	PITCH / EQ GROWL / TVA / CTRL	29
Front Panel	10	Effect Screen	30
Rear Panel	12	Routing	30
Try Out the Sounds	14	MFX	31
Turning On the Power	14	CHO	31
The Top Screen of Patch Mode	14	REV	31
Parameters in the Top Screen	15	Using Waves (Wave Mode)	32
Selecting a Patch	16	Importing Individual Wave Files (Wave Import)	32
Selecting Patches with the VALUE dial	16	Using the Wave Browser	33
Selecting Patches from the List	16	Copying a Wave (WAVE Copy)	33
Selecting Patches with Patch Palette	16	Moving a Wave (WAVE Move)	33
Playing	17	Exchanging a Wave (WAVE Exchange)	33
Enabling or Disabling the Beep Tone	17	Deleting a Wave (WAVE Delete)	33
Creating/Editing Patches (Patch Mode) ...	18	Settings Common to All Modes (System Mode)	34
Creating Patches	18	How to Make the System Function Settings	34
Basic Procedure for Patch Editing	18	Saving the System Settings (Write)	34
Changing the Pitch (PATCH Tune)	18	Initializing the System Settings (Init)	34
Transmitting Data to an External MIDI Device (Data Transfer)	19	Viewing VC-2's Information (Information)	34
Naming a Patch (PATCH Name)	20	Functions of System Parameters	35
Saving Patches (PATCH Write)	20	Settings Common to the Entire System (Common)	35
Copying Patch Controller Settings (Patch Controller Copy)	21	Controller Settings (Controller)	36
Deleting Patches (PATCH Delete)	21	Adjusting the Sensitivity of the Touch Screen/Time Trip Pad/D Beam Controller	37
Selecting a Patch from a List (PATCH List)	21	Saving and Loading Projects (Disk Mode)	38
Top Screen	22	Saving a Project to the VC-2 Card (Save Project)	38
SYSTEM MIC Setting Screen	22	Loading a Project from the VC-2 Card into the V-Synth (Load Project)	38
Switching the Mic Setting	22	Reset to Default Factory Settings (Factory Reset)	39
Naming a Mic Setting (Setting Name)	22		
PRE-EFX Type (Pre-Effect Types)	23		
Carrier Screen	24		
OSC	24		
PITCH	25		
EQ GROWL	25		
TVA	25		
CTRL	26		

Backing Up Data to Your Computer	40	Settings Common to All Menu	
Selecting the VC-2's USB Storage Mode.....	40	(System Menu).....	60
Connecting the VC-2 to Your Computer via		Functions of System Parameters.....	60
USB.....	40	Saving the System Settings (Write)	61
Copying Waves from Your Computer to the		Initializing the System Settings (Init).....	61
VC-2 Card	41	Using Waves (Wave Menu).....	62
Backing Up VC-2 Card Projects to Your		Importing Individual Wave Files (Import)	62
Computer	41	Deleting a Wave (Delete)	62
Canceling the USB Connection	42	Saving and Loading Projects	
Exchanging MIDI Messages with Your		(Disk Menu)	63
Computer	42	Saving a Project to the VC-2 Card	
Using with the VariOS.....	43	(Save Project)	63
Panel Descriptions.....	44	Loading a Project from the VC-2 Card into	
Front Panel	44	the VariOS (Load Project)	63
Rear Panel	45	Reset to Default Factory Settings	
Try Out the Sounds.....	46	(Factory Reset)	64
Turning On the Power	46	Other Functions.....	65
Basic Operation of the VC-2	47	Utility Menu.....	65
The Screen and Basic Operation.....	47	Transmitting Data to an External MIDI Device	
Switching the Screen	47	(Data Transfer)	65
Setting the MIDI Keyboard	47	Viewing VC-2's Information (Information)	65
Determining the MIDI Keyboard Routings	47	Chord Memory Menu	65
Setting the MIDI Receive Channel	48	Backing Up Data to Your Computer	66
Selecting a Patch.....	49	Connecting the VariOS to Your Computer	
Creating/Editing Patches (Patch Menu) ...	50	via USB	66
Creating/Editing Patches	50	Copying Waves from Your Computer to the	
Carr (Carrier).....	50	VC-2 Card.....	66
Carrier Menu for Processor~ Patch		Backing Up VC-2 Card Projects to Your	
Algorithms	52	Computer	66
Wave	53	Canceling the USB Connection	67
PolyPShift (Poly Pitch Shifter)	54	Exchanging MIDI Messages with Your	
Route (Routing).....	55	Computer	67
MFX.....	55	Appendices	69
Rev (Reverb)	55	Effects List	70
Cho (Chorus)	55	MFX Parameters	70
Common.....	56	Chorus Parameters.....	88
Saving Patches (Write)	57	Reverb Parameters	89
Deleting Patches (Del)	57	MIDI Implementation Chart.....	95
Copying Patch Controller Settings		Specifications	97
(CtrlCopy)	57	Index	98
Changing the Mic Settings	58		
Switching the Mic Setting	58		
EFX Type (Pre-Effect Types)	58		

Main Features

The VC-2 is a PC card containing the V-Synth/VariOS system program. Just insert the VC-2 in the PC CARD slot of the V-Synth/VariOS, turn on the power, and you are ready to go. The program will be automatically loaded from the VC-2, and the V-Synth/VariOS will take on an entirely new identity as a "Vocal Designer."

- Human Vocal Modeling lets you produce extremely high-quality and musical sounds by connecting a mic and inputting your voice while you play the keyboard (or receive note messages).
- Lyrics you input via the mic will be clearly intelligible. You can create beautiful choirs and pop music backup choruses that reflect the dynamics and nuances of your voice and breathing. In addition to vintage-type vocoder sounds, you can create new vocoder sounds that allow the lyrics to be intelligible.
- High-quality preset patches are provided for each algorithm.
- You can use the Auto Note function to extract pitch data from the mic input so that the VC-2 will generate sound without you having to play the keyboard (or receive note messages).
- You can play choir/chorus sounds just from note data without having to provide mic input.
- Multi Chord Memory function lets you generate a full chorus with one finger simply by choosing a preset chord set.
- Use mic pre-effects such as equalizer, noise suppressor, and compressor, as well as three effects (reverb, chorus, multi-effect).

Conventions Used in This Manual

Operating buttons are enclosed by square brackets []; e.g., [EXIT].

Reference pages are indicated by (p. **).

The following symbols are used.



This indicates an important note; be sure to read it.



This indicates a memo regarding the setting or function; read it as desired.



This indicates a useful hint for operation; read it as necessary.



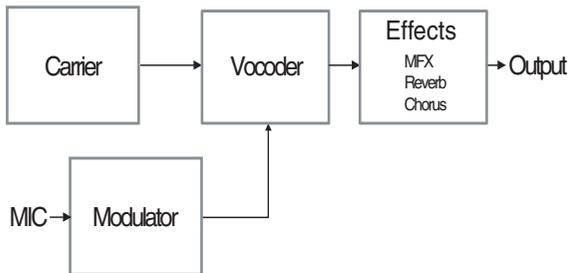
This indicates information for your reference; read it as necessary.

About the VC-2

Internal Structure

The VC-2 consists of a carrier section, a modulator section, a vocoder section, and an effects section.

- The carrier section generates the signal (timbre and pitch) that is the basis of the sound.
- The modulator section uses a mic input or wave to generate a signal from which the formant data (vocal character) is extracted.
- The vocoder section extracts the formant data (vocal character) from the signal generated by the modulator, and applies the formants to the signal that is generated by the carrier.
- The effects section provides multi-effects, chorus, and reverb.



Patch Algorithms

The VC-2 provides the following twelve patch algorithms. Each of these algorithms optimizes the values of certain parameters to make it easy for you to create a desired sound.

Modeling group

Modeling Choir

This produces an extremely clear choir (multiple vocal) sound.

Modeling Vocal

This produces an extremely clear solo vocal sound.

Modeling Analog

This produces an extremely clear sound based on a synth wave.

Vocoder group

Vocoder Choir

This produces a conventional vocoder sound using a choir (multiple vocal).

Vocoder Solo

This produces a conventional vocoder sound using a solo vocal.

Vocoder Vintage

This produces a traditional vocoder sound based on a synth wave.

Poly Pitch Shifter

Poly PShift

The vocal signal you input via the mic will be heard at the pitch you specify from the keyboard.

Keyboard group

Keyboard Choir

Instead of the mic input, samples will be used to generate the sound. You can add these samples. This creates the sound of a choir (multiple vocal).

Keyboard Vocal

Instead of the mic input, samples will be used to generate the sound. You can add these samples. This creates the sound of a solo vocal.

Keyboard Analog

Instead of the mic input, samples will be used to generate the sound. You can add these samples. This produces a sound based on a synth wave.

Processor group

Processor Type 1

External input (the rear panel INPUT L) is used in addition to the mic input. This produces an extremely clear sound.

* *Any keyboard playing will be ignored.*

Processor Type 2

External input (the rear panel INPUT L) is used in addition to the mic input. This produces a traditional vocoder sound.

* *Any keyboard playing will be ignored.*

Memory Structure

Project

The largest unit of memory used by the VC-2 is the **project**. A project contains up to 448 patches, up to 127 waves, and various system settings.

The VC-2 uses one project at a time.

Internal Memory

The internal memory of the V-Synth itself is used only when importing wave data (the **Wave Import** screen).

Work Area/Temporary Area

When you turn on the power of the VC-2, or when you load a project in Disk mode, the project data is placed in temporary memory called the **work area**.

The currently playable patch data is then further placed (from the work area) into a location called the **temporary area**. This means that even after editing a patch, you can return to the unedited condition by once again recalling that patch.

Since patch data that you edit will disappear if you simply turn off the power, you must **save (PATCH Write)** it if you want to keep your changes.

You must save the project (**DISK Save Project**) after you operate wave data in the **Wave** screen or the **Wave Import** screen.

VC-2 Card

Normally, wave and patch data is written to, and read from the VC-2 card. You can use the VC-2 card to store additional projects.

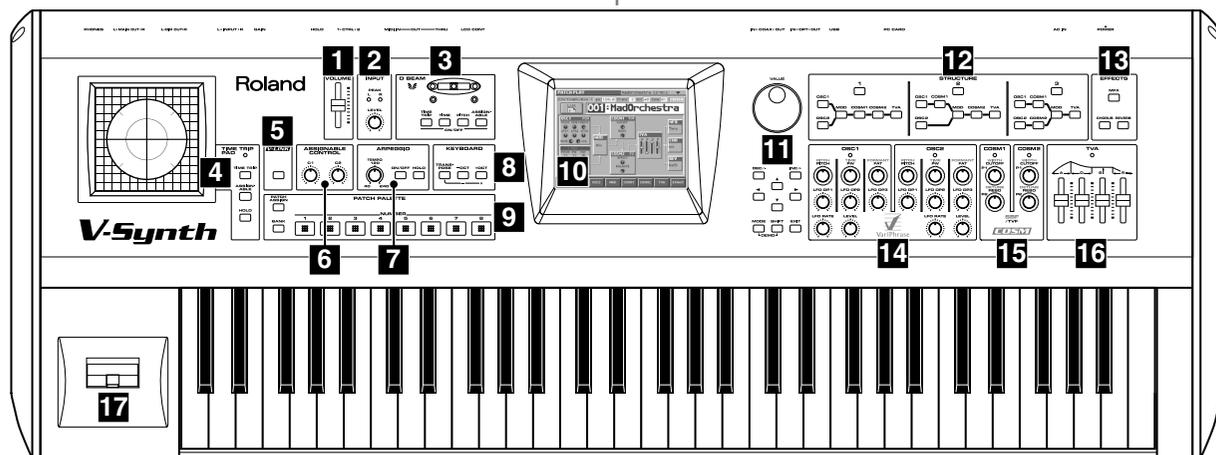
USB

If you connect the VC-2 (V-Synth)/VariOS to your computer via a USB cable, projects data on a VC-2 card can be saved (backed up) to the hard disk or other media on your computer.

Using with the V-Synth

Panel Descriptions

Front Panel



1 Volume Slider

Adjusts the overall volume that is output from the rear panel MAIN OUT jacks and PHONES jack.

2 INPUT

PEAK (Peak Indicator)

This will light when the input volume is too high.

LEVEL

Adjusts the volume of the signal input through the INPUT jacks on the rear panel.

3 D BEAM

You can apply a variety of effects to sounds simply by moving your hand.

Indicators (L, R)

If the D Beam controller is on, these will light when you move your hand over the controller.

[ON/OFF] (TIME TRIP, TIME, PITCH, ASSIGNABLE)

Switches the D Beam controller on/off. The effect to be controlled can be selected by pressing the relevant button.

TIME TRIP, TIME, PITCH: The D Beam will operate as the MIDI controller you assigned in the SYSTEM Ctrl Beam screen (p. 37).

ASSIGNABLE: The D Beam will control the parameter to which you assigned **BEAM-L** or **BEAM-R** as its controller in the corresponding Patch mode screen.

* For details, refer to the V-Synth owner's manual.

4 TIME TRIP PAD

By touching the pad surface with your finger you can apply a variety of effects to the sound.

Indicator

This will light when you touch the Time Trip Pad.

[TIME TRIP]

Switches to the Time Trip effect.

* *The Time Trip effect is available only when you're playing a patch whose patch algorithm (p. 7) is **Keyboard~**.*

[ASSIGNABLE]

Switches to the effect that is specified for each patch.

[HOLD]

Switches hold on/off for the effect controlled by the Time Trip pad.

* *For details, refer to the V-Synth owner's manual.*

5 V-LINK

When using the **VC-2**, this button turns the Talk Switch function on/off. If this is on, the output of the VC-2 (V-Synth) will stop, and the mic input will be sent through to the MAIN OUT. This is convenient when you want to use the mic connected to the VC-2 (V-Synth) to deliver monologues or make announcements on stage between songs.

* *V-LINK functionality cannot be used on the **VC-2**.*

6 ASSIGNABLE CONTROL

You can assign a variety of parameters and functions to the two knobs (C1, C2), and use them to modify the sound in realtime.

7 ARPEGGIO

Here you can control the Chord Memory on the **VC-2**.

[TEMPO]

Adjusts the tempo of the patch.

[ON/OFF]

Switches the Chord Memory on/off.

[HOLD]

Switches the Chord Memory hold on/off.

8 KEYBOARD

Here you can change the pitch range of the keyboard.

* *This operates only when [TRANSDOUBLE] is lit.*

* *This does not work with Chord Memory (p. 36).*

[TRANSDOUBLE]

Specifies transposing the keyboard in semitone steps.

Pressing this button while holding down [-OCT] or [+OCT] allows you to set the desired amount of transposition.

[-OCT], [+OCT]

These buttons adjust the pitch of the keyboard in octave steps.

9 PATCH PALETTE

Here you can register and recall your favorite patches.

[NUMBER] (1-8)

These buttons let you select/register your favorite patches.

[BANK]

You can change the Patch Palette bank by holding down this button and pressing [NUMBER] (1-8)

[PATCH ASSIGN]

If you hold down this button and press [NUMBER] (1-8), the currently selected patch (including the mic setting) will be registered as a favorite patch.

* *This is available only in the top screen (p. 14) of Patch mode.*

10 Display

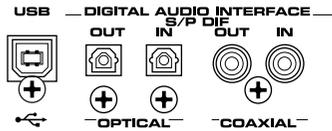
This displays information regarding the operation you are performing.

11

VALUE Dial

This is used to modify values. If you hold down [SHIFT] as you turn the VALUE dial, the value will change in greater increments.

- * Carefully insert the PC card all the way in—until it is firmly in place.
- * Never insert or pull out while the VC-2 (V-Synth) is turned on.



USB Connector

This is a USB connector. You can connect it to your personal computer to send or receive files and MIDI messages.

DIGITAL AUDIO INTERFACE Connector (OPTICAL IN/OUT, COAXIAL IN/OUT)

These connectors input/output a digital audio signal (stereo). The output signal is identical to the signal that is output from the MAIN OUT jacks.

- * The VC-2 does not use the Digital IN connector.
- * IEC60958 is a digital interface format used for consumer digital audio devices.



LCD CONTRAST Knob

Adjusts the display contrast.



MIDI Connectors (IN, OUT, THRU)

These connectors can be connected to other MIDI devices to receive and transmit MIDI messages.



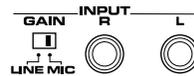
CTRL 1, CTRL 2 PEDAL Jack

You can connect optional expression pedals (EV-5, etc.) to these jacks. By assigning a desired function to a pedal,

you can use it to select or modify sound or perform various other control.

HOLD PEDAL Jack

An optional pedal switch (DP series) can be connected to this jack for use as a hold pedal.



INPUT Jacks (L, R)

An external audio source such as a CD player can be connected to these jacks for sampling or external input.

- * For the VC-2, connect your mic to the R jack.
- * When playing a patch whose patch algorithm (p. 7) is **Processor Type 1** or **Processor Type 2**, connect your external audio device to L in order to input the sound. If you connect a mic and a line-level device at the same time, use the controls of your external device to adjust the input level.

GAIN Switch

This selects the input gain of the INPUT jacks.

Set this to the "MIC" position if connecting a mic, or to the "LINE" position if connecting any other type of device.



DIRECT OUT Jacks (L, R)

The audio signal that is input via the INPUT R jack is sent from these jacks before it has been processed by the pre-effect (p. 23). At this time, the same signal is output from L and R.

MAIN OUT Jacks (L (MONO), R)

These jacks output the audio signal to the connected mixer/amplifier system in stereo. For mono output, use the L jack.

PHONES Jack

This is the jack for connecting headphones (sold separately).

Try Out the Sounds

Turning On the Power

NOTE

To prevent malfunction and/or damage to speakers or other devices, always turn down the volume, and turn off the power on all devices before making any connections.

1. **Before hooking anything up, make sure that the power on all of your gear is turned OFF.**
2. **Connect the V-Synth to your amp/speaker system.**
3. **On the V-Synth's rear panel, set the INPUT GAIN switch to MIC.**
4. **Connect your mic to the V-Synth's rear panel INPUT R jack.**

NOTE

If you're playing a patch whose patch algorithm (p. 7) is **Processor Type 1** or **Processor Type 2**, connect your external device to the V-Synth's rear panel **INPUT L** jack. If you connect a mic and a line-level device at the same time, use the controls of your external device to adjust the input level.

5. **Switch on the mic or power up the external device that you've connected to the V-Synth's rear panel INPUT jack.**
6. **After correctly inserting the VC-2 card into the PC CARD slot in the V-Synth's rear panel, switch ON the POWER switch.**

When the system has started up successfully, the top screen of Patch mode will appear. The display shows the selected Patch.

NOTE

Carefully insert the VC-2 card all the way in—until it is firmly in place.

NOTE

This unit is equipped with a protection circuit. A brief interval (a few seconds) after power up is required before the unit will operate normally.

NOTE

Always make sure to have the volume level turned down before switching on power. Even with the volume all the way down, you may still hear some sound when the power is switched on, but this is normal, and does not indicate a malfunction.

NOTE

Never insert or pull out while the VC-2 (V-Synth) is turned on.

7. **Turn on the power for any connected amplifiers or speakers.**

The Top Screen of Patch Mode

1. **Press [MODE].**

The VC-2 MODE MENU window appears.

2. **Touch <PATCH>.**

The top screen appears.

MEMO

When you power up the VC-2 (V-Synth), you will be in the top screen of Patch mode.

MEMO

The screen will depend on the patch algorithm group.

HINT

From the other screens of Patch mode, you can move to the top screen by touching <Top> at the bottom of the screen.

Parameters in the Top Screen

Common to all patch algorithms

Parameter	Value	Explanation
Tempo	20.0–250.0	Adjusts the tempo of the patch
Oct (Octave Shift)	-3– +3	Shifts the pitch of the keyboard in one-octave units. * This is linked with KEYBOARD [-OCT][+OCT] on the front panel.
Patch Algorithm	—	Opens the PATCH List window. (p. 16)
Patch Number	P001–P064, U001–U448	Changes the patch number. P indicates a preset patch , and U indicates a user patch .
Effect Chorus	0–127	Adjusts the output level of the chorus.
Effect Reverb	0–127	Adjusts the output level of the reverb.

If the patch algorithm is Modeling~

Parameter	Value	Explanation
MIC Level	0–127	Adjusts the output level of the mic to the vocoder.
Carrier Level	0–127	Adjusts the output level of the carrier to the vocoder.
Carrier Release	0–127	Adjusts the release time of the carrier (the time from when you release a key until the sound disappears).
Vocoder Formant Type	T00–T15	Selects the type of vocoder formant.
Vocoder Level	0–127	Adjusts the output level of the vocoder.
Vocoder Natural Voice	0–127	Adjusts the output level of the natural voice (your own unprocessed voice).

If the patch algorithm is Vocoder~

Parameter	Value	Explanation
MIC Level	0–127	Adjusts the output level of the mic to the vocoder.
Carrier Level	0–127	Adjusts the output level of the carrier to the vocoder.
Carrier Release	0–127	Adjusts the release time of the carrier (the time from when you release a key until the sound disappears).
Vocoder Tone	0–127	Adjusts the tone (brightness) of the vocoder.
Vocoder Level	0–127	Adjusts the output level of the vocoder.
Vocoder Natural Voice	0–127	Adjusts the output level of the natural voice (your own unprocessed voice).

If the patch algorithm is Poly PShift

Parameter	Value	Explanation
MIC Level	0–127	Adjusts the output level of the mic to the poly pitch shifter.
Poly Pitch Shifter TVA Level	0–127	Adjusts the TVA level of the poly pitch shifter.
Poly Pitch Shifter Release	0–127	Adjusts the release time of the poly pitch shifter (the time from when you release a key until the sound disappears).
Poly Pitch Shifter Formant Style	S00–S10	Selects the formant style of the poly pitch shifter.
Poly Pitch Shifter Level	0–127	Adjusts the output level of the poly pitch shifter.
Poly Pitch Shifter Natural Voice	0–127	Adjusts the output level of the natural voice (your own unprocessed voice).

If the patch algorithm is Keyboard~

Parameter	Value	Explanation
Wave Level	0–127	Adjusts the output level of the wave to the vocoder.
Carrier Level	0–127	Adjusts the output level of the carrier to the vocoder.
Carrier Release	0–127	Adjusts the release time of the carrier (the time from when you release a key until the sound disappears).
Vocoder Formant Type	T00–T15	Selects the type of vocoder formant.
Vocoder Level	0–127	Adjusts the output level of the vocoder.
Vocoder Natural Voice	0–127	Adjusts the output level of the natural voice (unprocessed sound of the wave).

If the patch algorithm is Processor Type 1



For details on how to make connections, refer to “INPUT Jacks (L, R)” (p. 13).

Parameter	Value	Explanation
MIC Level	0–127	Adjusts the output level of the mic to the vocoder.
Carrier Level	0–127	Adjusts the output level of the carrier to the vocoder.
Vocoder Formant Type	T00–T15	Selects the type of vocoder formant.
Vocoder Level	0–127	Adjusts the output level of the vocoder.
Vocoder Natural Voice	0–127	Adjusts the output level of the natural voice (your own unprocessed voice).

Try Out the Sounds

If the patch algorithm is Processor Type 2



For details on how to make connections, refer to “**INPUT Jacks (L, R)**” (p. 13).

Parameter	Value	Explanation
MIC Level	0–127	Adjusts the output level of the mic to the vocoder.
Carrier Level	0–127	Adjusts the output level of the carrier to the vocoder.
Vocoder Tone	0–127	Adjusts the tone (brightness) of the vocoder.
Vocoder Level	0–127	Adjusts the output level of the vocoder.
Vocoder Natural Voice	0–127	Adjusts the output level of the natural voice (your own unprocessed voice).

Selecting a Patch

Selecting Patches with the VALUE dial

1. Access the top screen of Patch mode. (p. 14)
2. Touch the patch number indication to highlight it.
3. Turn the VALUE dial or press [INC/+], [DEC/-].



You can switch more rapidly by holding down [SHIFT] while you perform these operations.

Selecting Patches from the List

You can easily find the desired patch by selecting it from the patch list.

1. Access the top screen of Patch mode. (p. 14)
2. Touch the patch algorithm indication located in the upper left of the screen. Alternatively, touch <▼MENU> in the upper right of the screen and then touch <PATCH List> in the pull-down menu.

The PATCH List window appears.

3. Select a patch from the list.

Either turn the VALUE dial or use [INC/+], [DEC/-] to

select a patch. You can also select a patch by touching it on the display.

The on-screen keys have the following functions.

<P001–U192>: Change the buttons at both edges of the screen to P001–U192.

<U193–U448>: Change the buttons at both edges of the screen to U193–U448.

<Algorithm>: Change the buttons at both edges of the screen to Patch Algorithm (p. 7).

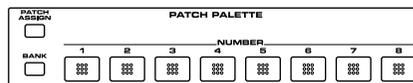
<<<>: Return to the preceding screen page.

<>>>: Advance to the next screen page.

4. Touch <OK> to select the patch.

Selecting Patches with Patch Palette

You can select patches of currently selected Patch Bank instantly by simply pressing NUMBER [1]–[8].



1. Access the top screen of Patch mode. (p. 14)
2. Press NUMBER [1]–[8] to select a patch. To switch between patch palette banks, hold down [BANK] and press NUMBER [1]–[8].

Playing

1. Access the top screen of Patch mode. (p. 14)
2. Select a patch.
3. While you speak or sing into the mic, turn the front panel INPUT LEVEL knob to adjust the volume of the input from the rear panel INPUT jack.

Adjust the volume so that the PEAK indicator does not light.

HINT

If you want to make more detailed settings, touch <Mic Setting> at the bottom of the screen to access the SYSTEM MIC Setting screen (p. 22).

4. Speak or sing into the mic while you play the keyboard.

NOTE

If you're playing a patch whose patch algorithm (p. 7) is **Processor Type 1** or **Processor Type 2**, you won't hear the patch unless you input sound from an external device connected to the rear panel **INPUT L** in addition to the mic input. If you connect a mic and a line-level device at the same time, use the controls of your external device to adjust the input level.

MEMO

If you're playing a patch whose patch algorithm (p. 7) is **Keyboard~**, you don't need to speak or sing into the mic; the patch will produce sound when you simply play the keyboard.

Enabling or Disabling the Beep Tone

You can specify whether or not a beep tone will be heard when you touch a valid point on the touch screen. At the factory setting, the beep tone will be sounded.

1. In the upper right of the screen, touch <▼MENU>.

A pulldown menu appears.

2. In the pulldown menu, touch <Beep> to add a check mark (✓).

With this setting, the beep tone will be heard. If you perform the same procedure once again, the check mark will be cleared and the beep tone will no longer be heard.

Creating/Editing Patches (Patch Mode)

Creating Patches

On the VC-2, you don't need to create patches from scratch, you can start with an existing patch; i.e., by selecting a patch algorithm.

1. Decide on the algorithm (p. 7) for the patch you want to create.
2. Choose an existing patch that uses that algorithm.
3. Assign a new name to that patch, and save it at a different patch number (p. 20).
4. Edit the patch you copied.

Basic Procedure for Patch Editing

1. Press [MODE].
The VC-2 MODE MENU window appears.
2. Touch <PATCH>.
The top screen appears.

MEMO

When you power up the VC-2 (V-Synth), you will be in the top screen of Patch mode.

3. Select the patch you want to edit.
4. Touch one of the buttons at the bottom of the screen to select the edit group containing the parameters you want to set.
The parameters are organized into several editing groups.
5. Touch one of the tabs in the left of the screen to select the desired editing screen.
6. In each editing screen, touch the touch screen to set the parameters.

7. When editing a parameter that requires you to specify a value, move the cursor to the value box of that parameter. Then modify the value by either turning the VALUE dial or pressing [INC/+] or [DEC/-]. You can also modify a value by dragging over the touch screen.
8. Repeat steps 4–7 to make the settings for the System function.

Changing the Pitch (PATCH Tune)

NOTE

Patches whose patch algorithm is **Processor~** do not have this menu.

1. Touch <▼MENU> in the upper right of the screen.
A pulldown menu appears.
2. In the pulldown menu, touch <PATCH Tune>.
The PATCH Tune screen appears.
3. Edit the parameter values.

Parameter	Value	Explanation
Coarse (Patch Coarse Tune)	-48– +48	Adjusts the pitch of the patch's sound up or down in semitone steps (+/-4 octaves).
Fine (Patch Fine Tune)	-50– +50	Adjusts the pitch of the patch's sound up or down in 1-cent steps (+/-50 cents). * One-cent is 1/100th of a semitone.
Scale Tune (Scale Tune Switch)	OFF, ON	Turn this on when you wish to use a tuning scale other than equal temperament. The VC-2 allows you to play the keyboard using temperaments other than equal temperament. The pitch is specified in one-cent units relative to the equal tempered pitch.
C-B (Patch Scale Tune)	-100– +100	Make scale tune settings.

4. Touch <Exit> to exit the screen.

Equal Temperament

This tuning divides the octave into 12 equal parts, and is the most widely used method of temperament used in Western music. The V-Synth employs equal temperament when the Scale Tune Switch is set to "OFF."

Just Temperament (Tonic of C)

Compared with equal temperament, the principle triads sound pure in this tuning. However, this effect is achieved only in one key, and the triads will become ambiguous if you transpose.

Arabian Scale

In this scale, E and B are a quarter note lower and C#, F# and G# are a quarter-note higher compared to equal temperament. The intervals between G and B, C and E, F and G#, Bb and C#, and Eb and F# have a natural third-the interval between a major third and a minor third. On the V-Synth, you can use Arabian temperament in the three keys of G, C and F.

<Example>

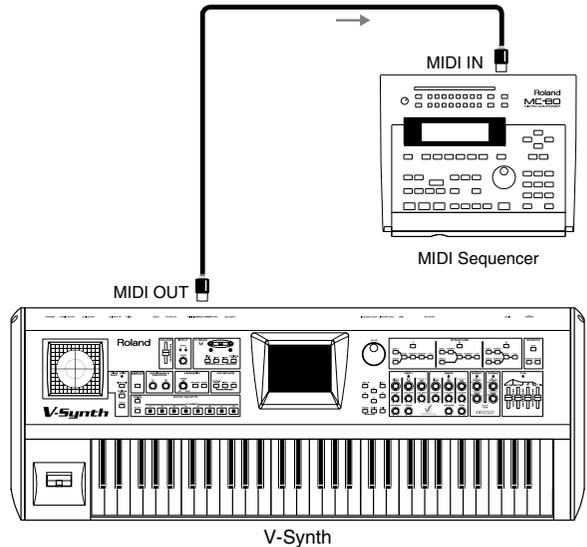
Note name	Equal temperament	Just Temperament (tonic C)	Arabian Scale
C	0	0	-6
C#	0	-8	+45
D	0	+4	-2
Eb	0	+16	-12
E	0	-14	-51
F	0	-2	-8
F#	0	-10	+43
G	0	+2	-4
G#	0	+14	+47
A	0	-16	0
Bb	0	+14	-10
B	0	-12	-49

Transmitting Data to an External MIDI Device (Data Transfer)

Patch, setup and system settings will be transmitted to an external MIDI device. This operation is called **bulk dump**. Use this operation when you want to connect another VC-2 (V-Synth) and play it using the same settings, or to save your data on an external MIDI device as a precaution against possible

loss of sound data or system settings.

To transmit data to an external MIDI device, connect the external MIDI device and V-Synth as shown in the diagram.



1. Touch <▼MENU> in the upper right of the screen.

A pulldown menu appears.

2. In the pulldown menu, touch <Data Transfer>.

The Data Transfer window appears.

3. In "Source," select the type of data that you want to transmit.

<ALL>: Patch, setup, mic setting, system

<SETUP+MIC Sets>: Setup and mic setting

<SYSTEM>: System

<PATCH>: Patch

If you selected <PATCH>, specify the patch that is to be sent.

<WORK>: Transmit user patches.

Use the "FROM" - "TO" fields to specify the range of patch numbers (U001-U448) that will be transmit.

<TEMP>: Transmit patch from the temporary area.

4. Set the external MIDI device so that it will be ready to receive data, and touch <Execute> to execute data transmission.

While the data is being transmitted, the display will

Creating/Editing Patches (Patch Mode)

indicate “Transmitting...” When “COMPLETED!” is displayed, the transmission has been completed.

HINT

To halt during transmission, touch <ABORT>.

Naming a Patch (PATCH Name)

Before you save the patch, here’s how to give it a new name.

1. **Make sure that the patch that you want to name is selected.**

2. **Touch <▼MENU> in the upper right of the screen.**

A pulldown menu appears.

3. **In the pulldown menu, touch <PATCH Name>.**

The PATCH Name window appears.

4. **Touch the on-screen alphabetic or numeric keys to enter the new name in the text box.**

The on-screen keys have the following functions.

<←><→>: Move the cursor in the text box to the desired input location.

<SHIFT>: Turn this on when you want to input uppercase letters or symbols.

<Insert>: Turn this on when you want to insert a character at the cursor location.

<Clear>: Erases all characters in the text box.

<Delete>: Deletes the character at the cursor location.

<Back>: Deletes the character that precedes the cursor location.

HINT

You can also move the input location cursor by pressing the [◀] [▶] cursor buttons. Pressing [▲] will change the character at the cursor location to uppercase, and pressing [▼] will change it to lowercase.

5. **When you have finished inputting, touch <OK> to finalize the patch name.**

Saving Patches (PATCH Write)

Changes you make to sound settings are temporary, and will be lost if you turn off the power or select another sound. If you want to keep the modified sound, you must save it in the VC-2 card.

If you edit a patch, the message “EDITED” appears in the upper left of the screen. Once you save the patch into VC-2 card, the “EDITED” indication goes away.

NOTE

When you perform the save procedure, the data that previously occupied the save destination will be lost.

1. **Make sure that the patch you wish to save is selected.**

2. **Touch <▼MENU> in the upper right of the screen.**

A pulldown menu appears.

3. **In the pulldown menu, touch <PATCH Write>.**

The PATCH Write window appears.

4. **Turn the VALUE dial to specify the save-destination patch.**

You can touch <ReName> and rename the save-source patch.

By touching <Compare> you can check the save-destination patch (Compare function).

5. **Touch <Execute> to execute the Save operation.**

Auditioning the Save-Destination Patch (Compare)

Before you save a patch, you can audition the patch which currently occupies the save destination to make sure that it is one you don’t mind overwriting. This can help prevent important patches from being accidentally overwritten and lost.

1. **Follow the procedure in “Saving Patches (PATCH Write)” through step 4 to select the save destination.**

2. **Touch <Compare> to turn it on.**

Now you can play the patch that is in the currently selected save destination.

3. Play the save-destination patch to make sure that it's one you don't mind overwriting.

NOTE

The patch auditioned using the Compare function may sound slightly different than when it is played normally.

4. If you wish to change the save destination, re-specify the save-destination patch by using the VALUE dial.
5. Touch <Execute> to execute the Save operation.

Copying Patch Controller Settings (Patch Controller Copy)

1. Make sure that you've selected the patch with the controller settings you want to copy.
2. Touch <▼MENU> in the upper right of the screen.
A pulldown menu appears.
3. In the pulldown menu, touch <PATCH Ctrl>.
The Patch Controller Copy window appears.
4. Turn the VALUE dial to select the copy destination.

If you select the same user patch for both FROM and TO of the Destination, only that patch will be copied.

If you select different user patches for FROM and TO of the Destination, the patches in that range will be copied.

NOTE

The copy operation will not be carried out if the copy-destination patch is "INIT PATCH."

MEMO

The controller settings shown in the Source field will be copied. This will depend on the patch algorithm. If the patches in the Source field and Destination field use different algorithms, only the settings they have in common will be copied.

5. Touch <Execute> to execute the Copy operation.

Deleting Patches (PATCH Delete)

1. Make sure that the patch you wish to delete is selected.
2. Touch <▼MENU> in the upper right of the screen.
A pulldown menu appears.
3. In the pulldown menu, touch <PATCH Delete>.
The PATCH Delete List window appears.
4. From the list, select the patch that you want to delete.

Either turn the VALUE dial or use [INC/+][DEC/-] to select a patch. You can also select a patch by touching it on the display.

The on-screen keys have the following functions.

<P001-U192>: Change the buttons at both edges of the screen to P001-U192.

<U193-U448>: Change the buttons at both edges of the screen to U193-U448.

<Algorithm>: Change the buttons at both edges of the screen to Patch Algorithm.

<<<>: Return to the preceding screen page.

<>>>: Advance to the next screen page.

5. Touch <Execute> to execute the Delete operation.

NOTE

You can't delete preset patches.

Selecting a Patch from a List (PATCH List)

HINT

You can also access the PATCH List window from the top screen of Patch mode by touching the patch algorithm in the upper left of the screen.

Creating/Editing Patches (Patch Mode)

1. Touch **<▼MENU>** in the upper right of the screen.

A pull-down menu appears.

2. In the pull-down menu, touch **<PATCH List>**.

The PATCH List window appears.

3. Select a patch from the list.

Either turn the **VALUE dial** or use **[INC/+][DEC/-]** to select a patch. You can also select a patch by touching it on the display.

The on-screen keys have the following functions.

<P001-U192>: Change the buttons at both edges of the screen to P001-U192.

<U193-U448>: Change the buttons at both edges of the screen to U193-U448.

<Algorithm>: Change the buttons at both edges of the screen to Patch Algorithm.

<<<>: Return to the preceding screen page.

<>>>: Advance to the next screen page.

4. Touch **<OK>** to select a patch.

Top Screen

You can go to the top screen by touching **<Top>** in the lower part of the screen.



For details, refer to “**The Top Screen of Patch Mode**” (p. 14).

SYSTEM MIC Setting Screen

You can go to the top screen by touching **<Mic Setting>** in the lower part of the screen.



Patches whose patch algorithm is **Keyboard~** do not have this screen.

Switching the Mic Setting

The VC-2 can store eight mic settings.

In the upper right of the screen, touch **<▼MENU>** to access the pull-down menu, and choose one of the eight templates.



Note that when you change the parameter values, the mic settings will also change (and be saved automatically).

Naming a Mic Setting (Setting Name)

You can assign a new name to a mic setting.

1. Touch **<▼MENU>** in the upper right of the screen.

A pull-down menu appears.

2. In the pull-down menu, touch **<Setting Name>**.

The MIC Setting Name screen appears.

3. Touch the on-screen alphabetic or numeric keys to enter the new name in the text box.

The on-screen keys have the following functions.

<<-><->>: Move the cursor in the text box to the desired input location.

<SHIFT>: Turn this on when you want to input uppercase letters or symbols.

<Insert>: Turn this on when you want to insert a character at the cursor location.

<Clear>: Erases all characters in the text box.

<Delete>: Deletes the character at the cursor location.

<Back>: Deletes the character that precedes the cursor location.



You can also move the input location cursor by pressing the **[◀][▶]** cursor buttons. Pressing **[▲]** will change the character at the cursor location to uppercase, and pressing **[▼]** will change it to lowercase.

4. When you have finished inputting, touch **<OK>** to finalize the mic setting name.

PRE-EFX Type (Pre-Effect Types)

There are three pre-effects: compressor, limiter, and noise suppressor. By using these you can adjust the level of the sound being sampled.

Noise suppressor: This effect leaves the original sound untouched, but mutes the noise that is heard during periods of silence.

Compressor: By reducing high levels and raising low levels, this effect smoothes out unevenness in volume.

Limiter: By compressing sounds that exceed a specified volume level, this effect prevents the sound from distorting.

OFF

No pre-effect will be used.

EQ LOW/MID/HIGH (Three-band equalizer)

Parameter		Value	Explanation
EQ LOW	Freq	50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000 Hz	Selects the frequency of the low range.
	Gain	-15- +15 dB	Adjusts the gain of the low frequency. Positive (+) settings will emphasize the low-frequency range.
EQ MID	Freq	50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 16000, 20000 Hz	Selects the frequency of the middle range.
	Q	0.3, 0.4, 0.6, 0.8, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 5.0, 6.0, 7.0, 8.0, 10.0, 12.0, 14.0, 16.0, 18.0, 20.0	Adjusts the width of the middle range. Set a higher value for Q to narrow the range to be affected.
	Gain	-15- +15 dB	Adjusts the gain of the middle range. Positive (+) settings will emphasize the middle range.
EQ HIGH	Freq	2000, 4000, 5000, 6300, 8000, 10000, 12500, 16000, 20000 Hz	Selects the frequency of the high range.
	Gain	-15- +15 dB	Adjusts the gain of the high frequency. Positive (+) settings will emphasize the high-frequency range.

Parameter	Value	Explanation
MIC LEVEL	0-127	Adjusts the volume of the mic. * This is linked with MIC Level in the top screen.

NS-COMP

Compressor and noise suppressor settings can be made.



For the parameters of the three-band equalizer, refer to the explanation of **OFF**.

NOISE SUPPRESSOR

Parameter	Value	Explanation
Thres (Threshold Level)	-60-0 dB	Specifies the level at which the noise suppressor will begin to operate. When the signal falls below the specified level, it will be muted.
Release (Release Time)	0-127	Specifies the time from when the noise suppressor begins to operate until the volume reaches 0.

COMPRESSOR

Parameter	Value	Explanation
Gain	0-127	Adjusts the output gain.
Attack (Attack Time)	0-127	Specifies the attack time of the input sound.
Release (Release Time)	0-127	Specifies the time from when the compressor begins to operate until the volume reaches 0.
Level (Output Level)	0-127	Adjusts the volume of the mic. * This is linked with MIC Level in the top screen.

NS-LIMIT

Limiter and noise suppressor settings can be made.



For the parameters of the three-band equalizer, refer to the explanation of **OFF**.



For the parameters of the noise suppressor, refer to the explanation of **NS-COMP**.

Creating/Editing Patches (Patch Mode)

LIMITER

Parameter	Value	Explanation
Thres (Threshold Level)	-40–0 dB	Specifies the level (threshold level) at which the limiter will begin to function.
Attack (Attack Time)	0–127	Specifies the time from when the input level exceeds the threshold level until the limiter begins to operate.
Release (Release Time)	0–127	Specifies the time from when the input level drops below the threshold level until the limiter turns off.
Ratio	2:1–INF:1	Specifies the compression ratio.
Level (Output Level)	0–127	Adjusts the volume of the mic. * This is linked with MIC Level in the top screen.

NOISE SUP

Noise suppressor settings can be made.



For the parameters of the three-band equalizer, refer to the explanation of **OFF** (p. 23).

NOISE SUPPRESSOR

Parameter	Value	Explanation
Thres (Threshold Level)	-60–0 dB	Specifies the level at which the noise suppressor will begin to operate. When the signal falls below the specified level, it will be muted.
Release (Release Time)	0–127	Specifies the time from when the noise suppressor begins to operate until the volume reaches 0.
Level (Output Level)	0–127	Adjusts the volume of the mic. * This is linked with MIC Level in the top screen.

Carrier Screen

You can go to the top screen by touching <Carrier> in the lower part of the screen.



Patches whose patch algorithm is **Poly PShift** do not have this screen.



The carrier screen will be different if the patch algorithm is **Processor~**. Refer to “Carrier Screen for Processor~ Patch Algorithms” (p. 27).

OSC

OSC 1/OSC 2

The following parameters will be displayed if the oscillator type is **Analog**.

Parameter	Value	Explanation
Wave	—	Selects the wave. * The available waves will depend on the patch algorithm.
Level	0–127	Adjusts the output volume.
Pan	L64–0–63R	Specifies the pan of the patch. “L64” is far left, “0” is center, and “63R” is far right.
Pulse Width	-63–+63	Specifies the amount by which the wave shape will be modified.
SubOSC	OFF, -2, -1, 0	The same wave will be layered. OFF : No sound. -2 : The second wave will sound two octaves below. -1 : The second wave will sound one octave below. 0 : The second wave will sound at the same pitch.
SubLvl	0–127	Specifies the output volume of the second wave.
Detune	-63–+63	Specifies the amount of detuning for the second wave.

The following parameters will be displayed if the oscillator type is **PCM**.

Parameter	Value	Explanation
Wave	—	Selects the wave. * The available waves will depend on the patch algorithm.
Level	0–127	Adjusts the output volume.
Pan	L64–0–63R	Specifies the pan of the patch. “L64” is far left, “0” is center, and “63R” is far right.
Offset	0–15	Adjusts the precise point at which the wave is to begin sounding.

PITCH

OSC1 PITCH

Parameter	Value	Explanation
OctShift (Octave Shift)	-4- +4	Adjusts the pitch of the OSC1's sound up or down in units of an octave (+/-4 octaves).

OSC2 PITCH

Parameter	Value	Explanation
Coarse (Coarse Tune)	-48- +48	Adjusts the pitch of the oscillator up or down in semitone steps (+/-4 octaves).
Fine (Fine Tune)	-50- +50	Adjusts the pitch of the oscillator up or down in 1-cent steps (+/-50 cents).
PitchKF (Pitch Key Follow)	-200- +200	This specifies the amount of pitch change that will occur when you play a key one octave higher (i.e., 12 keys upward on the keyboard). If you want the pitch to rise one octave as on a conventional keyboard, set this to "+100." If you want the pitch to rise two octaves, set this to "+200." Conversely, set this to a negative value if you want the pitch to fall. With a setting of "0," all keys will produce the same pitch.

GLIDE

Parameter	Value	Explanation
Time	0-127	Specifies the time over which the pitch is to change.
OSC1/2 Depth	-63- +63	Specifies the amount of pitch change that is to occur.

VIBRATO

Parameter	Value	Explanation
Type	NORMAL, FEMALE1, FEMALE2, MALE	Selects the type of vibrato.
Rate	0-127	Adjusts the vibrato speed.
OSC1/2 Depth	-63- +63	Adjusts the depth of the vibrato applied to OSC1 or OSC2.
OSC1/2 ModDepth	-63- +63	Adjusts the depth of the vibrato that is applied to OSC1 or OSC2 by the controller assigned by Controller (p. 29).

EQ GROWL

EQUALIZER

Mid 1/Mid 2

Parameter	Value	Explanation
Freq	50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 16000, 20000 Hz	Selects the frequency of the middle range.
Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Adjusts the width of the middle range. Set a higher value for Q to narrow the range to be affected.
Gain	-15- +15 dB	Adjusts the gain of the middle range. Positive (+) settings will emphasize the middle range.

GROWL

Parameter	Value	Explanation
GrowlSw	OFF, ON	Switches growl on/off.
Intensity	0-127	Adjusts the intensity of modulation.
ModDepth	-63- +63	Adjusts the intensity of modulation by the controller assigned by Controller (p. 29).
Speed	0-127	Adjusts the speed of modulation.
ModDepth	-63- +63	Adjusts the speed of modulation by the controller assigned by Controller (p. 29).

TVA

Level

Parameter	Value	Explanation
Level	0-127	Specifies the volume of the patch.
LevelKF (Level Key Follow)	-200- +200	Use this parameter if you want the volume of the patch to change according to the key that is pressed. Relative to the volume at the C5 key (center C), positive (+) settings will cause the volume to rise for notes higher than C5, and negative (-) settings will cause the volume to fall for notes higher than C4. Larger settings will produce greater change.

Creating/Editing Patches (Patch Mode)

Parameter	Value	Explanation
VeloSens	-63– +63	Keyboard playing dynamics can be used to control the volume of the patch. If you want the volume to have more effect for strongly played notes, set this parameter to a positive (+) value. If you want the volume to have less effect for strongly played notes, set this to a negative (-) value.
LevelMod-Depth	-63– +63	Adjusts the volume of the patch by the controller assigned by Controller (p. 29).

Pan

Parameter	Value	Explanation
Pan	L64– 0–63R	Specifies the pan of the patch. “L64” is far left, “0” is center, and “63R” is far right.
PanKF (Pan Key Follow)	-200– +200	Use this parameter if you want key position to affect panning. Positive (+) settings will cause notes higher than C5 key (center C) to be panned increasingly further toward the right, and negative (-) settings will cause notes higher than C5 key (center C) to be panned toward the left. Larger settings will produce greater change.
PanMod-Depth	-63– +63	Adjusts the pan of the patch by the controller assigned by Controller (p. 29).

Attack

Parameter	Value	Explanation
Time	0–127	Specifies the attack time of the envelope (the time from when you press a key until the envelope level reaches the maximum value).
VeloSens	-63– +63	This allows keyboard dynamics to affect the attack time of the envelope. If you want attack time to be speeded up for strongly played notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value.

Release

Parameter	Value	Explanation
Time	0–127	Specifies the release time of the envelope (the time from when you release a key until the envelope level reaches 0).

CTRL

KEY ASSIGN

Parameter	Value	Explanation
Mono/ Poly	MONO, POLY	Specifies whether the patch will play monophonically or polyphonically. The monophonic setting is effective when playing a solo instrument patch such as sax or flute. MONO: Only the last-played note will sound. POLY: Two or more notes can be played simultaneously.
LegatoSw	OFF, ON	Legato is valid when the Mono/Poly parameter is set to monophonic. This setting specifies whether the Legato function will be used (ON) or not (OFF). With the Legato Switch parameter “ON,” pressing a key while continuing to press a previous key causes the note to change pitch to the pitch of the most recently pressed key, sounding all the while. This creates a smooth transition between notes, which is effective when you wish to simulate the hammering-on and pulling-off techniques used by a guitarist.

PORTAMENTO

Portamento is an effect which smoothly changes the pitch from the first-played key to the next-played key. By applying portamento when the Mono/Poly parameter is monophonic, you can simulate slide performance techniques on a violin or similar instrument.

Parameter	Value	Explanation
PortaSw	OFF, ON	Specifies whether portamento will be applied (ON) or not (OFF).
Mode	NORMAL, LEGATO	Specifies the performance conditions for which portamento will be applied. NORMAL: Portamento will always be applied. LEGATO: Portamento will be applied only when you play legato (i.e., when you press the next key before releasing the previous key).
Type	RATE, TIME	Specifies the type of portamento effect. RATE: The time it takes will depend on the distance between the two pitches. TIME: The time it takes will be constant, regardless of how far apart in pitch the notes are.

Parameter	Value	Explanation
Time	0–127	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.

BENDER

Parameter	Value	Explanation
Range	0–48	Specifies the degree of pitch change in semitones when the Pitch Bend lever is all the way left/right. For example if this is set to “48” and you move the pitch bend lever all the way to the left, the pitch will fall 4 octaves. If this parameter is set to “12,” the pitch will rise one octave when the pitch bend lever is moved to the right-most position.

Carrier Screen for Processor~ Patch Algorithms

TVA

Level

Parameter	Value	Explanation
Level	0–127	Specifies the volume of the patch.
ModDepth	-63–+63	Adjusts the volume of the patch by the controller assigned by Controller (p. 29).

Pan

Parameter	Value	Explanation
Pan	L64–0–63R	Specifies the pan of the patch. “L64” is far left, “0” is center, and “63R” is far right.
ModDepth	-63–+63	Adjusts the pan of the patch by the controller assigned by Controller (p. 29).

Wave Screen

In the case of a patch whose patch algorithm is **Keyboard~**, you can access the Wave screen by touching **<Wave>** in the lower part of the screen.

OSC

WAVE

Parameter	Value	Explanation
Wave	—	Selects a preset or imported wave.
Tempo Sync	OFF, ON	Specifies whether the wave will be sounded in sync with the tempo clock (ON) or not (OFF).
Key Mode	NORMAL, ALWAYS	NORMAL: Begin sounding when you press a key, and stop sounding when you release the key. ALWAYS: Begin sounding when you first press a key, and continue sounding.

VARI

Parameter	Value	Explanation
Pitch	-63–+63	Adjusts the pitch.
ModDepth	-63–+63	Adjust the pitch using the controller assigned by Controller (p. 29).
Time	-63–+63	This sets the range of change in playback speed (time).
ModDepth	-63–+63	Adjust the range of change in playback speed using the controller assigned by Controller (p. 29).
Formant	-63–+63	This sets the range of change in vocal quality (formant).
ModDepth	-63–+63	Adjust the range of change in vocal quality using the controller assigned by Controller (p. 29).

TVA

Parameter	Value	Explanation
Level	0–127	Specifies the volume of the wave.
ModDepth	-63–+63	Adjust the volume of the wave using the controller assigned by Controller (p. 29).

Vocoder Screen

You can go to the top screen by touching <Vocoder> in the lower part of the screen.



Patches whose patch algorithm is **Poly PShift** do not have this screen.

VOCODER

Parameter	Value	Explanation
Level	0-127	Adjusts the output level of the vocoder.
Atk	0-100	Adjusts the attack time of the vocoder. * This parameter is not available if the patch algorithm is Vocoder~ or Processor Type 2 .
Rel	0-100	Specifies the time from when the vocoder begins to operate until the volume reaches 0. * This parameter is not available if the patch algorithm is Vocoder~ or Processor Type 2 .
LevelMod-Depth	-63-+63	Adjust the output level of the vocoder using the controller assigned by Controller (p. 29).

NATURAL VOICE

Parameter	Value	Explanation
Level	0-127	Specifies the output level of the natural voice (your unprocessed voice, or the original sound of the wave for Keyboard~ patch algorithms).
RevSend	0-127	Adjusts the reverb send level.
LevelMod-Depth	-63-+63	Adjust the output level of the natural voice using the controller assigned by Controller (p. 29).

UNVOICE

* This parameter is not available if the patch algorithm is **Vocoder~** or **Processor Type 2**.

Parameter	Value	Explanation
Level	0-127	Specifies the amount of the detected unvoiced consonants that will be mixed into the output of the vocoder.
Detect	1-50	Adjusts the sensitivity at which unvoiced consonants are detected.

Formant

* This parameter is not available if the patch algorithm is **Vocoder~** or **Processor Type 2**.

Parameter	Value	Explanation
Type	00: FLAT- 15: STFEM2	Selects the type of formant.

STONE

* This parameter is not available if the patch algorithm is **Vocoder~** or **Processor Type 2**.

Parameter	Value	Explanation
Tone	0-127	Adjusts the brightness of the sound.

Hold Dump

Parameter	Value	Explanation
Time	0-127	Specifies the time from when the hold pedal is pressed to fix the tonal character from INPUT until that sound disappears.

AutoNoteSw

* This parameter is not available if the patch algorithm is **Keyboard~** or **Processor~**.

If this is on, the pitch from the mic input will be detected, allowing you to play the VC-2 without having to play the keyboard (i.e., without inputting note data).

Poly Pitch Shifter Screen

In the case of a patch whose patch algorithm is **Poly PShift**, you can access the Wave screen by touching <Poly Pitch Shifter> in the lower part of the screen.

OSC

OSC 1/OSC 2

Parameter	Value	Explanation
Formant Style	00: FLAT- 10: IMPROV	Selects the style of vocal character (formant).
Formant	-63- +63	Adjusts the width of formant change.
Level	0-127	Adjusts the output volume.
Pan	L64-0-63R	Specifies the pan of the patch. "L64" is far left, "0" is center, and "63R" is far right.

Parameter	Value	Explanation
FmtKF	-200– +200	Specifies the amount by which the formant value will be affected by the key you play.
OSC 2 switch	OFF, ON	Switches OSC2 on/off.

POLY PITCH SHIFTER

Parameter	Value	Explanation
Level	0–127	Adjusts the output level of the poly pitch shifter.
ModDepth	-63– +63	Adjust the output level of the poly pitch shifter using the controller assigned by Controller (p. 29).

NATURAL VOICE

Parameter	Value	Explanation
Level	0–127	Adjusts the output level of the natural voice (your own unprocessed voice).
RevSend	0–127	Adjusts the reverb send level.
ModDepth	-63– +63	Adjust the output level of the natural voice using the controller assigned by Controller (p. 29).

UNVOICE

Parameter	Value	Explanation
Level	0–127	Specifies the amount of the detected unvoiced consonants that will be mixed into the output of the vocoder.
Detect	1–50	Adjusts the sensitivity at which unvoiced consonants are detected.

PITCH / EQ GROWL / TVA / CTRL



Refer to **PITCH** (p. 25), **EQ GROWL** (p. 25), **TVA** (p. 25), and **CTRL** (p. 26) in the “Carrier Screen.”

AutoNoteSw

If this is on, the pitch from the mic input will be detected, allowing you to play the VC-2 without having to play the keyboard (i.e., without inputting note data).

Controller

Select the controller used by **ModDepth** or **~ModDepth**.

OFF: Control will not be used.

CC01–31, 33–95: Controller numbers 1–31, 33–95

BEND: Pitch Bend, **AFT**: Aftertouch

+PAD-X: The center of the time trip pad is 0; toward the right is +, and toward the left is -

+PAD-Y: The center of the time trip pad is 0; upward is +, and downward is -

PAD-X: The left edge of the time trip pad is 0; toward the right is +

PAD-Y: The bottom edge of the time trip pad is 0; upward is +

* **+PAD-X, +PAD-Y, PAD-X, and PAD-Y** will function when the front panel **TIME TRIP PAD [ASSIGNABLE]** indicator is lit.

TRIP-R: The outer edge of the time trip pad is 0; toward the center is +

* **TRIP-R** functions only when the front panel **TIME TRIP PAD [TIME TRIP]** indicator is lit.

BEAM-L: D Beam controller (left)

BEAM-R: D Beam controller (right)

* **BEAM-L/R** functions only when the front panel **D BEAM [ASSIGNABLE]** indicator is lit.

Knob1: C1 knob, **Knob2**: C2 knob

VELO: Velocity, **KEYF**: Key Follow

* **VELO** and **KEYF** do not exist in the wave screen Controller or for patches whose patch algorithm is **Processor~**.

BREATH: Volume of the mic input

Effect Screen

You can go to the top screen by touching <Effect> in the lower part of the screen.

Routing

MFX (MFX On/Off Switch)

Switches MFX on and off.

Value:  (OFF),  (ON)



This is linked with the front panel EFFECTS [MFX].

MFX Type

Use this parameter to select from among the 41 available MFX. For details on MFX parameters, refer to “MFX Parameters” (p. 70).

Value: 00 (Thru)–41

MFX Master Level

Adjusts the volume of the sound that has passed through the MFX.

Value: 0–127

MFX To CHO (MFX Chorus Send Level)

Adjusts the amount of chorus for the sound that passes through MFX. If you don't want to add the Chorus effect, set it to “0.”

Value: 0–127

MFX To REV (MFX Reverb Send Level)

Adjusts the amount of reverb for the sound that passes through MFX. If you don't want to add the Reverb effect, set it to “0.”

Value: 0–127

CHO (Chorus On/Off Switch)

Switches chorus on and off.

Value:  (OFF),  (ON)



This is linked with the front panel EFFECTS [CHORUS].

CHO Type (Chorus Type)

Use this parameter to select from among the 8 available chorus. For details on chorus parameters, refer to “Chorus Parameters” (p. 88).

Value: 00 (Off)–08

CHO Master Level (Chorus Master Level)

Adjusts the volume of the sound that has passed through chorus.

Value: 0–127

CHO To REV (Chorus Reverb Send Level)

Adjusts the amount of reverb for the sound that passes through chorus. If you don't want to add the Reverb effect, set it to “0.”

Value: 0–127

REV (Reverb On/Off Switch)

Switches reverb on and off.

Value:  (OFF),  (ON)



This is linked with the front panel EFFECTS [REVERB].

REV Type (Reverb Type)

Use this parameter to select from among the 14 available reverb. For details on reverb parameters, refer to “Reverb Parameters” (p. 89).

Value: 00 (Off)–14

REV Master Level (Reverb Master Level)

Adjusts the volume of the sound that has passed through reverb.

Value: 0–127

MFX

MFX Type

Use this parameter to select from among the 41 available MFX. For details on MFX parameters, refer to “**MFX Parameters**” (p. 70).

Value: 00 (Thru)–41

In this setting screen, you can edit the parameters of the MFX that is selected by the MFX Type setting. For details on the parameters that can be edited, refer to “**MFX Parameters**” (p. 70).



When you touch <List>, the MFX List window will appear, allowing you to select the MFX from the list.

MFX (MFX On/Off Switch)

Switches MFX on and off.

Value: (OFF), (ON)



This is linked with the front panel EFFECTS [MFX].

CHO

CHO Type (Chorus Type)

Use this parameter to select from among the 8 available chorus. For details on chorus parameters, refer to “**Chorus Parameters**” (p. 88).

Value: 00 (Off)–08

In this setting screen, you can edit the parameters of the chorus that is selected by the CHO Type setting. For details on the parameters that can be edited, refer to “**Chorus Parameters**” (p. 88).



When you touch <List>, the Chorus List window will appear, allowing you to select the chorus from the list.

CHO (Chorus On/Off Switch)

Switches chorus on and off.

Value: (OFF), (ON)



This is linked with the front panel EFFECTS [CHORUS].

REV

REV Type (Reverb Type)

Use this parameter to select from among the 14 available reverb. For details on reverb parameters, refer to “**Reverb Parameters**” (p. 89).

Value: 00 (Off)–14

In this setting screen, you can edit the parameters of the reverb that is selected by the REV Type setting. For details on the parameters that can be edited, refer to “**Reverb Parameters**” (p. 89).



When you touch <List>, the Reverb List window will appear, allowing you to select the reverb from the list.

REV (Reverb On/Off Switch)

Switches reverb on and off.

Value: (OFF), (ON)



This is linked with the front panel EFFECTS [REVERB].

Using Waves (Wave Mode)

NOTE

Never turn off the power of the VC-2 (V-Synth) while performing an operation in Wave mode. Doing so may destroy the files.

1. Press [MODE].

The VC-2 MODE MENU window appears.

2. Touch <WAVE>.

The Wave screen appears.

NOTE

You must save after performing operations in this screen. When you touch <Save> in the screen, the **Disk Save Project** screen will appear, allowing you to save the project from the work area onto the VC-2 card. For the rest of the procedure, refer to step 4 and following of “Saving a Project to the VC-2 Card (Save Project)” (p. 38).

Importing Individual Wave Files (Wave Import)

You can import individual wave files into the work area.

NOTE

The data will be imported into unused wave numbers. Importing is not possible if there are no empty wave numbers.

1. Press [MODE].

The VC-2 MODE MENU window appears.

2. Touch <WAVE>.

The Wave screen appears.

3. Touch <Import>.

The Wave Import screen appears.

4. Touch <Int> if you want to import from internal memory, or touch <Card> if you want to import from a VC-2 card.

5. From the file list, select the file that you want to import.

Here you can use the following functions. Touch the appropriate button to execute.

Prevw: Preview (audition) the selected file (.wav/.aif).

Info: View information for the selected file.

Mark All: Mark all files/folders in the file list.

Mark: Mark the selected file/folder in the file list.

Open: Open the selected folder.

Close: Move to the next higher folder.

6. Touch <OK>.

A WARNING window appears.

HINT

If you want to cancel the procedure at this point, touch <CANCEL>.

7. Touch <EXECUTE> to execute the operation.

Using the Wave Browser

You can view a list of the imported waves in the work area. Here you can use the following functions. Touch the appropriate button to execute.

Top: Move to the beginning of the list.

End: Move to the end of the list.

Info: View information for the selected file.

Prevw: Preview (audition) the selected file (.wav/.aif).

Search Empty: Move to the first vacant wave.

Copying a Wave (WAVE Copy)

1. Touch <▼MENU> in the upper right of the screen.

A pulldown menu appears.

2. In the pulldown menu, touch <WAVE Copy>.

The WAVE Copy window appears.

3. Move the cursor to “Source” and select the copy-source wave.
4. Move the cursor to “Destination” and select the copy-destination wave.
5. Touch <Execute> to execute the copy operation.

Moving a Wave (WAVE Move)

1. Touch <▼MENU> in the upper right of the screen.

A pulldown menu appears.

2. In the pulldown menu, touch <WAVE Move>.

The WAVE Move window appears.

3. Move the cursor to “Source” and select the move-source wave.
4. Move the cursor to “Destination” and select the move-destination wave.
5. Touch <Execute> to execute the move operation.

Exchanging a Wave (WAVE Exchange)

1. Touch <▼MENU> in the upper right of the screen.

A pulldown menu appears.

2. In the pulldown menu, touch <WAVE Exchange>.

The WAVE Exchange window appears.

3. Move the cursor to “Source” and select the exchange-source wave.
4. Move the cursor to “Destination” and select the exchange-destination wave.
5. Touch <Execute> to execute the exchange operation.

Deleting a Wave (WAVE Delete)

1. Touch <▼MENU> in the upper right of the screen.

A pulldown menu appears.

2. In the pulldown menu, touch <WAVE Delete>.

The WAVE Delete List window appears.

3. From the list, select the sample that you want to delete.

Either turn the **VALUE** dial or use **[INC/+][DEC/-]** to select a patch. You can also select a patch by touching it on the display.

4. Touch <Execute>.

Settings Common to All Modes (System Mode)

Settings that affect the entire operating environment of the VC-2, such as tuning and MIDI message reception, are referred to as **system functions**. This section explains how to make settings for the System functions and describes the functions of the different System parameters.

How to Make the System Function Settings

1. Press [MODE].

The VC-2 MODE MENU window appears.

2. Touch <SYSTEM>.

The SYSTEM Com Master screen appears.

The parameters are organized into several editing groups.

3. Touch one of the buttons at the bottom of the screen to select the edit group containing the parameters you want to set.

4. Touch one of the tabs in the left of the screen to select the desired editing screen.

5. In each editing screen, touch the touch screen to set the parameters.

6. When editing a parameter that requires you to specify a value, move the cursor to the value box of that parameter. Then modify the value by either turning the VALUE dial or pressing [INC/+] or [DEC/-]. You can also modify a value by dragging over the touch screen.

7. Repeat steps 3–6 to make the settings for the System function.

Saving the System Settings (Write)

Changes you make to the System function settings are only temporary—they will be discarded as soon as the power is turned off. If you want to keep any changes you've made in

the system settings, you must save them in VC-2 card.

NOTE

When you perform the save procedure, the data that previously occupied the save destination will be lost. However, the factory setting data can be recovered by performing the Initialization procedure.

1. After you have edited the settings of the System function, touch <Write>, located in the lower right of the screen.

Initializing the System Settings (Init)

The current settings of the system functions can be restored to the factory settings.

1. Touch <Init>, located in the lower right of the screen.

A WARNING window appears.

HINT

If you want to cancel the procedure at this point, touch <CANCEL>.

2. Touch <EXECUTE> to execute the operation.

HINT

If you want the factory settings to be in effect the next time the VC-2 (V-Synth) is powered up, touch <Write> to save the settings.

Viewing VC-2's Information (Information)

1. Touch <▼MENU> in the upper right of the screen.

A pulldown menu appears.

2. In the pulldown menu, touch <Info>.

The information screen appears.

Settings Common to All Modes (System Mode)

This indicates the version of the VC-2.

3. Touch <EXIT> to close the window.

Functions of System Parameters

This section explains what the different System parameters do, and also how these parameters are organized.

Settings Common to the Entire System (Common)

Master

Parameter	Value	Explanation
Master Tune	415.3–466.2 Hz	Adjusts the overall tuning of the VC-2. The display shows the frequency of the A4 note (center A).
Master Key Shift	-24–+24	Shifts the overall pitch of the VC-2 in semitone steps.
Master Level	0–127	Adjusts the volume of the entire VC-2.

IO

Parameter	Value	Explanation
Output Gain	-12–+12 dB	This adjusts the output gain from the VC-2's Analog Out and Digital Out. When, for example, there are relatively few voices being sounded, boosting the output gain can let you attain the most suitable output level for recording and other purposes.
Digital Output Freq	44.1, 48, 96 KHz	Sets the sampling frequency of the digital output.

EQ

Parameter	Value	Explanation
2 Band EQ	OFF, ON	Switch the 2-Band equalizer on/off.
LOW Freq	50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000 Hz	Selects the frequency of the low range.
LOW Gain	-15– +15 dB	Adjusts the gain of the low frequency. Positive (+) settings will emphasize the low-frequency range.

Parameter	Value	Explanation
HIGH Freq	2000, 4000, 5000, 6300, 8000, 10000, 12500, 16000, 20000 Hz	Selects the frequency of the high range.
HIGH Gain	-15– +15 dB	Adjusts the gain of the high frequency. Positive (+) settings will emphasize the high-frequency range.
TOTAL Gain	-15– +15 dB	Adjusts the total gain.

MIDI/USB

Parameter	Value	Explanation
Device ID	17–32	When you want to transmit or receive System Exclusive messages, set this parameter to match the Device ID number of the other MIDI device.
Clock Source	INTERNAL, EXTERNAL	The LFO cycle or multi-effects changes can be synchronized to a clock (tempo). When this is used by the patch, this Clock Source setting determines the clock which will be used. INTERNAL: The Patch Tempo will be used. EXTERNAL: Synchronize to the clock of an external sequencer.
Rx Sw	OFF, ON	Specifies whether all MIDI messages will be received (ON) or not (OFF).
Rx Channel	1–16	Sets the Basic Channel (MIDI channel on which the VC-2 receives and transmits messages).
Rx PC	OFF, ON	Specifies whether Program Change messages will be received (ON) or not (OFF).
Rx Bank	OFF, ON	Specifies whether Bank Select messages will be received (ON) or not (OFF).
Rx Sys-Ex	OFF, ON	Specifies whether System Exclusive messages will be received (ON) or not (OFF).
Tx Edit	OFF, ON	Specify whether changes you make in the settings of a patch will be transmitted as system exclusive messages (ON), or will not be transmitted (OFF).
Clock Out	OFF, ON	Specifies whether MIDI clock will be transmitted (ON) or not (OFF).
USB Setup	—	The SYSTEM Com USB Setting window appears.
Volume Expression Level Control	OFF, ON	Specifies whether received Volume or Expression Pedal messages will adjust the output volume (ON), or will be ignored (OFF).

Settings Common to All Modes (System Mode)

SYSTEM Com USB Setting window

USB Mode: Selects the mode in which the USB connector will be used.

Storage: Storage mode. Select this if you want to transfer files.

MIDI: MIDI mode. Select this if you want to exchange MIDI messages with a sequencer or other program.

- * You must switch the USB Mode before you connect the VC-2 (V-Synth) to your computer via the USB cable. If you change this setting while the VC-2 (V-Synth) is connected, the computer may fail to recognize it correctly.



For details on connections to your computer in each USB Mode, refer to **“Backing Up Data to Your Computer”** (p. 40).

USB-MIDI Thru Sw: When USB Mode is set to “MIDI,” this switch specifies whether MIDI messages received at the MIDI connector will be re-transmitted from the MIDI OUT connector (ON) or not (OFF).

Chord Memory

Parameter	Value	Explanation
Chord Memory Sw	OFF, ON	Switches the Multi Chord Memory (one-finger chord) function on/off. * If you want to synchronize to an external device, set Clock Source (p. 35) to EXTERNAL, then get your external device to transmit clock messages. If you fail to do this, chords will not play correctly.
Grid Resolution	Dotted 8th note–64th note	Each note within the chord will be played separately at the timing interval you specify here.
Code set	C–B	Specify a chord for each key in the range C–B.
KEEP	OFF, ON	When entering a chord from the keyboard, this parameter specifies whether the keys you press will be held in their pressed state (ON) or not (OFF). If this is ON, the key will be maintained in a “pressed” state even when you release it.
STORE	—	Store the chord you specified from the keyboard into the chord set.

Controller Settings (Controller)

Tx

Parameter	Value	Explanation
Patch Tx Ch	1–16, RX CH, OFF	Specifies the transmit channel of MIDI messages in Patch mode. If you do not want to transmit MIDI messages to external MIDI devices, turn this parameter “OFF.” If you want the transmit channel to always match the Patch Receive Channel, set this parameter to “RX CH.”
Tx PC	OFF, ON	Specifies whether Program Change messages will be transmitted (ON) or not (OFF).
Tx Bank	OFF, ON	Specifies whether Bank Select messages will be transmitted (ON) or not (OFF).
Tx Active Sens	OFF, ON	Specifies whether Active Sensing messages will be transmitted (ON) or not (OFF).

KBD

Parameter	Value	Explanation
KBD Sens	LIGHT, MEDIUM, HEAVY	Adjusts the keyboard’s touch. LIGHT: Light weight synthesizer keyboard like MEDIUM: Standard HEAVY: Acoustic piano simulation
KBD Velocity	REAL, 1–127	Specifies the velocity value that will be transmitted when you play the keyboard. If you want actual keyboard velocity to be transmitted, set this to “REAL.” If you want a fixed velocity value to be transmitted regardless of how you play, specify the desired value (1–127).
After Sens	0–200	Specifies the Aftertouch sensitivity. Higher values will allow Aftertouch to be applied more easily. Normally you will leave this at “100.”
Local Sw	OFF, ON	The Local Switch determines whether the internal sound generator is disconnected (OFF) from the controller section (keyboard, pitch bend/modulation lever, knobs, buttons, Time Trip Pad, D Beam controller, pedal, and so on); or not disconnected (ON). Normally this is left “ON,” but if you wish to use the V-Synth’s keyboard and controllers to control only external sound modules, set it to “OFF.”

Settings Common to All Modes (System Mode)

TT Pad/Knob

Parameter	Value	Explanation
X Assign-XY	OFF, CC01–31, CC33–95, BEND UP, BEND DOWN, AFT	Specifies the MIDI controller number that will be transmitted by operations in the X (horizontal) direction if the Time Trip Pad [ASSIGNABLE] button is on. OFF: No message will be transmitted. CC01-31, 33-95: Controller numbers 1-31, 33-95 BEND UP: Pitch Bend (positive direction) BEND DOWN: Pitch Bend (negative direction) AFT: Aftertouch
Y Assign-XY	See above.	Specifies the MIDI controller number that will be transmitted by operations in the Y (vertical) direction if the Time Trip Pad [ASSIGNABLE] button is on.
X Assign-TT	See above.	Specifies the MIDI controller number that will be transmitted by operations in the X (horizontal) direction if the Time Trip Pad [TIME TRIP] button is on.
Y Assign-TT	See above.	Specifies the MIDI controller number that will be transmitted by operations in the Y (vertical) direction if the Time Trip Pad [TIME TRIP] button is on.
Knob 1, 2 Assign	See above.	Specifies the MIDI controller number that will be transmitted by movements in the ASSIGNABLE CONTROL knob.
Voice Assign	OFF, CC01–31, CC33–95	Specifies the MIDI controller number that will transmit the volume data extracted from the mic input signal. OFF: No message will be transmitted. CC01-31, 33-95: Controller numbers 1-31, 33-95

Beam

Parameter	Value	Explanation
D Beam Sens L, R	0–200	This sets the D Beam Controller’s sensitivity. Sens L is the left side. The higher the value set, the more readily the D Beam Controller goes into effect. Normally you will leave this at “100.”

Parameter	Value	Explanation
D Beam Assign		Specifies the MIDI controller number that will be transmitted by movements in the D Beam Controller. Use the four D Beam switches (TIME TRIP, TIME, PITCH, ASSIGNABLE) to switch (on/off) between four different settings. Assign L is the left side, and Assign R is the right side. OFF: No message will be transmitted. CC01-31, 33-95: Controller numbers 1-31, 33-95 +BEND: Pitch Bend (positive direction) -BEND: Pitch Bend (negative direction) AFT: Aftertouch

Pedal

Parameter	Value	Explanation
Hold Polarity	STANDARD, REVERSE	Select the polarity of the Hold pedal. On some pedals, the electrical signal output by the pedal when it is pressed or released is the opposite of other pedals. If your pedal has an effect opposite of what you expect, set this parameter to “REVERSE.” If you are using a Roland pedal (that has no polarity switch), set this parameter to “STANDARD.”
Pedal 1, 2 Assign		This specifies the function of each pedal connected to the CTRL 1, CTRL 2 PEDAL jacks. OFF: The control pedal will not be used. CC01-31, 33-95: Controller numbers 1-31, 33-95 BEND UP: Pitch bend (positive direction) BEND DOWN: Pitch bend (negative direction) AFT: Aftertouch
Pedal 1, 2 Polarity	STANDARD, REVERSE	Selects the polarity of the pedal. On some pedals, the electrical signal output by the pedal when it is pressed or released is the opposite of other pedals. If your pedal has an effect opposite of what you expect, set this parameter to “REVERSE.” If you are using a Roland pedal (that has no polarity switch), set this parameter to “STANDARD.”

Adjusting the Sensitivity of the Touch Screen/Time Trip Pad/D Beam Controller

Switch off the VC-2 (V-Synth). Remove the VC-2 card, then power up the V-Synth again. The V-Synth will start up.



Refer to “Adjusting the Sensitivity of the Touch Screen/Time Trip Pad/D Beam Controller (Calibration Mode)” in the V-Synth owner’s manual.

Saving and Loading Projects (Disk Mode)



Never turn off the power of the VC-2 (V-Synth) while performing an operation in Disk mode. Doing so may destroy the files.

Saving a Project to the VC-2 Card (Save Project)

Save the project in the work area to the VC-2 card.

1. Press [MODE].

The VC-2 MODE MENU window appears.

2. Touch <DISK>.

The DISK UTILITY MENU window appears.

3. Touch <Save Project>.

The Disk Save Project screen appears.

4. Select the save-destination project.



If you want to save the data as a new project, touch <New Project>. The PROJECT Name window will appear. Assign a name to the new project.

5. Touch <OK>.

A WARNING window appears.



If you want to cancel the procedure at this point, touch <CANCEL>.

6. Touch <EXECUTE> to execute the operation.

When the operation is completed, the display will briefly indicate "COMPLETED!".

7. Press [EXIT] to exit Disk mode.

Loading a Project from the VC-2 Card into the V-Synth (Load Project)

This function loads a project on the VC-2 card into the V-Synth's work area.



When a project is loaded, work area will be rewritten. If work area contains important data, you must save it to VC-2 card before you load other data.

1. Press [MODE].

The VC-2 MODE MENU window appears.

2. Touch <DISK>.

The DISK UTILITY MENU window appears.

3. Touch <Load Project>.

The Disk Load Project screen appears.

4. Select the project that you want to load.

5. Touch <OK>.

A WARNING window appears.



If you want to cancel the procedure at this point, touch <CANCEL>.

6. Touch <EXECUTE> to execute the operation.

When the operation is completed, the display will briefly indicate "COMPLETED!".

7. Press [EXIT] to exit Disk mode.

Reset to Default Factory Settings (Factory Reset)

This restores all data in the VC-2 card to the factory-set condition (Factory Reset).

NOTE

If there is important data you've created that's stored in the VC-2 card, all such data is discarded when a Factory Reset is performed. If you want to keep the existing data, USB backing up onto a computer (p. 40) or transmit it to an external MIDI device and save it (p. 19).

1. Press [MODE].

The VC-2 MODE MENU window appears.

2. Touch <DISK>.

The DISK UTILITY MENU window appears.

3. Touch <FACTORY RESET>.

The Factory Reset screen appears.

4. Touch <Execute> to execute the Factory Reset.

When the display indicates "COMPLETED!," the factory reset operation has been completed.

Backing Up Data to Your Computer

You can copy waves from your computer to the VC-2 card, or back up VC-2 card projects to your computer. You can also use your computer to play the VC-2 (V-Synth) as a MIDI sound module.

Selecting the VC-2's USB Storage Mode

You must switch the VC-2 to USB Storage mode before you connect the VC-2 (V-Synth) and your computer with a USB cable.

- 1. Press [MODE].**
The VC-2 MODE MENU window appears.
- 2. Touch <SYSTEM>.**
The SYSTEM Com Master screen appears.
- 3. In the left side of the screen, touch the <MIDI USB> tab.**
The SYSTEM Com MIDI/USB screen appears.
- 4. Touch <USB Setup>.**
The SYSTEM Com USB Setting window appears.
- 5. Touch USB Mode <Storage>.**
USB Storage mode will be selected.
- 6. Touch <OK>.**
- 7. If a WARNING window appears, touch <ACCEPT> to close the window.**
- 8. In the lower right of the SYSTEM Com MIDI/USB screen, touch <Write> to save the system settings.**

Connecting the VC-2 to Your Computer via USB

NOTE

Do not perform the following actions while "Access" (the access indicator) in the USB Storage screen is blinking. Doing so may also damage the files in the VC-2 card or in the PC drive.

- Do not disconnect the USB cable
- Do not remove the VC-2 card while it is being accessed
- Do not suspend (standby), sleep, hibernate, restart, or shut down your computer
- Do not turn off the power of VC-2 (V-Synth).

The installation procedure will differ depending on your system. Please proceed to one of the following sections, depending on the system you use.

- Windows XP/2000/Me
- Macintosh (p. 41)

Windows XP/2000/Me

- 1. Make sure that the power of the VC-2 (V-Synth) is turned off.**
- 2. Start up your computer.**
- 3. Connect the VC-2 (V-Synth) and your computer using a USB cable.**
- 4. Turn on the power of VC-2 (V-Synth). (p. 14)**
- 5. Press [MODE].**
The VC-2 MODE MENU window appears.
- 6. Touch <USB>.**
The USB Storage screen appears.
- 7. Touch <PC Card> to establish the connection with your computer.**

When the USB connection is established for first time, the driver installation will begin. A dialog box of "Found new hardware" will appear near the Windows task tray.

Installation is completely automatic. Please wait for it to be completed.

When installation is completed, open My Computer and you will see a new drive icon.

OS	Icon name
Windows 2000/Me	Removable Disk
Windows XP	VC-2

Macintosh

1. Make sure that the power of the VC-2 (V-Synth) is turned off.
2. Start up your computer.
3. Connect the VC-2 (V-Synth) and your computer using a USB cable.
4. Turn on the power of VC-2 (V-Synth). (p. 14)
5. Press [MODE].
The VC-2 MODE MENU window appears.
6. Touch <USB>.
The USB Storage screen appears.
7. Touch <PC Card> to establish the connection with your computer.
When the USB connection is established, a new drive icon (VC-2) will appear on your desktop.

Copying Waves from Your Computer to the VC-2 Card

1. Switch the VC-2 to Storage mode. (p. 40)
2. Connect the VC-2 and your computer via USB. (p. 40)
3. On your computer, prepare the wave file (WAV/AIFF format) that you want to copy.
4. Drag and drop that wave file onto the VC-2 drive icon.



For details on the structure of the VC-2 card files, refer to “The V-Synth’s File Structure” in the V-Synth owner’s manual.

Backing Up VC-2 Card Projects to Your Computer

1. Switch the VC-2 to Storage mode. (p. 40)
2. Connect the VC-2 and your computer via USB. (p. 40)
3. Open the VC-2 drive icon.
4. Select the folder that contains the project you want to back up.
5. Copy the selected folder to your computer.

NOTE

You must back up the entire project folder. If you back up files individually, the file structure of the project will become inconsistent, possibly causing problems.

NOTE

Do not use your computer to delete or rename the backed-up files or folders.

NOTE

You must never overwrite or delete files that have an extension of BIN. Doing so may render the VC-2 unusable.

HINT

Entire project folders that you’ve backed up on your computer can also be written back to the VC-2 card.

Canceling the USB Connection

Stop the USB connection to safely disconnect the USB cable and turn off the power to the VC-2 (V-Synth).

- 1. In the VC-2's USB Storage screen, make sure that "Access" (the access indicator) is not blinking.**
- 2. Perform the "Eject" operation on your computer.**
 - Windows XP/2000/Me:
In My Computer, right-click the "VC-2" or "Removable Disk" icon and execute "Eject."
 - Macintosh:
Select the VC-2 drive icon on your desktop, and either choose "Eject" from the "Special" menu, or drag the icon into the trash. The drive icon will disappear from the desktop, and the USB connection will be cancelled.
- 3. Press [EXIT].**

The USB Storage screen will close.

You can now safely disconnect the USB cable or turn off the power to the VC-2 (V-Synth) with the USB cable still connected.

NOTE

If you press **[EXIT]** without performing the "Eject" operation on your computer, a WARNING window will appear. Touch **<EXECUTE>** to close this window only if you are unable to perform the "Eject" operation on your computer.

Exchanging MIDI Messages with Your Computer

This is possible in the same way as for the V-Synth itself.



Refer to "**Exchanging MIDI Messages with Your Computer (MIDI Mode)**."

Using with the VariOS

Panel Descriptions

Front Panel



A. PC CARD Slot

Insert the VC-2 card into this slot.

- * Carefully insert the PC card all the way in-until it is firmly in place.
- * Never insert or pull out while the VC-2 (VariOS) is turned on.

B. PITCH / TIME / FORMANT Knobs

PITCH (C1)	Adjusts the input level after the signal has passed through the pre-effect (p. 58). If the patch algorithm (p. 7) is Keyboard , this adjusts the output level of the wave. For other patch algorithms, this adjusts the volume of the input from the INPUT jack.
TIME (C2)	You can assign a variety of parameters and functions to the two knobs (C2, C3), and use them to modify the sound in realtime.
FORMANT (C3)	

C. Indicators

MIDI	Lights when a MIDI message is received.
TEMPO	Blinks at the tempo.
PC	Lights when the MIDI mode of the VC-2 is "PC" (p. 47).
USB	Lights when connected to a computer via USB.

D. Display

Various information is shown here according to the operations you perform.

E. MENU Button

Accesses the various functions of the VariOS. (p. 47)

F. EXIT Button

Returns you to the previously displayed screen. Depending on the content of the menu, this button also functions as CANCEL.

G. CURSOR Buttons

Used to move the cursor.

H. VALUE Dial

Turn this dial to edit a value. Pressing the VALUE dial will function as ENTER (confirm). If you turn the VALUE dial while pressing it, the value will change in larger steps.

I. VOLUME Knob

Adjusts the overall volume that is output from the MAIN OUT jacks and the PHONES jack. By pressing the VOLUME knob you can audition (preview) the current patch.

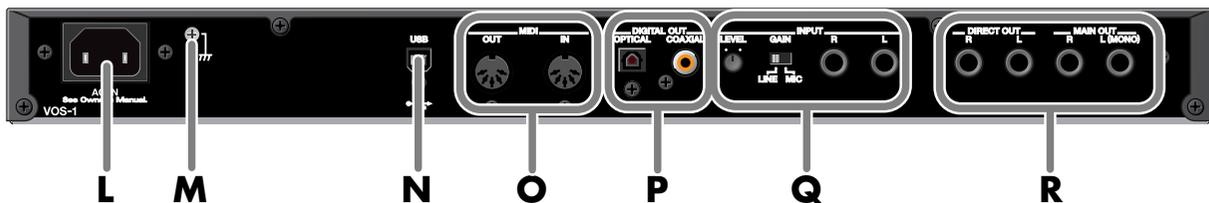
J. PHONES Jack

You can connect a set of headphones to this jack. Use headphones with an impedance in the range of 32 - 600 ohms.

K. POWER Switch

Turns the power of the VC-2 (VariOS) on/off.

Rear Panel



L. AC Inlet

Connect the supplied power cord here.

M. Grounding Terminal

Depending on the circumstances of a particular setup, you may experience a discomforting sensation, or perceive that the surface feels gritty to the touch when you touch this device, microphones connected to it, or the metal portions of other objects. This is due to an infinitesimal electrical charge, which is absolutely harmless. However, if you are concerned about this, connect the ground terminal (see figure) with an external ground. When the unit is grounded, a slight hum may occur, depending on the particulars of your installation. If you are unsure of the connection method, contact the nearest Roland Service Center, or an authorized Roland distributor, as listed on the “Information” page.

Unsuitable places for connection:

- Water pipes (may result in shock or electrocution)
- Gas pipes (may result in fire or explosion)
- Telephone-line ground or lightning rod (may be dangerous in the event of lightning)

N. USB Connector

Use a USB cable to connect the VC-2 (VariOS) to your computer.

O. MIDI Connectors

Connect external MIDI devices here. Use MIDI cables (sold separately) to make connections.

IN	Receives MIDI messages from an external device.
OUT	Transmits MIDI messages to an external device.

P. DIGITAL OUT Connectors

These jacks output digital audio signals (stereo). Two types are provided; optical and coaxial. Output settings are made in the screen where you specify the effect signal flow. You can use both types of OUT connector simultaneously; they will output the same sound.

Q. INPUT Jacks

AUDIO IN Jacks	Connect a line-level source or mic here if you want to input audio into the VC-2 (VariOS). * For the VC-2 , connect your mic to the R jack. * When playing a patch whose patch algorithm (p. 7) is Processor Type 1 or Processor Type 2 , connect your external audio device to L in order to input the sound. If you connect a mic and a line-level device at the same time, use the controls of your external device to adjust the input level.
LEVEL Knob	Adjusts the level at which audio is input from the AUDIO IN jack before passing through the pre-effect (p. 58).
GAIN switch	Switches the AUDIO IN input jacks between line level and mic level.

R. OUTPUT Jacks

Connect your amp or mixer to these jacks.

DIRECT OUT	The audio signal that is input via the INPUT R jack is sent from these jacks before it has been processed by the pre-effect (p. 58). At this time, the same signal is output from L and R.
MAIN OUT	Output the audio signal in stereo. If you want to use monaural output, connect only the L jack.

Try Out the Sounds

Turning On the Power

NOTE

To prevent malfunction and/or damage to speakers or other devices, always turn down the volume, and turn off the power on all devices before making any connections.

- 1. Before hooking anything up, make sure that the power on all of your gear is turned OFF.**
- 2. Connect the VariOS to your amp/speaker system.**
- 3. On the VariOS's rear panel, set the INPUT GAIN switch to MIC.**
- 4. Connect your mic to the VariOS's rear panel INPUT R jack.**

NOTE

If you're playing a patch whose patch algorithm (p. 7) is **Processor Type 1** or **Processor Type 2**, connect your **external device** to the VariOS's rear panel **INPUT L** jack. If you connect a mic and a line-level device at the same time, use the controls of your external device to adjust the input level.

- 5. Switch on the mic or power up the external device that you've connected to the VariOS's rear panel INPUT jack.**
- 6. After correctly inserting the VC-2 card into the PC CARD slot in the VariOS's front panel, switch ON the POWER switch.**

NOTE

Carefully insert the VC-2 card all the way in—until it is firmly in place.

NOTE

This unit is equipped with a protection circuit. A brief interval (a few seconds) after power up is required before

the unit will operate normally.

NOTE

Always make sure to have the volume level turned down before switching on power. Even with the volume all the way down, you may still hear some sound when the power is switched on, but this is normal, and does not indicate a malfunction.

NOTE

Never insert or pull out while the VC-2 (VariOS) is turned on.

- 7. Turn on the power for any connected amplifiers or speakers.**

Basic Operation of the VC-2

The Screen and Basic Operation

The VariOS has the following two modes.

Patch select mode (MENU button dark)

In this screen you can select a patch to play.

MENU mode (MENU button lit)

Here you can make various settings for the VC-2.

Switching the Screen

Patch select screen

Press the [MENU] so it's not lighted, and the patch select screen will appear.

MENU screen

Press the [MENU] so it's lighted, and the MENU screen will appear.

The MENU screen that had been displayed immediately before you most recently viewed the patch select screen will appear first.



If **Menu** is indicated in the upper left of the screen, the “<” and “>” symbols at the edge of the screen indicate that there are additional menus to the left and right.



The **top menu screen** indicates **Menu** in the upper left of the screen, and **Patch** in the lower left.

Moving to a lower level

If Menu is indicated in the upper left of the screen, use the CURSOR buttons to move the cursor and then press the VALUE knob.

In other screens, use the CURSOR buttons to move the cursor,

turn the VALUE knob to select a parameter, and then press the VALUE knob.

Moving to a higher level

Press the [EXIT]. You will move to the next higher level.

Setting the MIDI Keyboard

Determining the MIDI Keyboard Routings

1. Press the [MENU] so it's lighted, and access the MENU screen.

* If **System** is indicated in the upper left of the screen, proceed to step 3.

If you don't see **Menu** in the upper left of the screen and **Patch** in the lower left, press [EXIT] until they appear.

2. Use the CURSOR buttons to select the System menu, and press the VALUE knob.

At this time the cursor will be in the upper right of the screen.

3. Turn the [VALUE] knob to select MIDI, and use the CURSOR buttons to move the cursor to the lower left of the screen.

Make sure that the lower left of the screen indicates Mode.

4. Use the CURSOR buttons to move the cursor to the lower right of the screen, and turn the [VALUE] knob to select the routing.

MIDI Mode

Selects the MIDI keyboard routing.

Value: PC, Internal

Try Out the Sounds

Display	Description	Routing
PC	<p>When using a USB connection, the MIDI connectors on the rear panel of the VariOS will function as a USB MIDI interface (Roland VariOS External MIDI).</p> <p>* For details, refer to “VariOS User Guide.”</p>	
	<p>When USB is not connected (and when your computer is not powered up), the MIDI connectors on the rear panel of the VariOS are connected directly to the sound generator section.</p>	
Internal	<p>The MIDI connectors of the rear panel of the VariOS are connected directly to the sound generator section.</p> <p>* For details, refer to “VariOS User Guide.”</p>	

5. Press the [MENU] button to turn off its illumination.

The “PC indicator” on the front panel of the VariOS shows the current MIDI Mode status. When this is lit, “PC” mode is selected. When dark, “Internal” mode is selected.

Setting the MIDI Receive Channel

The VariOS will receive **Note-on** and **Control change** messages on the channel you specify here. If you've connected a MIDI keyboard, set this channel to match the transmit channel of your MIDI keyboard.

1. Press the [MENU] button so it's lighted, and access the MENU screen.

* If System is indicated in the upper left of the screen, proceed to step 3.

If you don't see **Menu** in the upper left of the screen and **Patch** in the lower left, press [EXIT] until they appear.

2. Use the CURSOR buttons to select the System menu, and press the VALUE knob.

At this time the cursor will be in the upper right of the screen.

3. Turn the **VALUE** knob to select **MIDI**, and use the **CURSOR** buttons to move the cursor to the lower left of the screen.
4. Turn the **VALUE** knob to select **Rx Channel**, and use the **CURSOR** buttons to move the cursor to the lower right of the screen.
5. Turn the **VALUE** knob to specify the receive channel (1 - 16).
Rx Channel
 Sets the Basic Channel (MIDI channel on which the VC-2 receives and transmits messages).
 Value: 1-16, OFF
 If you turn this off, no MIDI messages will be received.
6. Press the **[MENU]** button to turn off its illumination.

Selecting a Patch

1. Make sure the Patch select screen is displayed. (Press the **[MENU]** to turn off its illumination.)
2. To change to a different patch, turn the **VALUE** knob.

HINT

At this time you can switch more rapidly by holding down **VALUE** knob while you perform these operations.

Playing

1. Select a patch.
2. Press the **VALUE** knob to access the **INPUT L R** input indicator screen.
3. While you speak or sing into the mic, turn the rear panel **INPUT LEVEL** knob and the front panel **PITCH (C1)** knob to adjust the volume of the input from the **INPUT** jack.

The input level is shown numerically at the right edge of the screen. Adjust this to a value below 0.0 (i.e., a negative number).

MEMO

The rear panel **INPUT LEVEL** knob adjusts the input level before the pre-effect (p. 58), and the front panel **PITCH (C1)** knob adjusts the input level following the pre-effect.

MEMO

[MENU] will blink if the input level exceeds 0.0.



If you want to make more detailed settings, choose **MicSet** in the top menu screen (p. 58).

4. Speak or sing into the mic while you play the keyboard.

NOTE

If you're playing a patch whose patch algorithm (p. 7) is **Processor Type 1** or **Processor Type 2**, you won't hear the patch unless you input sound from an external device connected to the rear panel **INPUT L** in addition to the mic input. If you connect a mic and a line-level device at the same time, use the controls of your external device to adjust the input level.

MEMO

If you're playing a patch whose patch algorithm (p. 7) is **Keyboard~**, you don't need to speak or sing into the mic; the patch will produce sound when you simply play the keyboard.

Creating/Editing Patches (Patch Menu)

Creating/Editing Patches

On the VC-2, you don't need to create patches from scratch, you can start with an existing patch; i.e., by selecting a patch algorithm.

1. **Decide on the algorithm (p. 7) for the patch you want to create.**
2. **Choose an existing patch that uses that algorithm.**
3. **Assign a new name to that patch, and save it at a different patch number (p. 56, p. 57).**
Edit the patch you copied.
4. **Press the [MENU] so it's lighted, and access the MENU screen.**
If you don't see **Menu** in the upper left of the screen and **Patch** in the lower left, press [EXIT] until they appear.
5. **In the top menu screen, move the cursor to Patch.**
6. **Press the VALUE knob.**

Carr (Carrier)



Patches whose patch algorithm is **Poly PShift** do not have this menu.



The carrier menu will be different if the patch algorithm is **Processor~**. Refer to "**Carrier Menu for Processor~ Patch Algorithms**" (p. 52).

OSC1Wave/OSC2Wave

The following parameters will be displayed if the oscillator type is **Analog**.

Parameter	Value	Explanation
Wav	—	Selects the wave. * The available waves will depend on the patch algorithm.
Level	0-127	Adjusts the output volume.
Pan	L64- 0-63R	Specifies the pan of the patch. "L64" is far left, "0" is center, and "63R" is far right.
Pulse Width	-63- +63	Specifies the amount by which the wave shape will be modified.
SubOSC	OFF, -2, -1, 0	The same wave will be layered. OFF : No sound. -2 : The second wave will sound two octaves below. -1 : The second wave will sound one octave below. 0 : The second wave will sound at the same pitch.
SubLvl	0-127	Specifies the output volume of the second wave.
Detune	-63- +63	Specifies the amount of detuning for the second wave.

The following parameters will be displayed if the oscillator type is **PCM**.

Parameter	Value	Explanation
Wav	—	Selects the wave. * The available waves will depend on the patch algorithm.
Level	0-127	Adjusts the output volume.
Pan	L64- 0-63R	Specifies the pan of the patch. "L64" is far left, "0" is center, and "63R" is far right.
Offset	0-15	Adjusts the precise point at which the wave is to begin sounding.

OSC1Pitch

Parameter	Value	Explanation
Octave Shift	-4- +4	Adjusts the pitch of the OSC1's sound up or down in units of an octave (+/-4 octaves).

OSC2Pitch

Parameter	Value	Explanation
Coarse (Coarse Tune)	-48- +48	Adjusts the pitch of the oscillator up or down in semitone steps (+/-4 octaves).

Parameter	Value	Explanation
Fine (Fine Tune)	-50– +50	Adjusts the pitch of the oscillator up or down in 1-cent steps (+/-50 cents).
PitchKF (Pitch Key Follow)	-200– +200	This specifies the amount of pitch change that will occur when you play a key one octave higher (i.e., 12 keys upward on the keyboard). If you want the pitch to rise one octave as on a conventional keyboard, set this to "+100." If you want the pitch to rise two octaves, set this to "+200." Conversely, set this to a negative value if you want the pitch to fall. With a setting of "0," all keys will produce the same pitch.

Glide

Parameter	Value	Explanation
Time	0–127	Specifies the time over which the pitch is to change.
OSC1/2 Depth	-63– +63	Specifies the amount of pitch change that is to occur.

Vibrato

Parameter	Value	Explanation
Type	NORMAL, FEMALE1, FEMALE2, MALE	Selects the type of vibrato.
Rate	0–127	Adjusts the vibrato speed.
Mod Ctrl	→ p. 55	Refer to " Controllers " (p. 55).
OSC1/2 Depth	-63– +63	Adjusts the depth of the vibrato applied to OSC1 or OSC2.
OSC1/2 ModDepth	-63– +63	Adjusts the depth of the vibrato that is applied to OSC1 or OSC2 by the controller assigned by Mod Ctrl .

Equalizer

Parameter	Value	Explanation
Mid 1/2 Freq	50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 16000, 20000 Hz	Selects the frequency of the middle range.
Mid 1/2 Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Adjusts the width of the middle range. Set a higher value for Q to narrow the range to be affected.
Mid 1/2 Gain	-15– +15 dB	Adjusts the gain of the middle range. Positive (+) settings will emphasize the middle range.

Growl

Parameter	Value	Explanation
Switch	OFF, ON	Switches growl on/off.
Intensity	0–127	Adjusts the intensity of modulation.
Int ModDepth	-63– +63	Adjusts the intensity of modulation by the controller assigned by Mod Ctrl .
Speed	0–127	Adjusts the speed of modulation.
Spd ModDepth	-63– +63	Adjusts the speed of modulation by the controller assigned by Mod Ctrl .
Mod Ctrl	→ p. 55	Refer to " Controllers " (p. 55).

TVA

Parameter	Value	Explanation
Level	0–127	Specifies the volume of the patch.
LevelKF (Level Key Follow)	-200– +200	Use this parameter if you want the volume of the patch to change according to the key that is pressed. Relative to the volume at the C5 key (center C), positive (+) settings will cause the volume to rise for notes higher than C5, and negative (-) settings will cause the volume to fall for notes higher than C4. Larger settings will produce greater change.
LvlVel Sens	-63– +63	Keyboard playing dynamics can be used to control the volume of the patch. If you want the volume to have more effect for strongly played notes, set this parameter to a positive (+) value. If you want the volume to have less effect for strongly played notes, set this to a negative (-) value.
Lvl ModDepth	-63– +63	Adjusts the volume of the patch by the controller assigned by Mod Ctrl .
Pan	L64–0– 63R	Specifies the pan of the patch. "L64" is far left, "0" is center, and "63R" is far right.
PanKF (Pan Key Follow)	-200– +200	Use this parameter if you want key position to affect panning. Positive (+) settings will cause notes higher than C5 key (center C) to be panned increasingly further toward the right, and negative (-) settings will cause notes higher than C5 key (center C) to be panned toward the left. Larger settings will produce greater change.
Pan ModDepth	-63– +63	Adjusts the pan of the patch by the controller assigned by Mod Ctrl .
Attack Time	0–127	Specifies the attack time of the envelope (the time from when you press a key until the envelope level reaches the maximum value).
Atk Vel Sens	-63– +63	This allows keyboard dynamics to affect the attack time of the envelope. If you want attack time to be speeded up for strongly played notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value.

Creating/Editing Patches (Patch Menu)

Parameter	Value	Explanation
Release Time	0–127	Specifies the release time of the envelope (the time from when you release a key until the envelope level reaches 0).
Mod Ctrl	→ p. 55	Refer to “ Controllers ” (p. 55).

Key Assign

Parameter	Value	Explanation
Mono/ Poly	MONO, POLY	Specifies whether the patch will play monophonically or polyphonically. The monophonic setting is effective when playing a solo instrument patch such as sax or flute. MONO: Only the last-played note will sound. POLY: Two or more notes can be played simultaneously.
LegatoSW	OFF, ON	Legato is valid when the Mono/Poly parameter is set to monophonic. This setting specifies whether the Legato function will be used (ON) or not (OFF). With the Legato Switch parameter “ON,” pressing a key while continuing to press a previous key causes the note to change pitch to the pitch of the most recently pressed key, sounding all the while. This creates a smooth transition between notes, which is effective when you wish to simulate the hammering-on and pulling-off techniques used by a guitarist.

Portamento

Portamento is an effect which smoothly changes the pitch from the first-played key to the next-played key. By applying portamento when the Mono/Poly parameter is monophonic, you can simulate slide performance techniques on a violin or similar instrument.

Parameter	Value	Explanation
Switch	OFF, ON	Specifies whether portamento will be applied (ON) or not (OFF).
Mode	NORMAL, LEGATO	Specifies the performance conditions for which portamento will be applied. NORMAL: Portamento will always be applied. LEGATO: Portamento will be applied only when you play legato (i.e., when you press the next key before releasing the previous key).

Parameter	Value	Explanation
Type	RATE, TIME	Specifies the type of portamento effect. RATE: The time it takes will depend on the distance between the two pitches. TIME: The time it takes will be constant, regardless of how far apart in pitch the notes are.
Time	0–127	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.

Bender

Parameter	Value	Explanation
Range	0–48	Specifies the degree of pitch change in semitones when the Pitch Bend lever is all the way left/right. For example if this is set to “48” and you move the pitch bend lever all the way to the left, the pitch will fall 4 octaves. If this parameter is set to “12,” the pitch will rise one octave when the pitch bend lever is moved to the right-most position.

Carrier Menu for Processor~ Patch Algorithms

TVA

Parameter	Value	Explanation
Level	0–127	Specifies the volume of the patch.
Lvl ModDepth	-63– +63	Adjusts the volume of the patch by the controller assigned by Mod Ctrl .
Pan	L64-0– 63R	Specifies the pan of the patch. “L64” is far left, “0” is center, and “63R” is far right.
Pan ModDepth	-63– +63	Adjusts the pan of the patch by the controller assigned by Mod Ctrl .
Mod Ctrl	→ p. 55	Refer to “ Controllers ” (p. 55).

Wave



This menu is available only for patches whose patch algorithm is **Keyboard~**.

OSC Wave

Parameter	Value	Explanation
Wav	—	Selects a preset or imported wave.
Tempo Sync	OFF, ON	Specifies whether the wave will be sounded in sync with the tempo clock (ON) or not (OFF).
KeyMod	NORMAL, ALWAYS	NORMAL: Begin sounding when you press a key, and stop sounding when you release the key. ALWAYS: Begin sounding when you first press a key, and continue sounding.

VARI Pitch

Parameter	Value	Explanation
Pitch	-63~ +63	Adjusts the pitch.
Mod Depth	-63~ +63	Adjust the pitch using the controller assigned by Mod Ctrl .
Mod Ctrl	→ p. 55	Refer to “ Controllers ” (p. 55).

VARI Time

Parameter	Value	Explanation
Time	-63~ +63	This sets the range of change in playback speed (time).
Mod Depth	-63~ +63	Adjust the range of change in playback speed using the controller assigned by Mod Ctrl .
Mod Ctrl	→ p. 55	Refer to “ Controllers ” (p. 55).

VARIFormant

Parameter	Value	Explanation
Formant	-63~ +63	This sets the range of change in vocal quality (formant).
Mod Depth	-63~ +63	Adjust the range of change in vocal quality using the controller assigned by Mod Ctrl .
Mod Ctrl	→ p. 55	Refer to “ Controllers ” (p. 55).

TVA

Parameter	Value	Explanation
Level	0–127	Specifies the volume of the wave.

Parameter	Value	Explanation
Lvl ModDepth	-63~ +63	Adjust the volume of the wave using the controller assigned by Mod Ctrl .
Mod Ctrl	→ p. 55	Refer to “ Controllers ” (p. 55).

Vocoder



Patches whose patch algorithm is **Poly PShift** do not have this menu.

Vocoder

Parameter	Value	Explanation
Level	0–127	Adjusts the output level of the vocoder.
Attack	0–100	Adjusts the attack time of the vocoder. * This parameter is not available if the patch algorithm is Vocoder~ or Processor Type 2 .
Release	0–100	Specifies the time from when the vocoder begins to operate until the volume reaches 0. * This parameter is not available if the patch algorithm is Vocoder~ or Processor Type 2 .
Lvl ModDepth	-63~ +63	Adjust the output level of the vocoder using the controller assigned by Mod Ctrl .

Natural

Parameter	Value	Explanation
Level	0–127	Specifies the output level of the natural voice (your unprocessed voice, or the original sound of the wave for Keyboard~ patch algorithms).
RevSend	0–127	Adjusts the reverb send level.
Lvl ModDepth	-63~ +63	Adjust the output level of the natural voice using the controller assigned by Mod Ctrl .

Unvoice

* This parameter is not available if the patch algorithm is **Vocoder~** or **Processor Type 2**.

Parameter	Value	Explanation
Level	0–127	Specifies the amount of the detected unvoiced consonants that will be mixed into the output of the vocoder.
Detect	1–50	Adjusts the sensitivity at which unvoiced consonants are detected.

Creating/Editing Patches (Patch Menu)

Mod Ctrl

Refer to “**Controllers**” (p. 55).

Formant

* This parameter is not available if the patch algorithm is **Vocoder~** or **Processor Type 2**.

Parameter	Value	Explanation
Type	FLAT-STFEM2	Selects the type of formant.

Tone

* This parameter is not available if the patch algorithm is **Vocoder~** or **Processor Type 2**.

Parameter	Value	Explanation
Tone	0-127	Adjusts the brightness of the sound.

HoldDump

Parameter	Value	Explanation
Time	0-127	Specifies the time from when the hold pedal is pressed to fix the tonal character from INPUT until that sound disappears.

AutoNote

* This parameter is not available if the patch algorithm is **Keyboard~** or **Processor~**.

Parameter	Value	Explanation
Switch	OFF, ON	If this is on, the pitch from the mic input will be detected, allowing you to play the VC-2 without having to play the keyboard (i.e., without inputting note data).

PolyPShift (Poly Pitch Shifter)



This menu is available only for patches whose patch algorithm is **Poly PShift**.

OSC1/OSC2

Parameter	Value	Explanation
Switch	OFF, ON	Switches OSC2 on/off.
FmtStyl	FLAT-IMPROV	Selects the style of vocal character (formant).

Parameter	Value	Explanation
Formant	-63- +63	Adjusts the width of formant change.
Level	0-127	Adjusts the output volume.
Pan	L64-0-63R	Specifies the pan of the patch. “L64” is far left, “0” is center, and “63R” is far right.
Formant KF	-200-+200	Specifies the amount by which the formant value will be affected by the key you play.

PPS

Parameter	Value	Explanation
Level	0-127	Adjusts the output level of the poly pitch shifter.
LvMod-Depth	-63-+63	Adjust the output level of the poly pitch shifter using the controller assigned by Mod Ctrl .

Natural

Parameter	Value	Explanation
Level	0-127	Adjusts the output level of the natural voice (your own unprocessed voice).
RevSend	0-127	Adjusts the reverb send level.
LvMod-Depth	-63-+63	Adjust the output level of the natural voice using the controller assigned by Mod Ctrl .

PPS/Natural

Parameter	Value	Explanation
Mod Ctrl	→ p. 55	Refer to “ Controllers ” (p. 55).

Unvoice

Parameter	Value	Explanation
Level	0-127	Specifies the amount of the detected unvoiced consonants that will be mixed into the output of the vocoder.
Detect	1-50	Adjusts the sensitivity at which unvoiced consonants are detected.

OSC1Pitch~Bender



Refer to “**Carr (Carrier)**” **OSC1Pitch** (p. 50) through **Bender** (p. 52).

AutoNote

Parameter	Value	Explanation
Switch	OFF, ON	If this is on, the pitch from the mic input will be detected, allowing you to play the VC-2 without having to play the keyboard (i.e., without inputting note data).

Controller

Select the controller used by **ModDepth** or **~ModDepth**.

OFF: Control will not be used.

CC01–31, 33–95: Controller numbers 1–31, 33–95

BEND: Pitch Bend, **AFT:** Aftertouch

C2: TIME (C2) knob, **C3:** FORMANT (C3) knob

VELO: Velocity, **KEYF:** Key Follow

* **VELO** and **KEYF** do not exist in the wave menu **Mod Ctrl** or for patches whose patch algorithm is **Processor~**.

BREATH: Volume of the mic input

Route (Routing)

Effect Sw

Parameter	Value	Explanation
MFX	OFF, ON	Switches MFX on and off.
Reverb	OFF, ON	Switches chorus on and off.
Chorus	OFF, ON	Switches reverb on and off.

MFX

Parameter	Value	Explanation
Level	0–127	Adjusts the volume of the sound that has passed through the MFX.
Reverb Send	0–127	Adjusts the amount of reverb for the sound that passes through MFX. If you don't want to add the Reverb effect, set it to "0."
Chorus Send	0–127	Adjusts the amount of chorus for the sound that passes through MFX. If you don't want to add the Chorus effect, set it to "0."

Reverb

Parameter	Value	Explanation
Level	0–127	Adjusts the volume of the sound that has passed through the reverb.

Chorus

Parameter	Value	Explanation
Level	0–127	Adjusts the volume of the sound that has passed through the chorus.
Reverb Send	0–127	Adjusts the amount of reverb for the sound that passes through chorus. If you don't want to add the Reverb effect, set it to "0."

MFX

Use this parameter to select from among the 41 available MFX. For details on MFX parameters, refer to "**MFX Parameters**" (p. 70).

Value: 00 (Thru)–41

In this setting screen, you can edit the parameters of the MFX that is selected by the MFX Type setting. For details on the parameters that can be edited, refer to "**MFX Parameters**" (p. 70).

Rev (Reverb)

Use this parameter to select from among the 14 available reverb. For details on reverb parameters, refer to "**Reverb Parameters**" (p. 89).

Value: 00 (Off)–14

In this setting screen, you can edit the parameters of the reverb that is selected by the REV Type setting. For details on the parameters that can be edited, refer to "**Reverb Parameters**" (p. 89).

Cho (Chorus)

Use this parameter to select from among the 8 available chorus. For details on chorus parameters, refer to "**Chorus Parameters**" (p. 88).

Value: 00 (Off)–08

In this setting screen, you can edit the parameters of the chorus that is selected by the CHO Type setting. For details on the parameters that can be edited, refer to "**Chorus Parameters**" (p. 88).

Common

Naming a Patch (Name)

Before you save the patch, here's how to give it a new name.

1. Use the **CURSOR** buttons to move the cursor to the location where you want to enter a character.
2. Turn the **VALUE** knob to specify the desired character.
By turning the VALUE knob while pressing it, you can conveniently shift between uppercase characters, lowercase characters, numerals, symbols, and spaces.
3. When you have finished inputting, press the **VALUE** knob to finalize the patch name.

Tempo

* This parameter is not available if the patch algorithm is **Processor~**.

Adjusts the tempo of the patch.

Value: 20.0–250.0

Tune

* This parameter is not available if the patch algorithm is **Processor~**.

Parameter	Value	Explanation
Coarse (Coarse Tune)	-48– +48	Adjusts the pitch of the patch's sound up or down in semitone steps (+/-4 octaves).
Fine (Fine Tune)	-50– +50	Adjusts the pitch of the patch's sound up or down in 1-cent steps (+/-50 cents).

ScaleTune

* This parameter is not available if the patch algorithm is **Processor~**.

Parameter	Value	Explanation
Switch	OFF, ON	Turn this on when you wish to use a tuning scale other than equal temperament. The VC-2 allows you to play the keyboard using temperaments other than equal temperament. The pitch is specified in one-cent units relative to the equal tempered pitch.
C-B (Patch Scale Tune)	-100– +100	Make scale tune settings.

Equal Temperament

This tuning divides the octave into 12 equal parts, and is the most widely used method of temperament used in Western music. The V-Synth employs equal temperament when the Scale Tune Switch is set to "OFF."

Just Temperament (Tonic of C)

Compared with equal temperament, the principle triads sound pure in this tuning. However, this effect is achieved only in one key, and the triads will become ambiguous if you transpose.

Arabian Scale

In this scale, E and B are a quarter note lower and C# and G# are a quarter-note higher compared to equal temperament. The intervals between G and B, C and E, F and G#, Bb and C#, and Eb and F# have a natural third—the interval between a major third and a minor third. On the V-Synth, you can use Arabian temperament in the three keys of G, C and F.

<Example>

Note name	Equal temperament	Just Temperament (tonic C)	Arabian Scale
C	0	0	-6
C#	0	-8	+45
D	0	+4	-2
Eb	0	+16	-12
E	0	-14	-51
F	0	-2	-8
F#	0	-10	+43
G	0	+2	-4
G#	0	+14	+47
A	0	-16	0
Bb	0	+14	-10
B	0	-12	-49

Saving Patches (Write)

Changes you make to sound settings are temporary, and will be lost if you turn off the power or select another sound. If you want to keep the modified sound, you must save it in the VC-2 card.

NOTE

When you perform the save procedure, the data that previously occupied the save destination will be lost.

- 1. Turn the VALUE knob to specify the save-destination patch (U001~U448).**
- 2. Press the VALUE knob.**
The display will ask "Patch Write OK? Push ENTER."
- 3. Press the VALUE knob once again.**

Deleting Patches (Del)

- 1. Turn the VALUE knob to specify the patch you wish to delete (U001~U448).**
- 2. Press the VALUE knob.**
The display will ask "Patch Delete OK? Push ENTER."
- 3. Press the VALUE knob once again.**

Copying Patch Controller Settings (CtrlCopy)

- 1. Turn the VALUE knob to specify the copy-destination patch.**

If you select the same user patch for both Range fields, only that patch will be copied.

If you select different user patches for the two Range fields, the patches within that range of patch numbers will be copied.

NOTE

The copy operation will not be carried out if the copy-destination patch is "INIT PATCH."

- 2. Press the VALUE knob.**
The display will ask "CtrlCopy OK? Push ENTER."
- 3. Press the VALUE knob once again.**

Changing the Mic Settings

1. Select a patch. (p. 49)
2. Press the [MENU] so it's lit, and access the MENU screen.
If you don't see **Menu** in the upper left of the screen and **Patch** in the lower left, press [EXIT] until they appear.
3. In the top menu screen, move the cursor to **MicSet**.
4. Press the VALUE knob.

Switching the Mic Setting

The VC-2 can store eight mic settings.

Turn the VALUE knob to switch through mic settings 1–8 shown in the upper right of the screen.



Note that when you change the parameter values, the mic settings will also change (and be saved automatically).

EFX Type (Pre-Effect Types)

There are three pre-effects: compressor, limiter, and noise suppressor. By using these you can adjust the level of the sound being sampled.

Noise suppressor: This effect leaves the original sound untouched, but mutes the noise that is heard during periods of silence.

Compressor: By reducing high levels and raising low levels, this effect smoothes out unevenness in volume.

Limiter: By compressing sounds that exceed a specified volume level, this effect prevents the sound from distorting.

OFF

No pre-effect will be used.

EQ LOW/MID/HIGH (Three-band equalizer)

Parameter	Value	Explanation	
EQ Low	Freq	50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000 Hz	Selects the frequency of the low range.
	Gain	-15– +15 dB	Adjusts the gain of the low frequency. Positive (+) settings will emphasize the low-frequency range.
EQ Mid	Freq	50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 16000, 20000 Hz	Selects the frequency of the middle range.
	Q	0.3, 0.4, 0.6, 0.8, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 5.0, 6.0, 7.0, 8.0, 10.0, 12.0, 14.0, 16.0, 18.0, 20.0	Adjusts the width of the middle range. Set a higher value for Q to narrow the range to be affected.
	Gain	-15– +15 dB	Adjusts the gain of the middle range. Positive (+) settings will emphasize the middle range.
EQ Hi	Freq	2000, 4000, 5000, 6300, 8000, 10000, 12500, 16000, 20000 Hz	Selects the frequency of the high range.
	Gain	-15– +15 dB	Adjusts the gain of the high frequency. Positive (+) settings will emphasize the high-frequency range.
Mic Level	0–127	Adjusts the volume of the mic.	

NS-COMP

Compressor and noise suppressor settings can be made.



For the parameters of the three-band equalizer, refer to the explanation of **OFF**.

NS (Noise Suppressor)

Parameter	Value	Explanation
NS Threshold	-60-0 dB	Specifies the level at which the noise suppressor will begin to operate. When the signal falls below the specified level, it will be muted.
NS Release	0-127	Specifies the time from when the noise suppressor begins to operate until the volume reaches 0.

Comp (Compressor)

Parameter	Value	Explanation
Comp Gain	0-127	Adjusts the output gain.
Comp Attack	0-127	Specifies the attack time of the input sound.
Comp Release	0-127	Specifies the time from when the compressor begins to operate until the volume reaches 0.
Comp Level	0-127	Adjusts the volume of the mic.

NS-LMT

Limiter and noise suppressor settings can be made.



For the parameters of the three-band equalizer, refer to the explanation of **OFF**.



For the parameters of the noise suppressor, refer to the explanation of **NS-COMP**.

Limit (Limiter)

Parameter	Value	Explanation
Limit Thre	-40-0 dB	Specifies the level (threshold level) at which the limiter will begin to function.
Limit Attack	0-127	Specifies the time from when the input level exceeds the threshold level until the limiter begins to operate.
LimitRelease	0-127	Specifies the time from when the input level drops below the threshold level until the limiter turns off.
LimitRatio	2:1-INF:1	Specifies the compression ratio.
LimitLevel	0-127	Adjusts the volume of the mic.

NS

Noise suppressor settings can be made.



For the parameters of the three-band equalizer, refer to the explanation of **OFF**.

NS (Noise Suppressor)

Parameter	Value	Explanation
NS Threshold	-60-0 dB	Specifies the level at which the noise suppressor will begin to operate. When the signal falls below the specified level, it will be muted.
NS Release	0-127	Specifies the time from when the noise suppressor begins to operate until the volume reaches 0.
NS Level	0-127	Adjusts the volume of the mic.

Settings Common to All Menu (System Menu)

Settings that affect the entire operating environment of the VC-2, such as tuning and MIDI message reception, are referred to as **system functions**. This section explains how to make settings for the System functions and describes the functions of the different System parameters.

1. Press the [MENU] so it's litged, and access the MENU screen.

If you don't see **Menu** in the upper left of the screen and **Patch** in the lower left, press [EXIT] until they appear.

2. In the top menu screen, move the cursor to System.

3. Press the VALUE knob.

Functions of System Parameters

This section explains what the different System parameters do, and also how these parameters are organized.

Master

Parameter	Value	Explanation
Tune	415.3–466.2 Hz	Adjusts the overall tuning of the VC-2. The display shows the frequency of the A4 note (center A).
Key Shift	-24–+24	Shifts the overall pitch of the VC-2 in semitone steps.
Level	0–127	Adjusts the volume of the entire VC-2.

IO

Parameter	Value	Explanation
Output Level	-12–+12 dB	This adjusts the output gain from the VC-2's Analog Out and Digital Out. When, for example, there are relatively few voices being sounded, boosting the output gain can let you attain the most suitable output level for recording and other purposes.

EQ

Parameter	Value	Explanation
Switch	OFF, ON	Switch the 2-Band equalizer on/off.

Parameter	Value	Explanation
Low Freq	50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000 Hz	Selects the frequency of the low range.
LowGain	-15– +15 dB	Adjusts the gain of the low frequency. Positive (+) settings will emphasize the low-frequency range.
Hi Freq	2000, 4000, 5000, 6300, 8000, 10000, 12500, 16000, 20000 Hz	Selects the frequency of the high range.
Hi Gain	-15– +15 dB	Adjusts the gain of the high frequency. Positive (+) settings will emphasize the high-frequency range.
Total Gain	-15– +15 dB	Adjusts the total gain.

MIDI

Parameter	Value	Explanation
Mode	PC, INTERNAL	Refer to "Determining the MIDI Keyboard Routings" (p. 47).
Device ID	17–32	When you want to transmit or receive System Exclusive messages, set this parameter to match the Device ID number of the other MIDI device.
Clk Src	INTERNAL, EXTERNAL	The LFO cycle or multi-effects changes can be synchronized to a clock (tempo). When this is used by the patch, this Clock Source setting determines the clock which will be used. INTERNAL: The Patch Tempo will be used. EXTERNAL: Synchronize to the clock of an external sequencer.
Rx PC	OFF, ON	Specifies whether Program Change messages will be received (ON) or not (OFF).
Rx Bank	OFF, ON	Specifies whether Bank Select messages will be received (ON) or not (OFF).
Rx Sys-Ex	OFF, ON	Specifies whether System Exclusive messages will be received (ON) or not (OFF).
Tx Edit	OFF, ON	Specify whether changes you make in the settings of a patch will be transmitted as system exclusive messages (ON), or will not be transmitted (OFF).
Rx Channel	1–16, OFF	Refer to "Setting the MIDI Receive Channel" (p. 48).

Ctrl Tx

Parameter	Value	Explanation
Patch TxCh	1-16, RX CH, OFF	Specifies the transmit channel of MIDI messages in Patch mode. If you do not want to transmit MIDI messages to external MIDI devices, turn this parameter "OFF." If you want the transmit channel to always match the Patch Receive Channel, set this parameter to "RX CH."
Tx PC	OFF, ON	Specifies whether Program Change messages will be transmitted (ON) or not (OFF).
Tx Bank	OFF, ON	Specifies whether Bank Select messages will be transmitted (ON) or not (OFF).
TxActiveSens	OFF, ON	Specifies whether Active Sensing messages will be transmitted (ON) or not (OFF).

Knob

Parameter	Value	Explanation
2 Assign	OFF, CC01-31, CC33-95, BEND UP, BEND DW, AFT	Specifies the MIDI controller number that will be transmitted by movements in the TIME (C2) knob. OFF: No message will be transmitted. CC01-31, 33-95: Controller numbers 1-31, 33-95 BEND UP: Pitch Bend (positive direction) BEND DW: Pitch Bend (negative direction) AFT: Aftertouch
3 Assign	See above.	Specifies the MIDI controller number that will be transmitted by movements in the FORMANT (C3) knob.

Breath

Parameter	Value	Explanation
VoiceAsgn	OFF, CC01-31, CC33-95	Specifies the MIDI controller number that will transmit the volume data extracted from the mic input signal. OFF: No message will be transmitted. CC01-31, 33-95: Controller numbers 1-31, 33-95

Saving the System Settings (Write)

Changes you make to the System function settings are only temporary—they will be discarded as soon as the power is turned off. If you want to keep any changes you've made in the system settings, you must save them in VC-2 card.



When you perform the save procedure, the data that previously occupied the save destination will be lost. However, the factory setting data can be recovered by performing the Initialization procedure.

- 1. After you've edited system settings, turn the VALUE knob until "System Write, push ENTER" appears in the screen.**

- 2. Press the VALUE knob.**

The display will ask "System Write OK? Push ENTER."

- 3. Press the VALUE knob once again.**

Initializing the System Settings (Init)

The current settings of the system functions can be restored to the factory settings.

- 1. Turn the VALUE knob until "System Init, push ENTER" appears in the screen.**

- 2. Press the VALUE knob.**

The display will ask "System Init OK? Push ENTER."

- 3. Press the VALUE knob once again.**

Using Waves (Wave Menu)

NOTE

Never turn off the power of the VC-2 (VariOS) while performing an operation in Wave menu. Doing so may destroy the files.

1. Press the [MENU] so it's lighted, and access the MENU screen.

If you don't see **Menu** in the upper left of the screen and **Patch** in the lower left, press [EXIT] until they appear.

2. In the top menu screen, move the cursor to Wave.

3. Press the VALUE knob.

NOTE

You must Save after performing operations in this menu. Open **Save Project** from the **Disk** menu, and save the project from the VariOS's memory onto the VC-2 card. Refer to "Saving a Project to the VC-2 Card (Save Project)" (p. 63).

Importing Individual Wave Files (Import)

You can import individual wave files into the VariOS's memory.

NOTE

The data will be imported into unused wave numbers. Importing is not possible if there are no empty wave numbers.

1. Move the cursor to Import.

2. Press the VALUE knob.

3. Turn the VALUE knob to select the location to which you want to import the data.

HINT

[Patch] indicates the Patch folder of the current project.

[Wave] indicates the Wave folder of the same project.

[..] indicates the next higher level.

4. Press the VALUE knob.

Repeat steps 3–4 to move between levels.

5. Turn the VALUE knob to select the file.

The file name of the patch or wave will be displayed.

If there is no file, only the [..] indication will appear when you turn the VALUE knob.

HINT

You can press the VOLUME knob to audition (preview) the wave.

6. Press the VALUE knob.

The display will ask "Import OK? Push ENTER."

7. Press the VALUE knob to import the data.

Deleting a Wave (Delete)

1. Move the cursor to Delete.

2. Press the VALUE knob.

3. Turn the VALUE knob to select the wave that you want to delete.

4. Press the VALUE knob.

The display will ask "Wave Delete OK? Push ENTER."

5. Press the VALUE knob to delete the data.

Saving and Loading Projects (Disk Menu)

NOTE

Never turn off the power of the VC-2 (VariOS) while performing an operation in Disk menu. Doing so may destroy the files.

1. Press the [MENU] so it's lighted, and access the MENU screen.

If you don't see **Menu** in the upper left of the screen and **Patch** in the lower left, press [EXIT] until they appear.

2. In the top menu screen, move the cursor to Disk.

3. Press the VALUE knob.

Saving a Project to the VC-2 Card (Save Project)

Save the project in the VariOS's memory to the VC-2 card.

1. Move the cursor to Save Project.

2. Press the VALUE knob.

The current project name is displayed.

- If you want to create a new project and save it, press the right CURSOR button. Refer to "Save As a New Project."
- If you want to overwrite an existing project, turn the VALUE knob to select the project that you want to overwrite.

3. Press the VALUE knob.

The display will ask "Save Project OK? Push ENTER."

4. Press the VALUE knob to save the data.

Save As a New Project

Before you save the project, here's how to give it a new name.

1. Use the CURSOR buttons to move the cursor to the location where you want to enter a character.

2. Turn the VALUE knob to specify the desired character.

By turning the VALUE knob while pressing it, you can conveniently shift between uppercase characters, lowercase characters, numerals, symbols, and spaces.

3. When you have finished inputting, press the VALUE knob to finalize the project name.

The display will ask "Create Project OK? Push ENTER."

4. Press the VALUE knob to save the data.

Loading a Project from the VC-2 Card into the VariOS (Load Project)

This function loads a project on the VC-2 card into the VariOS's memory.

NOTE

When a project is loaded, the VariOS's memory will be rewritten. If the VariOS's memory contains important data, you must save it to the VC-2 card before you load other data.

1. Move the cursor to Load Project.

2. Press the VALUE knob.

3. Turn the VALUE knob to select the project that you want to load.

4. Press the VALUE knob.

The display will ask "Load Project OK? Push ENTER."

5. Press the VALUE knob to load the data.

Reset to Default Factory Settings (Factory Reset)

This restores all data in the VC-2 card to the factory-set condition (Factory Reset).

NOTE

If there is important data you've created that's stored in the VC-2 card, all such data is discarded when a Factory Reset is performed. If you want to keep the existing data, USB backing up onto a computer (p. 66) or transmit it to an external MIDI device and save it (p. 65).

- 1. Move the cursor to Factory Reset.**
- 2. Press the VALUE knob.**
The display will ask "Factory Reset OK? Push ENTER."
- 3. Press the VALUE knob to execute the Factory Reset.**

Other Functions

Utility Menu

1. Press the [MENU] so it's litged, and access the MENU screen.

If you don't see **Menu** in the upper left of the screen and **Patch** in the lower left, press [EXIT] until they appear.

2. In the top menu screen, move the cursor to Utility.
3. Press the VALUE knob.

Transmitting Data to an External MIDI Device (Data Transfer)

Patch, setup and system settings will be transmitted to an external MIDI device. This operation is called **bulk dump**. Use this operation when you want to connect another VC-2 (VariOS) and play it using the same settings, or to save your data on an external MIDI device as a precaution against possible loss of sound data or system settings.

If you want to transfer data to an external MIDI device, connect the MIDI OUT connector of the VC-2 (VariOS) to the MIDI IN connector of your external MIDI device.

1. Move the cursor to Data Transfer.
2. Press the VALUE knob.
3. Turn the VALUE knob to select the type of data that you want to transmit.

ALL: Patch, setup, mic setting, system

SETUP+MIC Sets: Setup and mic setting

SYSTEM: System

Temporary PATCH: The currently selected patch

User PATCH: The user patch you specify will be transmitted. Press the VALUE knob and select the range of patch numbers (**U001–U448**) that you want to transmit.

4. Set the external MIDI device so that it will be ready to receive data, and press the VALUE knob to execute data transmission.

While the data is being transmitted, the display will indicate "Transfer..." When "Completed!" is displayed, the transmission has been completed.



To halt during transmission, press [EXIT].

Viewing VC-2's Information (Information)

1. Move the cursor to Information.
2. Press the VALUE knob.

This indicates the version of the VC-2.

Chord Memory Menu

1. Press the [MENU] so it's litged, and access the MENU screen.
2. In the top menu screen, move the cursor to Chord Memory.
3. Press the VALUE knob.

Chord Memory

Parameter	Value	Explanation
Switch	OFF, ON	Switches the Multi Chord Memory (one-finger chord) function on/off. * If you want to synchronize to an external device, set Clk Src (p. 60) to EXTERNAL, then get your external device to transmit clock messages. If you fail to do this, chords will not play correctly.
ENTER→ Save	C–B	In the upper right of the screen, select the note (C–B) that you want to register, hold down the desired chord on the keyboard, and press the VALUE knob. The chord will be stored for the note you selected.
Grid Reso- lution	8TH-D – 64TH	Each note within the chord will be played separately at the timing interval you specify here. 8TH-D: Dotted eighth notes 8TH: Eighth notes 16TH-D: Dotted sixteenth notes 16TH: Sixteenth notes 32TH: Thirty-second notes 64TH: Sixty-fourth notes

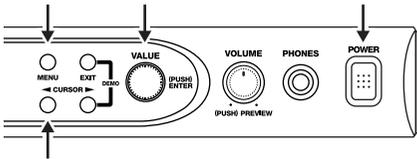
Backing Up Data to Your Computer

You can copy waves from your computer to the VC-2 card, or back up VC-2 card projects to your computer. You can also use your computer to play the VC-2 (VariOS) as a MIDI sound module.

Connecting the VariOS to Your Computer via USB

* First, you must install the driver from the VariOS Driver CD-ROM into your computer (included the VariOS package).

1. Make sure that the power of the VC-2 (VariOS) is turned off.
2. Connect the VariOS and your computer using a USB cable, then start up your computer.
3. Hold down the [MENU], [◀] and VALUE knob, turn on the power of VariOS.



4. Insert the VC-2 card into the PC CARD slot of the VariOS.
5. The VC-2 card inserted in the VariOS will be recognized by your computer as a drive, and will be mounted as the drive name shown in the following table.

OS	Drive Name
Windows 2000/Me	Removable Disk
Windows XP, Macintosh	VC-2

Copying Waves from Your Computer to the VC-2 Card

1. Connect the VC-2 and your computer via USB.
2. On your computer, prepare the wave file (WAV/AIFF format) that you want to copy.
3. Drag and drop that wave file onto the VC-2 drive icon.

Backing Up VC-2 Card Projects to Your Computer

1. Connect the VC-2 and your computer via USB.
2. Open the VC-2 drive icon.
3. Select the folder that contains the project you want to back up.
4. Copy the selected folder to your computer.

NOTE

You must back up the entire project folder. If you back up files individually, the file structure of the project will become inconsistent, possibly causing problems.

NOTE

Do not use your computer to delete or rename the backed-up files or folders.

NOTE

You must never overwrite or delete files that have an extension of BIN. Doing so may render the VC-2 unusable.

HINT

Entire project folders that you've backed up on your computer can also be written back to the VC-2 card.

Canceling the USB Connection

Stop the USB connection to safely disconnect the USB cable and turn off the power to the VariOS.

1. Perform the “Eject” operation on your computer.

- Windows XP/2000/Me:
In My Computer, right-click the “VC-2” or “Removable Disk” icon and execute “Eject.”
- Macintosh:
Select the VC-2 drive icon on your desktop, and either choose “Eject” from the “Special” menu, or drag the icon into the trash. The drive icon will disappear from the desktop, and the USB connection will be cancelled.

You can now safely disconnect the USB cable or turn off the power to the VariOS with the USB cable still connected.

Exchanging MIDI Messages with Your Computer

This is possible in the same way as for the VariOS itself.



For details, refer to “**VariOS User Guide.**”

Memo

Appendices

Effects List

MFX Parameters

MFX (Multi-Effects) provides 41 types of effect. This section explains the features of each MFX, and the functions of the parameters.



Explanations for each MFX Type are given on the following pages.

V-Synth	VariOS	Page
01: Parametric EQ	Para EQ	p. 70
02: Graphic EQ	Graph EQ	p. 70
03: Resonant Filter	ResoFilt	p. 71
04: Isolator and Filter	Isolator	p. 71
05: Distortion / OD	DS / OD	p. 72
06: Amp Simulator	Gtr Amp	p. 72
07: Auto Wah	Auto Wah	p. 73
08: Humanizer	Humanizer	p. 73
09: Dynamic Processor	Dynamic	p. 74
10: Tape Echo Simulator	TapeEcho	p. 74
11: Stereo Delay	St Delay	p. 74
12: Multi Tap Delay	TapDelay	p. 75
13: Reverse Delay	RvsDelay	p. 76
14: Vocal Echo	VocalEcho	p. 76
15: Band Pass Delay	BP Delay	p. 76
16: Analog Delay→Chorus	AD→Cho	p. 77
17: Digital Chorus	DigiCho	p. 77
18: Space Chorus	SpaceCho	p. 78
19: Hexa Chorus	Hex Cho	p. 78
20: Analog Flanger	Ana Flgr	p. 78
21: BOSS Flanger	BOSSFlgr	p. 78
22: Step Flanger	StepFlgr	p. 79
23: Analog Phaser	Ana Phsr	p. 79
24: Digital Phaser	DigiPhsr	p. 80
25: Rotary	Rotary	p. 80
26: Tremolo/ Auto Pan	Trem/Pan	p. 80
27: Stereo Pitch Shifter	PitchSft	p. 81
28: OD/DS→Cho/Flg	OD→Cho	p. 81
29: OD/DS→Delay	OD→Dly	p. 82
30: Cho/Flg→Delay	Cho→Dly	p. 82
31: Enh→Cho/Flg	Enh→Cho	p. 83
32: Enh→Delay	Enh→Dly	p. 83
33: Vocal Multi	VocalMt	p. 83
34: Guitar Multi	GuitarMt	p. 84
35: Bass Multi	BASS Mt	p. 85
36: E.Piano Multi	RhodesMt	p. 85
37: Keyboard Multi	Kbd Mt	p. 86

V-Synth	VariOS	Page
38: Phonograph	Phonogrp	p. 86
39: Radio Tuning	Radio	p. 87
40: Bit Rate Converter	Bit Conv	p. 87
41: Pseudo Stereo	PseudoSt	p. 87

01: Parametric EQ (Parametric Equalizer)

This is a 4 band (low range, midrange x 2, high range) stereo parametric equalizer.

Parameter	Value	Description
Low Freq	50–4000 Hz	Frequency of the low range
Low Gain	-15– +15 dB	Gain of the low range
Mid 1 Freq	50–20000 Hz	Frequency of the middle range 1
Mid 1 Q	0.5, 0.7, 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.
Mid 1 Gain	-15– +15 dB	Gain of the middle range 1
Mid 2 Freq	50–20000 Hz	Frequency of the middle range 2
Mid 2 Q	0.5, 0.7, 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.
Mid 2 Gain	-15– +15 dB	Gain of the middle range 2
Hi Freq	2000–20000 Hz	Frequency of the high range
Hi Gain	-15– +15 dB	Gain of the high range
Total Gain	-15– +15 dB	Output Level

02: Graphic EQ (Graphic Equalizer)

This simulates a 12-band stereo graphic equalizer.

Parameter	Value	Description
180Hz Gain	-15– +15 dB	Gain of each frequency band
250Hz Gain		
355Hz Gain		
500Hz Gain		
710Hz Gain		
1000Hz Gain		
1400Hz Gain		
2000Hz Gain		
2800Hz Gain		
4000Hz Gain		
5600Hz Gain		
8000Hz Gain		
Total Gain	-15– +15 dB	Output Level

03: Resonant Filter

It allows for cyclical control of the cutoff frequency using an LFO. It allows you to make drastic changes in the frequency response of the input signal by the cutoff frequency and feedback, making the sound brighter or darker, or giving it a distinctive character.

Parameter	Value	Description
Cutoff Freq	50–20000 Hz	Basic frequency of the filter The LFO will control the cutoff frequency with this value as its maximum level.
Resonance	0–127	Filter's resonance level Raising the setting increases resonance near the cutoff frequency, producing a uniquely characteristic sound.
Band Mode	LOW, MID, HIGH, LOW+MID, MID+HIGH, ALL	Frequency range to which the filter will be applied LOW: low frequency band MID: mid-range frequency HIGH: high frequency LOW+MID: low and middle range frequency MID+HIGH: middle and high range frequency ALL: all ranges
Sweep Waveform	TRI, SAWUP, SAWDN, SQR	LFO waveform TRI: Triangle wave SAWUP: Sawtooth Wave SAWDN: Sawtooth Wave SQR: Square wave
		
Sweep Rate	0.05–10.0 Hz, note	Frequency of the LFO modulation
Sweep Depth	0–127	Modulation depth of the LFO
Balance	DRY:100:0WET–DRY:0:100WET	Volume balance between the direct sound (DRY) and the effect sound (WET)

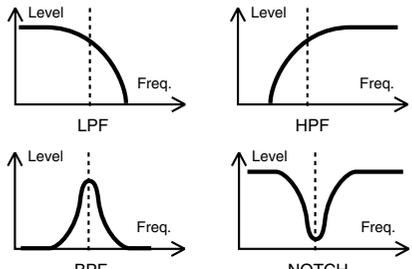
04: Isolator and Filter

A 3-band isolator, filter, and low booster are connected in stereo in series.

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

The filters allow you to modify the frequency response of the input sound widely and give sound a character.

The low booster emphasizes the bottom to create a heavy bass sound.

Parameter	Value	Description
Low Band Level	-60– +4 dB	These specify each level of the Low, Mid, and High frequency ranges. At -60 dB, the sound becomes inaudible. 0 dB is equivalent to the input level of the sound.
Mid Band Level		
Hi Band Level		
AP Low Sw	OFF, ON	Turns the Anti-Phase function on and off for the Low frequency ranges. When turned on, the counter-channel of stereo sound is inverted and added to the signal.
AP Low Level	0–127	Adjusts the level settings for the Low frequency ranges. Adjusting this level for certain frequencies allows you to lend emphasis to specific parts. (This is effective only for stereo source.)
AP Mid Sw	OFF, ON	Settings of the Anti-Phase function for the Middle frequency ranges The parameters are the same as for the Low frequency ranges.
AP Mid Level	0–127	
Filter Type	Type of filter THRU : no filter is used LPF : Passes frequencies below the Cutoff. BPF : Passes frequencies near the Cutoff. HPF : Passes frequencies above the Cutoff. NOTCH : Passes frequencies other than those near the Cutoff.	
		
Filter Slope	-12, -24 dB/O	Filter's attenuation slope -24 dB per octave: steep -12 dB per octave: gentle
Filter Cutoff	0–127	Cutoff frequency of the filter The closer to zero it is set, the lower the cutoff frequency becomes; set it closer to 127, and the cutoff frequency becomes higher.
Filter Resonance	0–127	Resonance level of the filter Raising the setting increases resonance near the cutoff frequency, giving the sound a special characteristic.
Filter Gain	0– +24 dB	Compensates for the volume dropped in the cut frequency range with some filters. The level of compensation increases as the value is increased, and raise the volume.
LowBoost Level	-15– +15 dB	Increasing this value gives you a heavier low end. * Depending on the Isolator and filter settings this effect may be hard to distinguish.

05: Distortion / OD (Distortion / Overdrive)

Overdrive produces a natural-sounding distortion similar to that produced by a vacuum tube amplifier. Distortion produces a more intense distortion than the overdrive effect.

Parameter	Value	Description
Input Mode	MONO, STEREO	Selects whether to input in stereo or in monaural. If MONO is selected, the left and right sound will be mixed, and input as monaural.
Drive Mode	OD, DS	Selects whether to use overdrive (OD) or distortion (DS).
Drive	0–127	Degree of distortion
Amp Sim Sw	OFF, ON	Turns the Amp Simulator on/off.
Amp Type	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp SMALL: small amp BUILT-IN: single-unit type amp 2-STACK: large double stack amp 3-STACK: large triple stack amp
Output Level	0–127	Output Level
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

06: Amp Simulator (Guitar Amp Simulator)

This is an effect that simulates an guitar amp.

Parameter	Value	Description
NS Sw	OFF, ON	Turns the noise suppressor on/off. The noise suppressor leaves the original sound unmodified, but mutes only the noise during the silent intervals.
NS Threshold	0–127	Adjusts the level at which the noise suppressor will begin to take effect. When the signal drops below the specified level, it will be muted.
NS Release	0–127	Sets the transition time from when the noise suppression starts to the point where the volume reaches 0.

Parameter	Value	Description
Amp Type (Amp)		Type of guitar amp JC-120: The sound of a Roland JC-120. CLEAN TWIN: The sound of a standard built-in type vacuum tube amp. MATCH DRIVE: The sound of a recent vacuum tube amp widely used in blues, rock, and fusion. BG LEAD: The sound of a vacuum tube amp representative of the late 70's and the 80's. MS1959 I: The sound of the large vacuum tube amp stack that was indispensable to the British hard rock of the 70's, with input I connected. MS1959 II: The same amp as MS1959 I, but with input II connected. MS1959 I+II: The same amp as MS1959 I, but with inputs I and II connected in parallel. SLDN LEAD: The sound of a vacuum tube amp usable in a wide variety of styles. METAL 5150: The sound of a large vacuum tube amp suitable for heavy metal. METAL LEAD: A metal lead sound with a distinctive mid-range. OD-1: The sound of the BOSS OD-1 compact effects processor. OD-2 TURBO: The sound of the BOSS OD-2 compact effects processor with the Turbo switch on. DISTORTION: Distortion sound. FUZZ: Fuzz sound.
Volume	0–127	Volume and degree of distortion of the amp
Bass	0–127	Tone of the bass/mid/treble range * Middle cannot be set if MATCH DRIVE is selected for the Amp Type.
Middle		
Treble		
Presence	0–127	Tone for the ultra high frequency range
Master Volume	0–127	Volume of the entire amp
Brightness Sw (Bright Sw)	OFF, ON	Turning this On will produce a sharper and brighter sound. * This parameter can be set if the Amp Type is set to JC-120, CLEAN TWIN, or BG LEAD.
Gain Sw	LOW, MID, HIGH	Degree of amp distortion
Sp Sim Sw	OFF, ON	Turns the Speaker Simulator on/off.
Sp Type	(see below)	Type of speaker
Mic Setting	1–10	Adjusts the location of the mic that is recording the sound of the speaker. Increasing this value will produce the effect of the mic being further away from the center of the speaker cone.
Mic Level	0–127	Volume of the microphone
Direct Level	0–127	Volume of the direct sound
Level	0–127	Output Level

Specifications of each Speaker Type

The speaker column indicates the diameter of each speaker unit (in inches) and the number of units.

Type	Cabinet	Speaker	Microphone
SMALL	small open-back enclosure	10	dynamic

Type	Cabinet	Speaker	Microphone
MIDDLE	open back enclosure	12 x 1	dynamic
JC-120	open back enclosure	12 x 2	dynamic
BUILT IN 1	open back enclosure	12 x 2	dynamic
BUILT IN 2	open back enclosure	12 x 2	condenser
BUILT IN 3	open back enclosure	12 x 2	condenser
BUILT IN 4	open back enclosure	12 x 2	condenser
BUILT IN 5	open back enclosure	12 x 2	condenser
BG STACK 1	sealed enclosure	12 x 2	condenser
BG STACK 2	large sealed enclosure	12 x 2	condenser
MS STACK 1	large sealed enclosure	12 x 4	condenser
MS STACK 2	large sealed enclosure	12 x 4	condenser
METAL STACK	large double stack	12 x 4	condenser

Recommended combination of pre-amp and speaker

Amp type	Speaker type
BG LEAD	BG STACK 1-2, MIDDLE
MS1959 II	BG STACK 1-2, METAL STACK
MS1959 I+II	BG STACK 1-2, METAL STACK
SLDN LEAD	BG STACK 1-2, METAL STACK
METAL 5150	BG STACK 1-2, METAL STACK
METAL LEAD	BG STACK 1-2, METAL STACK
OD-2 TURBO	BUILT IN 1-4
DISTORTION	BUILT IN 1-4
FUZZ	BUILT IN 1-4

07: Auto Wah

Wah is an effect that modifies the frequency characteristics of a filter over time, producing a unique tone. The wah effect can change in relation to the volume of the input signal, and/or cyclically.

Parameter	Value	Description
Filter Type	LPF, BPF	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
Polarity	DOWN, UP	When using the volume of the input signal to control the wah effect, this setting determines whether the frequency of the filter will be moved upward (UP) or downward (DOWN).
Frequency	0-127	Adjusts the frequency at which the wah effect will apply.
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.
Trigger Sens	0-127	Adjusts the sensitivity with which the wah effect is controlled.

Parameter	Value	Description
Rate	0.05-10.0 Hz, note	Frequency of modulation
Depth	0-127	Depth of modulation
Ps Low Freq	50-4000 Hz	Frequency of the low range
Ps Low Gain	-15- +15 dB	Gain of the low range
Ps Hi Freq	2000-20000 Hz	Frequency of the high range
Ps Hi Gain	-15- +15 dB	Gain of the high range

08: Humanizer

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

Parameter	Value	Description
Overdrive Sw	OFF, ON	Turns Drive on/off.
Drive	0-127	Degree of distortion
Vowel 1	a, e, i, o, u	First vowel
Vowel 2	a, e, i, o, u	Second vowel
Rate	0.05-10.0 Hz, note	Frequency at which the two vowels will be switched
Depth	0-127	Effect depth With a setting of 0, it will be fixed at Vowel 1.
Trigger Sens	-60-0 dB, LFO	Level at which the two vowels will be switched -60-0 dB: When the specified level is exceeded, the sound will change to the other vowel at the frequency (speed) specified by Rate. LFO: The two vowel sounds will alternate at the frequency specified by Rate, regardless of the level.
Ps Low Freq	50-4000 Hz	Frequency of the low range
Ps Low Gain	-15- +15 dB	Gain of the low range
Ps Hi Freq	2000-20000 Hz	Frequency of the high range
Ps Hi Gain	-15- +15 dB	Gain of the high range

09: Dynamic Processor (Stereo Dynamic Processor)

A comp/limiter, enhancer, 3-band equalizer, and noise suppressor are connected in series.

Comp/Limiter is able to use as a compressor, which controls inconsistencies in sound levels by suppressing high sound levels while lifting weaker signals, or as a limiter that prevents the signal from reaching exceedingly high levels.

Enhancer regulates the high-end overtones, clarifying the sound and the sound contour.

3-Band Equalizer works in three frequency ranges: Low, Mid, and High. You can set the frequencies and boost or cut the level.

Noise Suppressor leaves the original sound unmodified, but mutes only the noise during the silent intervals.

Parameter	Value	Description
Comp Sw	OFF, ON	Turns the comp/limiter on/off.
Comp Threshold	-60-0 dB	Sets the volume level at which the compression begins.
Comp Attack	0-127	Sets the time after the sound volume is crossed the compressor threshold until compression begins.
Comp Release	0-127	Specifies the time from when the volume drops below the compressor threshold until compression is no longer applied.
Comp Ratio	1.5:1, 2:1, 4:1, 100:1	Sets the "source sound:output sound" compression ratio.
Comp Gain	-60- +12 dB	Output gain
Enhance Sw	OFF, ON	Turns the enhancer on/off.
Enhance Sens	0-127	Sensitivity of the enhancer
Enhance Frequency	0-127	Sets the lower limit of the frequencies to which the enhancement effect is added.
Enhance Mix Level	0-127	Level of the overtones generated by the enhancer
Enhance Level	0-127	Volume of the enhancer sound
EQ Low Freq	50-4000 Hz	Frequency of the low range
EQ Low Gain	-15- +15 dB	Gain of the low range
EQ Mid Freq	50-20000 Hz	Frequency of the middle range
EQ Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Gain of the middle range Set a higher value for Q to narrow the range to be affected.
EQ Mid Gain	-15- +15 dB	Gain of the middle range
EQ Hi Freq	2000-20000 Hz	Frequency of the high range
EQ Hi Gain	-15- +15 dB	Gain of the high range
NS Sw	OFF, ON	Turns the noise suppressor on/off.
NS Threshold	0-127	Adjusts the level at which the noise suppressor will begin to take effect. When the signal drops below the specified level, it will be muted.
NS Release	0-127	Sets the transition time from when the noise suppression starts to the point where the volume reaches 0.

10: Tape Echo Simulator

This virtual tape echo gives you real tape delay sound. This simulates the tape echo part of Roland's RE-201 Space Echo.

Parameter	Value	Description
Mode	S, M, L, S+M, S+L, M+L, S+M+L	Sets the combination of playback heads to be used. The RE-201 had three playback heads to make different delay times (Short, Medium, and Long delay) at once. For example, to use the short and middle heads, select S+M.
Repeat Rate	0-127	Sets the tape speed. This corresponds to the delay time in a contemporary delay effect.
Intensity	0-127	Sets the repeat times of the delayed sound. This is analogous to a contemporary delay's feedback setting.
Bass	-100- +100	These are the echo sound's bass and treble adjustments. When set to 0, they make no change to the sound.
Treble		
Head S Pan	L63-63R	These are the pan (left-right) settings for each of the heads for Short, Medium, and Long delay time. * This parameter does not appear on the original RE-201.
Head M Pan		
Head L Pan		
Tape Distortion (Tape DS)	0-5	Adds the distortion characteristic of tape. The distortion gets more intense as the value is increased.
W/F Rate	0-127	Frequency of the wow and flutter modulation The wavering of multiple pitches that appears from tape wear and irregularities in rotation is called wow and flutter.
W/F Depth	0-127	Modulation depth of the wow and flutter
Echo Level	0-127	Volume of the echo sound.

11: Stereo Delay

This is a stereo delay. Depending on the length of the delay you set, you can get long echoes, thick sounds, or spatial sounds.

Parameter	Value	Description
Mode	MONO, STEREO, ALTERNATE	Switches stereo, monaural, or alternate. MONO: This is a single-input, dual-output delay. Stereo sound (left and right) are mixed before being input. STEREO: This is a dual-input, dual-output delay. The delay sound output features the same stereo placement as that of the input. ALTERNATE: The left and right delay sound output alternately. (Alternate delay)

Parameter	Value	Description
Delay Time	0–1300 ms (MONO), 0–650 ms (STEREO, ALTERNATE), note	Adjusts the delay time from the direct sound until the delay sound is heard.
L-R Shift	0–650 ms, note	Of the left and right delay sounds, the delay time will be increased for only one side. If the L-R order is L→R, the R sound will be later. In the case of R→L, the L sound will be later. When the mode is set to MONO or ALTERNATE, this setting will be ignored.
L-R Order	L→R, R→L	In STEREO or ALTERNATE mode, this setting determines which of the left or right sides has the delay sound before the other L→R: The left side is expressed first R→L: The right side is expressed first * In MONO mode, this setting will be ignored.
Feedback	-98– +98 %	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the delay sound quicker than other bands, which makes for a clearer delay effect.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Balance	DRY100:0WET–DRY0:100WET	Volume balance between the direct sound (DRY) and the delay sound (WET)
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

12: Multi Tap Delay

The effect has five delays. Each of the Delay Time parameters can be specified as a note length of the selected tempo. You can also set the panning and level of each delay sound.

Parameter	Value	Description
Delay 1–5	0–1300 ms, note	Specifies the delay time from the original sound until each delay sound (Delay 1/2/3/4/5) is heard.
Fbk Dly Time	0–1300 ms, note	Adjusts the delay time for the feedback sound
Feedback	-98– +98 %	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Delay 1–5 Level	0–127	Adjusts the volume of each delay sound (Delay 1/2/3/4/5)
Delay 1–5 Pan	L63–63R	Adjusts the pan of each delay sound (Delay 1/2/3/4/5)
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the delay sound quicker than other bands, which makes for a clearer delay effect.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

13: Reverse Delay

Adds the reverse of the input sound as the delay sound.

Parameter	Value	Description
Threshold	0–127	Specifies the input level at which the delay will begin to apply.
Rvs Dly Time	0–650 ms, note	Specifies the delay time from the original sound until the delay sound is heard.
Rvs Feed-back	-98– +98 %	Adjusts the proportion of the reverse delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the delay sound quicker than other bands, which makes for a clearer delay effect.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Balance	DRY100:0WET–DRY0:100WET	Volume balance between the direct sound (DRY) and the effect sound (WET)
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

14: Vocal Echo

This effect simulates a karaoke echo.

Parameter	Value	Description
Delay Time	0–650 ms, note	Adjusts the delay time from the direct sound until the delay sound is heard.
Pre LPF Freq	500–15000 Hz, THRU	Sets the filter's cutoff frequency (THRU: no filter is used)
Mod Rate	0.05–10.0 Hz, note	Specifies the modulation speed of the modulation effect.
Mod Depth	0–127	Specifies the modulation depth of the modulation effect.
Diffusion	0–100	Specifies the spaciousness of the delay sound.
Feedback	-98– +98 %	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.

Parameter	Value	Description
Hi Damp Freq	500–15000 Hz, THRU	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Echo Level	0–127	Volume of the echo sound
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

15: Band Pass Delay

This is a delay with a band pass filter (a filter that outputs only a specified frequency range) on each of five delays. A phaser is included before the delay. Phaser is an effect that adds a phase-shifted sound to the original sound to create time-varying change, modulating the sound.

Parameter	Value	Description
Phaser Manual	0–127	Specifies the center frequency at which the sound is modulated.
Phaser Rate	0.05–10.0 Hz, note	Specifies the frequency of modulation.
Phaser Depth	0–127	Specifies the depth of modulation.
Phaser Resonance	0–127	Specifies the amount of feedback for the phaser. Higher settings will give the sound a stronger character.
Phaser Mix Level	0–127	Specifies the volume of the phase-shifted sound, relative to the direct sound.
Delay Time	0–1300 ms, note	Adjusts the delay time from the direct sound until the each delay sound is heard.
Fbk Dly Time	0–1300 ms, note	Adjusts the delay time for the feedback sound.
Dly Time Dev	0–1300 ms, note	Specifies the differences in delay time for each of the delay sounds.
Delay Level	0–127	Adjusts the volume of each delay sound.
Delay Feed-back	-98– +98 %	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Delay Pan Type	1–10	Specifies the pan of each delay sound. Ten settings are provided as various panning combinations of the delay sounds (see below).
BPF 1–5 Freq	50–20000 Hz	Sets the center frequency for each band pass filter (1–5).
BPF 1/2 Q	0.3–24.0	Specify the output bandwidth for each band pass filter (1–5).
BPF 3/4/5 Q		

Parameter	Value	Description
Balance	DRY100:0WET-DRY0:100WET	Volume balance between the direct sound (DRY) and the delay sound (WET)

Delay Pan Type

Values	Dly 1	Dly 2	Dly 3	Dly 4	Dly 5
1	L63	L32	0	32R	63R
2	L63	32R	L32	63R	0
3	L63	63R	L32	32R	0
4	32R	L32	L63	0	63R
5	63R	0	L63	L32	32R
6	L32	32R	L63	63R	0
7	0	63R	L63	32R	L32
8	0	63R	L32	32R	L63
9	0	32R	L32	63R	L63
10	63R	32R	0	L32	L63

16: Analog Delay→Chorus

This effect reproduces the sound of the BOSS CE-1 Chorus Ensemble. To reproduce the sound of the unit at the time, a monaural analog-type delay is first inserted in series.

Parameter	Value	Description
Dly Sw	OFF, ON	Turns the delay on/off.
Dly Repeat Rate	0-127	Corresponds to the delay time in a delay effects.
Dly Intensity	0-127	Corresponds to the feedback setting in a delay effects.
Dly Level	0-127	Sets the volume of the delay sound.
Chorus Sw	OFF, ON	Turns chorus or vibrato on/off.
Chorus Mode	CHORUS, VIBRATO	Switches the sound between chorus and vibrato modes.
Chorus Intensity	0-127	When Chorus Mode is CHORUS, this sets the pitch vibrato speed.
Vibrato Depth	0-127	When Chorus Mode is VIBRATO, this sets the pitch vibrato depth.
Vibrato Rate	0-127	When Chorus Mode is VIBRATO, this sets the pitch vibrato speed.
Chorus Out Mode	MONO, ST-1, ST-2	Switches the output format (mono/stereo). MONO: Output is monaural. ST-1: Chorus sound of the pitch vibration which phase is inverted between left and right is mixed with the source sound. This is a broader chorus, with a weaker feeling of placement. ST-2: The left output contains the source sound, and the right side has the wavering chorus sound.

17: Digital Chorus

This is a stereo chorus or flanger. Equalizers are provided before (Pre) and after (Post) the chorus (or flanger).

Parameter	Value	Description
Mode	CHORUS, FLANGER	Selects either chorus or flanger.
Rate	0.05-10.0 Hz, note	Sets the cycle for the chorus or flanger sound undulations.
Depth	0-127	Adjusts the depth of modulation for the chorus or flanger.
Phase	0-180 deg	Specifies the spaciousness of the chorus or flanger sound.
Pre Low Freq	50-4000 Hz	Frequency of the low range (Pre)
Pre Low Gain	-15- +15 dB	Gain of the low range (Pre)
Pre Hi Freq	2000-20000 Hz	Frequency of the high range (Pre)
Pre Hi Gain	-15- +15 dB	Gain of the high range (Pre)
Pre Dly Time	0-50.0 ms	Adjusts the delay time from the direct sound until the chorus or flanger sound is heard.
Feedback	-98- +98 %	Adjusts the proportion of the chorus or flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.
Xover Low-Freq	50-4000 Hz	Attenuates the effect in the range below the specified frequency.
Xover Low Gain	-36-0 dB	Specifies how greatly the low range will be attenuated.
Xover HiFreq	2000-20000 Hz	Attenuates the effect in the range above the specified frequency.
Xover Hi Gain	-36-0 dB	Specifies how greatly the high range will be attenuated.
Modulation Level	0-127	Volume of the chorus or flanger sound.
Ps Low Freq	50-4000 Hz	Frequency of the low range (Post)
Ps Low Gain	-15- +15 dB	Gain of the low range (Post)
Ps Hi Freq	2000-20000 Hz	Frequency of the high range (Post)
Ps Hi Gain	-15- +15 dB	Gain of the high range (Post)

18: Space Chorus

This effect reproduces the sound of Roland's SDD-320 spatial expression effects. Greater breadth is added.

Parameter	Value	Description
Mode	1, 2, 3, 4, 1+4, 2+4, 3+4	Selects the way in the chorus will change. The SDD-320 features four mode buttons for changing the effect. This setting determines which buttons are to be pressed. ("1+4" represents the condition when Buttons 1 and 4 are pressed simultaneously.)
Chorus Level	0–127	Volume level of the chorus sound
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

19: Hexa Chorus

Hexa-chorus is a six-stage chorus which adds depth and spaciousness to the sound. (Six chorus sounds with different delay times are overlaid.) An equalizer is provided before (Pre) and after (Post) the hexa chorus.

Parameter	Value	Description
Pre Dly Time	0–50.0 ms	Adjusts the delay time from the direct sound until the chorus sound is heard.
Pre Dly Dev	0–50.0 ms	Specifies the differences in Pre Delay time for each of the chorus sounds
Rate	0.05–10.0 Hz, note	Specifies the modulation frequency of the chorus sound.
Depth	0–127	Specifies the modulation depth of the chorus sound.
Depth Deviation	0–127	Specifies the difference in modulation depth between each of the chorus sounds.
Pan Deviation	L63–63R	Specifies the difference in stereo position between each of the chorus sounds. 0: All of the chorus sounds will be panned to the center. L20/R20: each chorus sound will be placed in 30 degree intervals relative to the center position.
Chorus Level	0–127	Volume level of the chorus sound
Pre Low Freq	50–4000 Hz	Frequency of the low range (Pre)
Pre Low Gain	-15– +15 dB	Gain of the low range (Pre)
Pre Hi Freq	2000–20000 Hz	Frequency of the high range (Pre)
Pre Hi Gain	-15– +15 dB	Gain of the high range (Pre)
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

20: Analog Flanger

This effect reproduces the sound of Roland's SBF-325 analog flanger. You can get three different types of flanger sounds (adding a metallic swelling sound to the source sound) and chorus like effect.

Parameter	Value	Description
Mode	FL1, FL2, FL3, CHO	Sets the effect type. FL1: A general monaural flanger FL2: A stereo flanger that utilizes the stereo placement of the source sound FL3: A cross mix flanger that providing a more intense effect CHO: Chorus effect
Rate	0.02–5.00 Hz, note	Sets the rate of the swelling of the flanger sound.
Depth	0–127	Specifies the modulation depth of the flanger sound.
Manual	0–127	Adjusts the center frequency to which the flanger effect is applied.
Feedback	0–127	Sets the intensity of the flanger's effect. When the mode is set to CHO, this setting will be ignored.
CH-R Mod Phase	NORM, INV	Sets the phase of the right channel. This is usually set to Normal (NORM). Setting this to Invert (INV) inverts the phase of the modulation (rise and fall) in the right channel.
CH-L Phase	NORM, INV	Sets the phase of the left and right channels when the source sound is mixed with the flanging sound. NORM: Positive phase (+) INV: negative phase (-)
CH-R Phase		

21: BOSS Flanger

This effect features a pair of the same flanger circuits used in the BOSS compact flangers, connected in parallel for stereo input. This adds a particular metallic-sounding modulation to the source sound.

Parameter	Value	Description
Type	NORMAL, HI-BAND	Selects the model of flanger simulated. NORMAL: Normal type (BOSS BF-2) HI-BAND: High-Band type (BOSS HF-2). Setting HI-B raise the flanging sound one octave above that at the NORM.
Manual	0–127	Sets the center frequency for the effect.
Depth	0–127	Sets the depth of the swelling of the flanger sound.
Rate	0.05–10.0 Hz, note	Adjusts the modulation speed of the flanger effect.
Resonance	0–127	Sets the intensity of the flanger's effect. * If the Feedback Mode is CROSS, this setting is ignored.

Parameter	Value	Description
Phase	0–180 deg	Specifies the spaciousness of the flanger sound.
Feedback Mode	NORMAL, CROSS	Specifies the input destination to which the flanger sound will be returned. NORMAL: The left flanger sound will be returned to the left input, and the right flanger sound to the right input. CROSS: The left flanger sound will be returned to the right input, and the right flanger sound to the left input.
Feedback	-98– +98 %	This setting makes the flanging sound of each of right and left channels return to the input of the opposite channel. Negative (-) settings will invert the phase. * When the Feedback Mode is set to NORMAL, this setting will be ignored.
Cross Mix Level	-100– +100	This setting makes the flanging sound from each of the right and left channels mix it with the flanging sound of the opposite channel. Negative (-) settings will invert the phase.
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

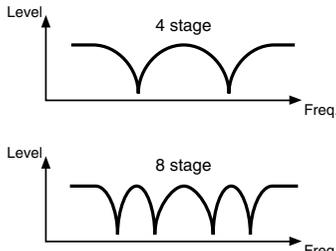
22: Step Flanger

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

Parameter	Value	Description
Pre Dly Time	0–50.0 ms	Specifies the time delay from the original sound until the flanger sound is heard.
Rate	0.05–10.0 Hz, note	Specifies the modulation frequency of the flanger sound.
Depth	0–127	Specifies the modulation depth of the flanger sound.
Feedback	-98– +98 %	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.
Phase	0–180 deg	Specifies the spaciousness of the flanger sound.
Step Rate	0.05–10.0 Hz, note	Specifies the frequency of pitch change.
Flanger Level	0–127	Volume of the flanger sound
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

23: Analog Phaser

This effect features two analog-type phasers arranged in parallel, making it stereo compatible. The sound as it cyclically drifts in and out of phase is added to the source sound, creating the modulation with the characteristic of phasers.

Parameter	Value	Description
Shift Mode	4STAGE, 8STAGE	Sets the number of stages in the phase shift circuit (four (4STAGE) or eight (8STAGE)). Setting this to eight stages (8STAGE) increases the number of the frequency points that sound is canceled, giving a sharper effect.
		
Center Freq	0–127	Sets the center frequency to which the phaser effect is applied. Increasing this value moves the effect point of the phaser into higher frequency ranges.
Resonance	0–127	Amount of feedback Increasing this value gives a more distinctive sound to the effect.
LFO 1/2 Rate	0.02–5.00 Hz, note	Sets the rate of the swelling sound.
LFO 1/2 Depth	0–127	Specifies the depth of modulation.
LFO 1/2 Phase	NORM, INV	Sets the phase of both left and right swelling. NORM: The left and right phase will be the same. INV: The left and right phase will be opposite.

24: Digital Phaser

Phaser is an effect that adds a phase-shifted sound to the original sound to create time-varying change, modulating the sound.

Parameter	Value	Description
Shift Mode	4STAGE, 8STAGE	Sets the number of stages in the phase shift circuit (four (4STAGE) or eight (8STAGE)). Setting this to eight stages (8STAGE) increases the number of the frequency points that sound is canceled, giving a sharper effect.
Manual	0–127	Specifies the center frequency at which the sound is modulated.
Rate	0.05–10.0 Hz, note	Specifies the frequency of modulation.
Depth	0–127	Specifies the depth of modulation.
Phase	NORM, INV	Sets the phase of both left and right swelling. NORM: The left and right phase will be the same. INV: The left and right phase will be opposite.
Resonance	0–127	Specifies the amount of feedback for the phaser. Higher settings will give the sound a stronger character.
Mix Level	0–127	Volume of the phase-shifted sound, relative to the direct sound
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

25: Rotary

The Rotary effect simulates the sound of the rotary speakers often used with the electric organs of the past. Since the movement of the high range and low range rotors can be set independently, the unique type of modulation characteristic of these speakers can be simulated quite closely. This effect is most suitable for electric organ Patches.

Parameter	Value	Description
Speed	SLOW, FAST	Simultaneously switch the rotational speed of the low frequency rotor and high frequency rotor SLOW: Slows down the rotation to the Slow Rate. FAST: Speeds up the rotation to the Fast Rate.
Low Slow Rate	0.05–10.0 Hz, note	Slow speed (SLOW) of the low frequency rotor
Low Fast Rate	0.05–10.0 Hz, note	Fast speed (FAST) of the low frequency rotor
Low Acceleration	0–15	Adjusts the time it takes the low frequency rotor to reach the newly selected speed when switching from fast to slow (or slow to fast) speed.
Low Level	0–127	Volume of the low frequency rotor
Hi Slow Rate	0.05–10.0 Hz, note	Slow speed (SLOW) of the high frequency rotor
Hi Fast Rate	0.05–10.0 Hz, note	Fast speed (FAST) of the high frequency rotor
Hi Acceleration	0–15	Adjusts the time it takes the high frequency rotor to reach the newly selected speed when switching from fast to slow (or slow to fast) speed.
Hi Level	0–127	Volume of the high frequency rotor
Separation	0–127	Spatial dispersion of the sound
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

26: Tremolo/Auto Pan

This is a stereo tremolo or auto-pan effect. Tremolo cyclically modulates the volume to add tremolo effect to the sound. The Auto Pan effect cyclically modulates the stereo location of the sound.

Parameter	Value	Description
Mode	TREMOLO, AUTO PAN	Selects whether to use tremolo or auto pan.
Waveform	TRI, SAWUP, SAWDN, SQR, SIN	Selects the type of modulation. TRI: Triangle wave SAWUP/SAWDN: Sawtooth Wave SQR: Square wave SIN: Sine wave
Rate	0.05–10.0 Hz, note	Frequency of modulation
Depth	0–127	Depth of modulation

Parameter	Value	Description
Balance	DRY100:0WET- DRY0:100WET	Volume balance between the direct sound (DRY) and the effect sound (WET)
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

27: Stereo Pitch Shifter

This effect features two pitch shifters arranged in parallel, making it stereo compatible. It can shift the pitch of the input signal up to one octave up or down.

Parameter	Value	Description
Input Mode	MONO, STEREO	Selects either stereo input or monaural input.
Grade	1–5	Sets the grade of the effect sound. The higher the value is set, the more natural-sounding can be obtained; however, this increases the delay from the source sound as well.
Coarse Pitch A/B	-12– +12 semitone	Specifies the pitch shift amount in semitones for pitch shift A or B.
Fine Pitch A/B	-100– +100 cent	Adjusts the pitch shift amount in 2-cent units (1 cent = 1/100 of a semitone) for pitch shift A or B.
Pre Delay A/B	0–500 ms	Adjusts the delay time from the direct sound until the pitch shift A or B sound is heard.
Level A/B	0–127	Volume of the pitch shift A or B sound.
Pan A/B	L63–63R	Pan of the pitch shift A or B sound.
Direct Level	0–127	Volume of the direct sound.
Feedback	-98– +98 %	Adjusts the proportion of the pitch shift sound that is fed back into the effect. Negative (-) settings will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the pitch shift sound quicker than other bands.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

28: OD/DS→Cho/Flg (Overdrive/ Distortion→Chorus/Flanger)

This effect connects either Overdrive or Distortion and either Chorus or Flanger.

Parameter	Value	Description
Drive Mode	OD, DS	Selects whether to use overdrive (OD) or distortion (DS).
Drive	0–127	Degree of distortion
Amp Sim Sw	OFF, ON	Turns the amp simulator on/off.
Amp Type	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp SMALL: small amp BUILT-IN: single-unit type amp 2-STACK: large double stack amp 3-STACK: large triple stack amp
Distortion (DS) Level	0–127	Volume of the overdrive or distortion sound.
Mod Mode	CHORUS, FLANGER	Selects whether to use chorus or flanger.
Mod Rate	0.05–10.0 Hz, note	Adjusts the speed of modulation for the chorus or flanger.
Mod Depth	0–127	Adjusts the depth of modulation for the chorus or flanger.
Mod Phase	0–180 deg	Sets how the chorus or flanger sound is spread.
Mod Pre Delay	0–50.0 ms	Adjusts the delay time from the direct sound until the chorus or flanger sound is heard.
Mod Feedback	-98– +98 %	Adjusts the proportion of the effect sound that is fed back into the effect. Negative (-) settings will invert the phase.
Xover Low-Freq	50–4000 Hz	Attenuates the effect in the range below the specified frequency.
Xover Low Gain	-36–0 dB	Specifies how greatly the low range will be attenuated.
Xover Hi-Freq	2000–20000 Hz	Attenuates the effect in the range above the specified frequency.
Xover Hi Gain	-36–0 dB	Specifies how greatly the high range will be attenuated.
Mod Level	0–127	Volume of the chorus or flanger sound.
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

29: OD/DS→Delay (Overdrive/Distortion→Delay)

This effect connects either Overdrive or Distortion and Delay in series.

Parameter	Value	Description
Drive Mode	OD, DS	Selects whether to use overdrive (OD) or distortion (DS).
Drive	0–127	Degree of distortion
Amp Sim Sw	OFF, ON	Turns the amp simulator on/off.
Amp Type	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp SMALL: small amp BUILT-IN: single-unit type amp 2-STACK: large double stack amp 3-STACK: large triple stack amp
Distortion (DS) Level	0–127	Volume of the overdrive or distortion sound.
Delay Time	0–1300 ms, note	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay Feed-back	-98– +98 %	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the delay sound quicker than other bands, which makes for a clearer delay effect.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Delay Level	0–127	Volume of the delay sound.
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

30: Cho/Flg→Delay (Chorus/Flanger→Delay)

This effect connects either Chorus or Flanger and Delay in series.

Parameter	Value	Description
Mod Mode	CHORUS, FLANGER	Selects whether to use chorus or flanger.
Mod Rate	0.05–10.0 Hz, note	Adjusts the speed of modulation for the chorus or flanger.

Parameter	Value	Description
Mod Depth	0–127	Adjusts the depth of modulation for the chorus or flanger.
Mod Phase	0–180 deg	Sets how the chorus or flanger sound is spread.
Mod Pre Delay	0–50.0 ms	Adjusts the delay time from the direct sound until the chorus or flanger sound is heard.
Mod Feed-back	-98– +98 %	Adjusts the proportion of the effect sound that is fed back into the effect. Negative (-) settings will invert the phase.
Xover Low-Freq	50–4000 Hz	Attenuates the effect in the range below the specified frequency.
Xover Low Gain	-36–0 dB	Specifies how greatly the low range will be attenuated.
Xover Hi-Freq	2000–20000 Hz	Attenuates the effect in the range above the specified frequency.
Xover Hi Gain	-36–0 dB	Specifies how greatly the high range will be attenuated.
Mod Level	0–127	Volume of the chorus or flanger sound.
Delay Time	0–1300 ms, note	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay Feed-back	-98– +98 %	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the delay sound quicker than other bands, which makes for a clearer delay effect.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Delay Level	0–127	Volume of the delay sound.
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

31: Enh→Cho/Flg (Enhancer→Chorus/Flanger)

This effect connects Enhancer and either Chorus or Flanger in series.

Parameter	Value	Description
Enhance Sens	0–127	Sensitivity of the enhancer
Enhance Frequency	0–127	Sets the lower limit of the frequencies to which the enhancement effect is added.
Enhance Mix Level	0–127	Level of the overtones generated by the enhancer
Enhance Level	0–127	Volume of the enhancer sound
Mod Mode	CHORUS, FLANGER	Selects whether to use chorus or flanger.
Mod Rate	0.05–10.0 Hz, note	Adjusts the speed of modulation for the chorus or flanger.
Mod Depth	0–127	Adjusts the depth of modulation for the chorus or flanger.
Mod Phase	0–180 deg	Sets how the chorus or flanger sound is spread.
Mod Pre Delay	0–50.0 ms	Adjusts the delay time from the direct sound until the chorus or flanger sound is heard.
Mod Feedback	-98– +98 %	Adjusts the proportion of the effect sound that is fed back into the effect. Negative (-) settings will invert the phase.
Xover Low Freq	50–4000 Hz	Attenuates the effect in the range below the specified frequency.
Xover Low Gain	-36–0 dB	Specifies how greatly the low range will be attenuated.
Xover Hi Freq	2000–20000 Hz	Attenuates the effect in the range above the specified frequency.
Xover Hi Gain	-36–0 dB	Specifies how greatly the high range will be attenuated.
Mod Level	0–127	Volume of the chorus or flanger sound.
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

32: Enh→Delay (Enhancer→Delay)

This effect connects an Enhancer and a Delay in series.

Parameter	Value	Description
Enhance Sens	0–127	Sensitivity of the enhancer
Enhance Frequency	0–127	Sets the lower limit of the frequencies to which the enhancement effect is added.
Enhance Mix Level	0–127	Level of the overtones generated by the enhancer
Enhance Level	0–127	Volume of the enhancer sound
Delay Time	0–1300 ms, note	Adjusts the delay time from the direct sound until the delay sound is heard.

Parameter	Value	Description
Delay Feedback	-98– +98 %	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the delay sound quicker than other bands, which makes for a clearer delay effect.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Delay Level	0–127	Volume of the delay sound.
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

33: Vocal Multi

A limiter/de-esser, enhancer, 3-band equalizer, and delay are connected in series.

A limiter holds down high signal levels to prevent distortion.

A de-esser cuts the sibilant sounds of a voice, producing a gentler tone.

Parameter	Value	Description
Limtr Mode	LIMITER, DE-ESSER	Selects whether the effect will function as a limiter or as a de-esser. * If the Limtr Mode is DE-ESSER, the limiter settings are ignored. Conversely, if the Limtr Mode is LIMITER, the de-esser settings are ignored.
Limtr Threshold	-60–0 dB	Adjusts the level (Threshold Level) at which the limiter will begin to operate.
Limtr Release	0–127	Adjusts the time until when the limiter will turn off after the input level falls below the threshold level.
Limtr Gain	-60– +12 dB	Adjusts the gain of the sound that passes through the limiter.
DE Sens	0–127	Adjusts the sensitivity relative to the input volume, which controls how the effect is applied.
DE Frequency	1000–10000 Hz	Adjusts the frequency at which the de-esser effect will apply.

Effects List

Parameter	Value	Description
Enhan Sens	0–127	Sensitivity of the enhancer
Enhan Frequency	0–127	Sets the lower limit of the frequencies to which the enhancement effect is added.
Enhan Mix Level	0–127	Level of the overtones generated by the enhancer
Enhan Level	0–127	Volume of the enhancer sound
EQ Low Freq	50–4000 Hz	Frequency of the low range
EQ Low Gain	-15– +15 dB	Gain of the low range
EQ Mid Freq	50–20000 Hz	Frequency of the middle range
EQ Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Gain of the middle range Set a higher value for Q to narrow the range to be affected.
EQ Mid Gain	-15– +15 dB	Gain of the middle range
EQ Hi Freq	2000–20000 Hz	Frequency of the high range
EQ Hi Gain	-15– +15 dB	Gain of the high range
Delay Time	0–1300 ms, note	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay Feedback	-98– +98 %	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the delay sound quicker than other bands, which makes for a clearer delay effect.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Delay Level	0–127	Volume of the delay sound.

34: Guitar Multi

Guitar Multi provides Comp/Limiter, Overdrive or Distortion, Chorus or Flanger, and Delay effects connected in series.

Parameter	Value	Description
Comp Sw	OFF, ON	Turns the comp/limiter on/off.
Comp Threshold	-60–0 dB	Sets the volume level at which the compression begins.
Comp Attack	0–127	Sets the time after the sound volume is crossed the compressor threshold until compression begins.

Parameter	Value	Description
Comp Release	0–127	Specifies the time from when the volume drops below the compressor threshold until compression is no longer applied.
Comp Ratio	1.5:1, 2:1, 4:1, 100:1	Sets the “source sound:output sound” compression ratio.
Comp Gain	-60– +12 dB	Adjusts the output gain.
Od/Ds Sw	OFF, ON	Selects whether to use overdrive or distortion.
Drive Mode	OD, DS	Selects whether to use overdrive (OD) or distortion (DS).
Drive	0–127	Degree of distortion
Amp Sim Sw	OFF, ON	Turns the amp simulator on/off.
Amp Type	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp SMALL: small amp BUILT-IN: single-unit type amp 2-STACK: large double stack amp 3-STACK: large triple stack amp
Distortion (DS) Level	0–127	Volume of the overdrive or distortion sound.
Mod Mode	CHORUS, FLANGER	Selects whether to use chorus or flanger.
Mod Rate	0.05–10.0 Hz, note	Adjusts the speed of modulation for the chorus or flanger.
Mod Depth	0–127	Adjusts the depth of modulation for the chorus or flanger.
Mod Phase	0–180 deg	Sets how the chorus or flanger sound is spread.
Mod Pre Delay	0–50.0 ms	Adjusts the delay time from the direct sound until the chorus or flanger sound is heard.
Mod Feedback	-98– +98 %	Adjusts the proportion of the effect sound that is fed back into the effect. Negative (-) settings will invert the phase.
Mod Xover-LPF	500–15000 Hz, THRU	Adjusts the cutoff frequency of the low pass filter. (THRU: no filter is used)
Mod Xover-HPF	THRU, 50–800 Hz	Adjusts the cutoff frequency of the high pass filter. (THRU: no filter is used)
Mod Level	0–127	Volume of the chorus or flanger sound.
Delay Time	0–1300 ms, note	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay Feedback	-98– +98 %	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Hi Damp Freq	500–15000 Hz, THRU	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Delay Level	0–127	Volume of the delay sound.

35: Bass Multi

Bass Multi provides Comp/Limiter, Overdrive or Distortion, 3-band equalizer, and Chorus or Flanger effects connected in series. This algorithm is a multi-effects for bass.

Parameter	Value	Description
Comp Sw	OFF, ON	Turns the comp/limiter on/off.
Comp Threshold	-60-0 dB	Sets the volume level at which the compression begins.
Comp Attack	0-127	Sets the time after the sound volume is crossed the compressor threshold until compression begins.
Comp Release	0-127	Specifies the time from when the volume drops below the compressor threshold until compression is no longer applied.
Comp Ratio	1.5:1, 2:1, 4:1, 100:1	Sets the "source sound:output sound" compression ratio.
Comp Gain	-60- +12 dB	Adjusts the output gain.
Od/Ds Sw	OFF, ON	Selects whether to use overdrive or distortion.
Drive Mode	OD, DS	Selects whether to use overdrive (OD) or distortion (DS).
Drive	0-127	Degree of distortion
Amp Sim Sw	OFF, ON	Turns the amp simulator on/off.
Amp Type	SMALL, BUILT-IN, 2-STACK (STACK)	Type of guitar amp SMALL: small amp BUILT-IN: single-unit type amp 2-STACK: large double stack amp
Distortion (DS) Level	0-127	Volume of the overdrive or distortion sound.
EQ Low Freq	50-4000 Hz	Frequency of the low range
EQ Low Gain	-15- +15 dB	Gain of the low range
EQ Mid Freq	50-20000 Hz	Frequency of the middle range
EQ Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Gain of the middle range Set a higher value for Q to narrow the range to be affected.
EQ Mid Gain	-15- +15 dB	Gain of the middle range
EQ Hi Freq	2000-20000 Hz	Frequency of the high range
EQ Hi Gain	-15- +15 dB	Gain of the high range
Mod Mode	CHORUS, FLANGER	Selects whether to use chorus or flanger.
Mod Rate	0.05-10.0 Hz, note	Adjusts the speed of modulation for the chorus or flanger.
Mod Depth	0-127	Adjusts the depth of modulation for the chorus or flanger.
Mod Phase	0-180 deg	Sets how the chorus or flanger sound is spread.
Mod Pre Delay	0-50.0 ms	Adjusts the delay time from the direct sound until the chorus or flanger sound is heard.
Mod Feedback	-98- +98 %	Adjusts the proportion of the effect sound that is fed back into the effect. Negative (-) settings will invert the phase.

Parameter	Value	Description
Mod Xover-LPF	500-15000 Hz, THRU	Adjusts the cutoff frequency of the low pass filter. (THRU: no filter is used)
Mod Xover-HPF	THRU, 50-800 Hz	Adjusts the cutoff frequency of the high pass filter. (THRU: no filter is used)
Mod Level	0-127	Volume of the chorus or flanger sound.

36: E.Piano Multi

Enhancer, Phaser, Chorus or Flanger, and Tremolo or Auto-pan are connected in series. This effect is used for electric piano.

Parameter	Value	Description
Enhance Sw	OFF, ON	Turns the enhancer effect on/off.
Enhance Sens	0-127	Sensitivity of the enhancer
Enhance Frequency	0-127	Sets the lower limit of the frequencies to which the enhancement effect is added.
Enhance Mix Level	0-127	Level of the overtones generated by the enhancer
Enhance Level	0-127	Volume of the enhancer sound
Phaser Manual	0-127	Specifies the center frequency at which the sound is modulated.
Phaser Rate	0.05-10.0 Hz, note	Specifies the frequency of modulation.
Phaser Depth	0-127	Specifies the depth of modulation.
Phaser Resonance	0-127	Specifies the amount of feedback for the phaser. Higher settings will give the sound a stronger character.
Phaser Mix Level	0-127	Specifies the volume of the phase-shifted sound, relative to the direct sound.
Mod Mode	CHORUS, FLANGER	Selects whether to use chorus or flanger.
Mod Rate	0.05-10.0 Hz, note	Adjusts the speed of modulation for the chorus or flanger.
Mod Depth	0-127	Adjusts the depth of modulation for the chorus or flanger.
Mod Phase	0-180 deg	Sets how the chorus or flanger sound is spread.
Mod Pre Delay	0-50.0 ms	Adjusts the delay time from the direct sound until the chorus or flanger sound is heard.
Mod Feedback	-98- +98 %	Adjusts the proportion of the effect sound that is fed back into the effect. Negative (-) settings will invert the phase.
Mod Xover-LPF	500-15000 Hz, THRU	Adjusts the cutoff frequency of the low pass filter. (THRU: no filter is used)
Mod Xover-HPF	THRU, 50-800 Hz	Adjusts the cutoff frequency of the high pass filter. (THRU: no filter is used)

Effects List

Parameter	Value	Description
Mod Level	0–127	Volume of the chorus or flanger sound.
Trem/Pan Sw	OFF, ON	Turns the tremolo/auto pan effect on/off.
Trem Mode	TREMOLO, AUTO PAN	Selects whether to use tremolo or auto pan.
Trem Waveform	TRI, SAWUP, SAWDN, SQR, SIN	Selects the type of modulation. TRI: Triangle wave SAWUP/SAWDN: Sawtooth Wave SQR: Square wave SIN: Sine wave
		
Trem Rate	0.05–10.0 Hz, note	Frequency of modulation
Trem Depth	0–127	Depth of modulation

37: Keyboard Multi

A ring modulator, 3-band equalizer, pitch shifter, phaser, and delay are connected in series.

Ring Modulator is an effect which applies ring modulation using an internal oscillator to the input signal, producing bell-like sounds.

Parameter	Value	Description
Ring Freq	0–127	Frequency at which modulation will be applied
Ring Balance	DRY100:0WET–DRY0:100WET	Volume balance between the direct sound (DRY) and the ring modulated sound (WET)
EQ Low Freq	50–4000 Hz	Frequency of the low range
EQ Low Gain	-15– +15 dB	Gain of the low range
EQ Mid Freq	50–20000 Hz	Frequency of the middle range
EQ Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Gain of the middle range Set a higher value for Q to narrow the range to be affected.
EQ Mid Gain	-15– +15 dB	Gain of the middle range
EQ Hi Freq	2000–20000 Hz	Frequency of the high range
EQ Hi Gain	-15– +15 dB	Gain of the high range
PS Grade	1–5	Sets the grade of the effect sound. The higher the value is set, the more natural-sounding can be obtained; however, this increases the delay from the source sound as well.
PS Coarse	-12– +12 semitone	Specifies the pitch shift amount in semitone steps.
PS Fine	-100– +100 cent	Adjusts the pitch shift amount in 2-cent steps (1 cent = 1/100 of a semitone).
PS Balance	DRY100:0WET–DRY0:100WET	Volume balance between the direct sound (DRY) and the effect sound (WET)
Phaser Manual	0–127	Specifies the center frequency at which the sound is modulated.

Parameter	Value	Description
Phaser Rate	0.05–10.0 Hz, note	Specifies the frequency of modulation.
Phaser Depth	0–127	Specifies the depth of modulation.
Phaser Resonance	0–127	Specifies the amount of feedback for the phaser. Higher settings will give the sound a stronger character.
Phaser Mix Level	0–127	Specifies the volume of the phase-shifted sound, relative to the direct sound.
Delay Time	0–650 ms, note	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay Feedback	-98– +98 %	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the delay sound quicker than other bands, which makes for a clearer delay effect.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Delay Level	0–127	Volume of the delay sound.

38: Phonograph

This effect reproduces the sound of an analog record played on a record player. This includes the various noises with the characteristic of records and the uneven rotation of older turntables.

Parameter	Value	Description
Input Mode	MONO, STEREO	Use this setting to select either a stereo or monaural record player for the effect.
Signal Dist	0–127	Degree of distortion
Frequency Range	0–127	Sets the frequency response of the record player. Lowering the value degrades the frequency characteristics, making the sound resemble that from an older system.
Disk Type	LP, EP, SP	Sets the turntable rotation speed. LP: 33 1/3 r.p.m. EP: 45 r.p.m. SP: 78 r.p.m.

Parameter	Value	Description
Total Noise	0–127	Total noise level.
Scratch	0–127	Scratches on the record.
Dust	0–127	Dust on the record.
Hiss	0–127	Continuous hissing noise. These settings add the typical record's noise. The noises increase as the values are raised. Set each of the Scratch, Dust, and Hiss noise levels to get a balance, the adjust the overall amount of noise with the Total Noise Level control.
Total Wow/Flutter	0–127	Total wow and flutter.
Wow	0–127	Wow, long cycle rotational irregularity.
Flutter	0–127	Flutter, short cycle rotational irregularity.
Random	0–127	Random rotational irregularity. These settings determine the rotational irregularities of the record player. Set each of the Wow, Flutter, and Random levels to get a balance, the adjust the overall depth of the effect with the Total Wow/Flutter control.
Balance	DRY100:0WET–DRY0:100WET	Volume balance between the direct sound (DRY) and the effect sound (WET)

39: Radio Tuning

This effect reproduces the sound of an AM radio playing.

Parameter	Value	Description
Tuning	-50– +50	Adjusts the degree of noise that occurs when tuning a radio.
Noise Level	0–127	Sets the noise level.
Frequency Range	0–127	Sets the frequency response of the radio. Lowering the value worsens the frequency characteristics, making the sound appear to be coming from a tiny radio speaker.
Balance	DRY100:0WET–DRY0:100WET	Volume balance between the direct sound (DRY) and the effect sound (WET)

40: Bit Rate Converter

By changing the bit count and sample rate, this effect recreates the Lo-Fi (Low-Fidelity) sounds of the early digital samplers and similar machines. After the Lo-Fi processor, a filter to change the tone is arranged in series.

Parameter	Value	Description
Pre Filter Sw	OFF, ON	This is the switch of the filter placed before the Lo-Fi processing
Sample Rate	1/1, 1/2, 1/4, 1/8, 1/16, 1/32	Sets the fraction of current sampling rates to be used for processing.

Parameter	Value	Description
Bit Down	0–15	This setting is for reducing the bit count.
Post Filter Sw	OFF, ON	This is the switch of the filter placed after the Lo-Fi processing.
Balance	DRY100:0WET–DRY0:100WET	Volume balance between the direct sound (DRY) and the effect sound (WET)
Filter Type	Type of filter THRU: no filter is used LPF: Passes frequencies below the Cutoff. BPF: Passes frequencies near the Cutoff. HPF: Passes frequencies above the Cutoff. NOTCH: Passes frequencies other than those near the Cutoff.	
Filter Slope	-12, -24 dB/O	Filter's attenuation slope -24 dB per octave: steep -12 dB per octave: gentle
Filter Cutoff	0–127	Cutoff frequency of the filter The closer to zero it is set, the lower the cutoff frequency becomes; set it closer to 127, and the cutoff frequency becomes higher.
Filter Resonance	0–127	Resonance level of the filter Raising the setting increases resonance near the cutoff frequency, giving the sound a special characteristic.
Filter Gain	0– +24 dB	Compensates for the volume dropped in the cut frequency range with some filters. The level of compensation increases as the value is increased, and raise the volume.

41: Pseudo Stereo

Spreads the components of the monaural input sound to left and right, creating an artificial sense of stereo output.

Parameter	Value	Description
Depth	0–15	Spaciousness of the sound field

Chorus Parameters

The functions of Chorus parameters are explained.

Chorus Type

01: Chorus 1

This conventional chorus effect adds spaciousness and depth to the sound. Slow modulation frequency with less depth.

02: Chorus 2

This conventional chorus effect adds spaciousness and depth to the sound. Rapid modulation frequency with less depth.

03: Chorus 3

This conventional chorus effect adds spaciousness and depth to the sound. Slow modulation frequency with more depth.

04: Chorus 4

This conventional chorus effect adds spaciousness and depth to the sound. Rapid modulation frequency with more depth.

05: Feedback Chorus

This chorus offers a flanger-like effect, creating a soft sound.

06: Flanger

This effect sounds somewhat like a jet airplane taking off and landing.

07: Short Delay

This is a delay with a short delay time.

08: Fbk Short Delay

This is a short delay with many repeats.

Chorus Parameters

Parameter	Value	Description
Pre Low Freq	500–15000 Hz, THRU	Frequency of the low range (THRU: no filter is used)
Pre Hi Freq	THRU, 50–800 Hz	Frequency of the high range (THRU: no filter is used)
Pre Dly Time	0–50.0 ms	Adjusts the delay time from the direct sound until the chorus sound is heard.
Co LPF Freq	500–15000 Hz, THRU	Adjusts the cutoff frequency of the low pass filter. (THRU: no filter is used) The effect will be applied to the frequency range below the cutoff frequency.
Co HPF Freq	THRU, 50–800 Hz	Adjusts the cutoff frequency of the high pass filter. (THRU: no filter is used) The effect will be applied to the frequency range above the cutoff frequency.
Rate	0.05–10.0 Hz, note	Sets the cycle for the chorus or flanger sound undulations.
Depth	0–127	Adjusts the depth of modulation for the chorus or flanger.
Feedback	-98– +98 %	Adjusts the proportion of the effect sound that is fed back into the effect. Negative (-) settings will invert the phase.
Cho/Flg Sw	CHORUS, FLANGER	Selects either chorus or flanger.

Reverb Parameters

The functions of Reverb parameters are explained.



Explanations for each Reverb Type are given on the following pages.

V-Synth	VariOS	Page
01: Stereo Plate	STPLATE	p. 89
02: Stereo OperaHouse	OPERA	p. 89
03: Stereo StudioSpring	SPRING	p. 89
04: Stereo Echoes	ECHO	p. 90
05: Stereo Room	ST ROOM	p. 90
06: Stereo Cathedral	CATHDRL	p. 90
07: Stereo Church	CHURCH	p. 90
08: Room 1	ROOM1	p. 91
09: Room 2	ROOM2	p. 91
10: Room 3	ROOM3	p. 92
11: Hall 1	HALL1	p. 92
12: Hall 2	HALL2	p. 93
13: Hall 3	HALL3	p. 93
14: Garage	GARAGE	p. 94

01: Stereo Plate

Stereo reverb which simulates plate reverberation (a reverb unit that uses the vibration of a metallic plate).

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Pre Delay	0–160.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Rev Time	1.00–10.00 sec	Duration (time) of the reverb
LfDamp Gain	-36–0 dB	Degree of Low Damp The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
HfDamp Gain	-36–0 dB	Degree of High Damp High Damp, by attenuating the higher frequencies first.

02: Stereo OperaHouse

Stereo reverb which simulates the reverberation within a opera house.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Pre Delay	0–160.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Room Size	0–5	Size of the room which is simulated
Rev Time	1.00–10.00 sec	Duration (time) of the reverb
LfDamp Gain	-36–0 dB	Degree of Low Damp The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
HfDamp Gain	-36–0 dB	Degree of High Damp High Damp, by attenuating the higher frequencies first.

03: Stereo StudioSpring

Stereo reverb which simulates spring reverberation (a reverb unit that uses the vibration of springs).

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Pre Delay	0–160.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Rev Time	1.00–10.00 sec	Duration (time) of the reverb
LfDamp Gain	-36–0 dB	Degree of Low Damp The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
HfDamp Gain	-36–0 dB	Degree of High Damp High Damp, by attenuating the higher frequencies first.

04: Stereo Echoes

Stereo reverb which simulates echoes.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Pre Delay	0–500 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Repeat Time	20–500 ms	Repeat interval
Rev Time	0.06–10.00 sec	Duration (time) of the reverb
LfDamp Gain	-36–0 dB	Degree of Low Damp The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
HfDamp Gain	-36–0 dB	Degree of High Damp High Damp, by attenuating the higher frequencies first.

05: Stereo Room

Stereo reverb which simulates the reverberation within a room.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Pre Delay	0–160.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Room Size	0–5	Size of the room which is simulated
Rev Time	0.40–10.00 sec	Duration (time) of the reverb
LfDamp Gain	-36–0 dB	Degree of Low Damp The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
HfDamp Gain	-36–0 dB	Degree of High Damp High Damp, by attenuating the higher frequencies first.

06: Stereo Cathedral

Stereo reverb which simulates the reverberation within a cathedral.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Pre Delay	0–160.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Room Size	0–5	Size of the room which is simulated
Rev Time	0.40–10.00 sec	Duration (time) of the reverb
LfDamp Gain	-36–0 dB	Degree of Low Damp The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
HfDamp Gain	-36–0 dB	Degree of High Damp High Damp, by attenuating the higher frequencies first.

07: Stereo Church

Stereo reverb which simulates the reverberation within a church.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Pre Delay	0–160.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Room Size	0–5	Size of the room which is simulated
Rev Time	1.00–10.00 sec	Duration (time) of the reverb
LfDamp Gain	-36–0 dB	Degree of Low Damp The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
HfDamp Gain	-36–0 dB	Degree of High Damp High Damp, by attenuating the higher frequencies first.

08: Room 1

Reverb which simulates the reverberation within a room. It is standard room reverb.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Low Rev Time	0.06–32.0 sec	Duration (time) of the reverb for the low frequency band
Hi Rev Time	0.06–32.0 sec	Duration (time) of the reverb for the high frequency band
Xover Freq	160–15000 Hz, THRU	The reverberation specified by the Low Rev Time will be applied to the range below this frequency, and by the Hi Rev Time to the range above this frequency.
Pre Dly Time	0–200.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Density	0–99	Density of the reverb
Room Size	5.6–32.6 m	Size of the room which is simulated
Early Ref Level	0–99	Volume level of the initial reflected sound
Release Density	0–99	Density of the sound that reaches the listener after many repeated reflections
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Post HC Freq	160–15000 Hz, THRU	Frequency at which the high cut filter will begin to take effect (THRU: no filter is used)

09: Room 2

This simulates the reverberation of a room. It is suitable for simulating a fairly small room, and produces a clear reverberation.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Rev Time	0.06–32.0 sec	Duration (time) of the reverb
Pre Dly Time	0–200.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Density	0–99	Density of the reverb
Room Size	1–10	Size of the room which is simulated
Early Ref Level	0–99	Volume level of the initial reflected sound
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Post HC Freq	160–15000 Hz, THRU	Frequency at which the high cut filter will begin to take effect (THRU: no filter is used)

10: Room 3

Reverb which simulates the reverberation within a room. This is suitable for simulating a fairly large room, and produces reverberation with a strong mid and low range.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Rev Time	0.06–32.0 sec	Duration (time) of the reverb
Pre Dly Time	0–200.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Density	0–99	Density of the reverb
Room Size	1–8	Size of the room which is simulated
Early Ref Level	0–99	Volume level of the initial reflected sound
Release Density	0–99	Density of the sound that reaches the listener after many repeated reflections
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Post HC Freq	160–15000 Hz, THRU	Frequency at which the high cut filter will begin to take effect (THRU: no filter is used)

11: Hall 1

This simulates the reverberation of a concert hall. It is a conventional hall reverb. You can also apply a chorus effect to the reverberation to adjust the sense of spaciousness or to create a special effect.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Low Rev Time	0.06–64.0 sec	Duration (time) of the reverb for the low frequency band.
Hi Rev Time	0.06–64.0 sec	Duration (time) of the reverb for the high frequency band
Xover Freq	160–15000 Hz, THRU	The reverberation specified by the Low Rev Time will be applied to the range below this frequency, and by the Hi Rev Time to the range above this frequency.
Pre Dly Time	0–200.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Density	0–99	Density of the reverb
Room Size	5.6–32.6 m	Size of the room which is simulated
Early Ref Level	0–99	Volume level of the initial reflected sound
Release Density	0–99	Density of the sound that reaches the listener after many repeated reflections
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Post HC Freq	160–15000 Hz, THRU	Frequency at which the high cut filter will begin to take effect (THRU: no filter is used)
Chorus Rate	0–127	Rate of modulation for the reverb
Chorus Depth	0–127	Depth of modulation for the reverb

12: Hall 2

Simulates the reverberation in a concert hall. This is suitable for simulating a smaller room, and produces a clear reverberation.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Rev Time	0.06–64.0 sec	Duration (time) of the reverb
Pre Dly Time	0–200.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Density	0–99	Density of the reverb
Room Size	1–10	Size of the room which is simulated
Early Ref Level	0–99	Volume level of the initial reflected sound
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Post HC Freq	160–15000 Hz, THRU	Frequency at which the high cut filter will begin to take effect (THRU: no filter is used)

13: Hall 3

Simulates the reverberation in a concert hall. This is suitable for simulating a fairly large room, and produces reverberation with a strong mid and low range.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Rev Time	0.06–64.0 sec	Duration (time) of the reverb
Pre Dly Time	0–200.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Density	0–99	Density of the reverb
Room Size	1–8	Size of the room which is simulated
Early Ref Level	0–99	Volume level of the initial reflected sound
Release Density	0–99	Density of the sound that reaches the listener after many repeated reflections
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Post HC Freq	160–15000 Hz, THRU	Frequency at which the high cut filter will begin to take effect (THRU: no filter is used)

14: Garage

This simulates the reverberation of a garage. It produces the reverberation of a room surrounded by hard-surfaced walls with many reflections.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Rev Time	0.06–32.0 sec	Duration (time) of the reverb
Pre Dly Time	0–200.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Density	0–99	Density of the reverb
Room Size	1–8	Size of the room which is simulated
Early Ref Level	0–99	Volume level of the initial reflected sound
Release Density	0–99	Density of the sound that reaches the listener after many repeated reflections
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Post HC Freq	160–15000 Hz, THRU	Frequency at which the high cut filter will begin to take effect (THRU: no filter is used)

MIDI Implementation Chart

Function...		Transmitted		Recognized		Remarks
Basic Channel	Default	1-16		1-16		Memorized
	Changed	1-16		1-16		
Mode	Default	Mode 3		Mode 3		*2
	Messages Altered	Mono, Poly *****		Mode 3, 4 (M=1)		
Note Number	: True Voice	0-127 *****		0-127 0-127		
Velocity	Note ON	O		O	*4	
	Note OFF	O		O	*4	
Aftertouch	Key's	X		O	*1	
	Channel's	O		O	*1	
Pitch Bend		O		O		
Control Change	0, 32	O	*1	O	*1	Bank select
	1	O		O	*1	Modulation
	5	X	*1	O		Portamento time
	6, 38	X	*1	O		Data entry
	7	X	*1	O	*1	Volume
	10	X	*1	O		Panpot
	11	X	*1	O	*1	Expression
	64	O		O		Hold1
	65	X	*1	O		Portamento
	66	X	*1	O		Sostenuto
	91	X	*1	O (Reverb)		General purpose effects 1
	93	X	*1	O (Chorus)		General purpose effects 3
	1-31, 64-95	O	*1	X	*1	Pedal 1
	1-31, 64-95	O	*1	X	*1	Pedal 2
	1-31, 64-95	O	*1	X	*1	Breath
	1-31, 64-95	O	*1	X	*1	Knob 1 (General purpose controller1)
	1-31, 64-95	O	*1	X	*1	Knob 2 (General purpose controller2)
	1-31, 64-95	O	*1	X	*1	TT Pad XY-X (General purpose controller3)
	1-31, 64-95	O	*1	X	*1	TT Pad XY-Y (General purpose controller4)
	1-31, 64-95	O	*1	X	*1	TT Pad TT-X (General purpose controllers5)
	1-31, 64-95	O	*1	X	*1	TT Pad TT-Y (General purpose controller6)
	1-31, 64-95	O	*1	X	*1	D Beam TT-L (General purpose controller7)
	1-31, 64-95	O	*1	X	*1	D Beam TT-R (General purpose controller7)
	1-31, 64-95	O	*1	X	*1	D Beam TIME-L (General purpose controller8)
	1-31, 64-95	O	*1	X	*1	D Beam TIME-R (General purpose controller8)
	1-31, 64-95	O	*1	X	*1	D Beam PITCH-L (General purpose controller9)
1-31, 64-95	O	*1	X	*1	D Beam PITCH-R (General purpose controller9)	
1-31, 64-95	O	*1	X	*1	D Beam ASSIGN-L (General purpose controller10)	
1-31, 64-95	O	*1	X	*1	D Beam ASSIGN-R (General purpose controller10)	
100, 101	X	*1	O	*1	RPN LSB, MSB	
Program Change	: True Number	O *****	*1	O 0-127	*1	Program Number 1-128
System Exclusive		O	*3	O	*1	
System Common	: Song Position	X		X		
	: Song Select	X		X		
	: Tune	X		X		
System Realtime	: Clock	X	*1	X	*1	
	: Command	X		X		
Aux Messages	: All Sound Off	X		O		
	: Reset All Controllers	X		O		
	: Local ON/OFF	X		X		
	: All Notes Off	X		O (123-127)	*4	
	: Active Sensing	O		O		
	: System Reset	X	*1	X		
Notes		* 1 O X is selectable. * 2 Recognized as M=1 even if M≠1. * 3 Transmitted on excuted Data Transfer or receiving RQ1. * 4 ignored when Algorithm is Processor Type1 or Processor Type2				

MIDI Implementation Chart

Function...		Transmitted		Recognized		Remarks
Basic Channel	Default	X		1-16		Memorized
	Changed	X		1-16		
Mode	Default	X		Mode 3		*2
	Messages Altered	X *****		Mode 3, 4 (M=1)		
Note Number	: True Voice	X		0-127		
		*****		0-127		
Velocity	Note ON	O		O	*4	
	Note OFF	O		O	*4	
Aftertouch	Key's	X		O	*1	
	Channel's	O		O	*1	
Pitch Bend		X		O		
Control Change	0, 32	O	*1	O	*1	Bank select
	1	X		O	*1	Modulation
	5	X	*1	O		Portamento time
	6, 38	X	*1	O		Data entry
	7	X	*1	O	*1	Volume
	10	X	*1	O		Panpot
	11	X	*1	O	*1	Expression
	64	X		O		Hold1
	65	X	*1	O		Portamento
	66	X	*1	O		Sostenuto
	91	X	*1	O (Reverb)		General purpose effects 1
	93	X	*1	O (ChOrus)		General purpose effects 3
	1-31, 64-95	O	*1	X	*1	Breath
	1-31, 64-95	O	*1	X	*1	Knob 1 (General purpose controller1)
	1-31, 64-95	O	*1	X	*1	Knob 2 (General purpose controller2)
100, 101	X	*1	O	*1	RPN LSB, MSB	
Program Change	: True Number	O	*1	O	*1	Program Number 1-128
		*****		0-127		
System Exclusive		O	*3	O	*1	
System Common	: Song Position	X		X		
	: Song Select	X		X		
	: Tune	X		X		
System Realtime	: Clock	X	*1	X	*1	
	: Command	X		X		
Aux Messages	: All Sound Off	X		O		
	: Reset All Controllers	X		O		
	: Local ON/OFF	X		X		
	: All Notes Off	X		O (123-127)	*4	
	: Active Sensing	O		O		
	: System Reset	X	*1	X		
Notes		* 1 O X is selectable. * 2 Recognized as M=1 even if M≠1. * 3 Transmitted on excuted Data Transfer or receiving RQ1. * 4 ignored when Algorithm is Processor Type1 or Processor Type2				

Specifications

VC-2: V-Card Vocal Designer

Main Functions

- Transform vocal input from a mic into high-quality choirs and human choruses
- Use the keyboard to play chords and control the pitch in real time
- Transform the character of your voice in real time
- Play high-quality vocal choirs from your keyboard

Algorithm

- Modeling Choir
- Modeling Vocal
- Modeling Analog Voice
- Vocoder Choir
- Vocoder Solo
- Vocoder Vintage
- Polyphonic Pitch Shifter
- Keyboard Choir
- Keyboard Vocal
- Keyboard Analog Voice
- Processor Type 1
- Processor Type 2

Effects

- Multi-effects: 41 sets
- Chorus: 8 sets
- Reverb: 14 sets

Assisted performance functions

- Auto Note Switch (usable without playing the keyboard)
- Multi-Chord Memory Function

Internal (User) Memory

- Patches: 448

Preset Memory

- Patches: 64

Appearance

- PC CARD (68 pins, Type II)

Accessories

- Owner's Manual
- Card Case

Supported hardware configurations

This product can be used only while the card is inserted in a supported hardware device.

(1) V-Synth, a mic for input

(2) VariOS, a mic for input, an external MIDI keyboard, etc.

** In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.*

Index

A

Algorithms 7
Attack 26
AutoNote 54
AutoNoteSw 28–29

B

Beam 37
Beep 17
BENDER 27, 52
Breath 61

C

C1 11, 44, 49
C2 11, 44, 61
C3 44, 61
Carr 50, 52
Carrier 7, 24
Chord Memory 11, 36, 65
Compare 20
Compressor 23, 58
Controller 29, 55
Ctrl Tx 61
CtrlCopy 57
CURSOR 44

D

D BEAM 10
Data Transfer 19, 65
Del 57
Delete 62
DIGITAL AUDIO INTERFACE 13
DIGITAL OUT 45
DIRECT OUT 13, 45
Disk 63

Disk Load Project 38
Disk Save Project 38
Display 11, 44

E

Effect 7, 30
EFFECTS 12
EQ 35, 60
EQUALIZER 25, 51
EXIT 44

F

Factory Reset 39, 64
Formant 28, 54

G

GAIN 13
GLIDE 25, 51
Grounding Terminal 45
GROWL 25, 51

H

Hold Dump 28, 54

I

Import 62
Indicator 44
Information 34, 65
Init 34, 61
INPUT 10, 13–14, 17, 45–46, 49
Internal Memory 8, 32
IO 35, 60

K

KBD	36
KEY ASSIGN	26, 52
KEYBOARD	11
Knob	61

L

LCD CONTRAST	13
Level	25, 27
Limiter	23, 58
Load Project	38, 63

M

MAIN OUT	13, 45
Master	35, 60
MENU	44, 47
mic	13–14, 17, 46
Mic Setting	22, 58
MIC Setting Name	22
MicSet	58
MIDI	13, 45, 60
MIDI Mode	47
MIDI/USB	35
Mod Ctrl	54
Modulation	12
Modulator	7

N

Name	56
Natural	53–54
NATURAL VOICE	28–29
NOISE SUP	24
Noise suppressor	23, 58
NS	59
NS-COMP	23, 59
NS-LIMIT	23
NS-LMT	59

O

OSC	24, 28, 50, 54
OSC Wave	53
OUTPUT	45

P

Pan	26–27
PATCH	14, 18
Patch	50
Patch Controller Copy	21
PATCH Delete	21
PATCH List	16, 21
PATCH Name	20
PATCH PALETTE	11, 16
Patch select	47, 49
PATCH Tune	18
PATCH Write	20
PC CARD	12, 44
PEDAL	13, 37
PHONES	13, 44
PITCH	25, 50
Pitch Bend	12
POLY PITCH SHIFTER	28, 29
PolyPShift	54
PORTAMENTO	26, 52
POWER	12, 14, 44, 46
PPS	54
Pre-Effect	23, 58
Project	8, 41, 63, 66

R

Release	26
Rx Channel	49

Index

S

Save Project	38, 63
ScaleTune	56
Setting Name	22
Storage	40
SYSTEM	34, 60

T

Talk Switch	11
Tempo	56
Temporary Area	8
Three-band equalizer	23, 58
TIME TRIP PAD	10
TONE	28, 54
Top	14–15, 22
Top menu	47
TT Pad/Knob	37
Tune	56
TVA	51–53
Tx	36

U

UNVOICE	28–29, 53–54
USB	8, 13, 40, 42, 45, 66–67
Utility	65

V

VALUE	44
VARI Pitch	53
VARI Time	53
VARIFormant	53
VC-2 Card	8
VIBRATO	25, 51
Vocoder	7, 28, 53
Volume	10, 44

W

Wave	27, 41, 53, 62, 66
Wave Browser	33
WAVE Copy	33
WAVE Delete	33
WAVE Exchange	33
Wave Import	32
WAVE Move	33
Work Area	8
Write	34, 57, 61



For EU Countries
This product complies with the requirements of
European Directive 89/336/EEC.

Information

When you need repair service, call your nearest Roland Service Center or authorized Roland distributor in your country as shown below.

AFRICA

EGYPT

A1 Fanny Trading Office
9, EBN Hagar Al Askalany
Street,
ARD El Golf, Heliopolis,
Cairo 11341, EGYPT
TEL: 20-2-417-1828

REUNION

Maison FO - YAM Marcel
25 Rue Jules Hermann,
Chaudron - BP79 97 491
Ste Clothilde Cedex,
REUNION ISLAND
TEL: (0262) 218-429

SOUTH AFRICA

That Other Music Shop(PTY)Ltd.
11 Melle St., Braamfontein,
Johannesburg,
SOUTH AFRICA
TEL: (011) 403 4105
FAX: (011) 403 1234

PAUL BOTHERN(PTY)Ltd.

17 Werdmuller Centre,
Main Road, Claremont 7708
SOUTH AFRICA
TEL: (021) 674 4030

ASIA

CHINA

Roland Shanghai Electronics
Co., Ltd.
5F, No.150 Pingliang Road
Shanghai 200090, CHINA
TEL: (021) 5580-0800

Roland Shanghai Electronics Co., Ltd.

(BEIJING OFFICE)
10F, No.18 3 Section Anhuaxili
Chaoyang District Beijing
100011 CHINA
TEL: (010) 6426-5050

Roland Shanghai Electronics Co., Ltd.

(GUANGZHOU OFFICE)
2/F, No.30 Si You Nan Er Jie
Yi Xiang, Wu Yang Xin Cheng,
Guangzhou 510600, CHINA
TEL: (020) 8736-0428

HONG KONG

Tom Lee Music Co., Ltd.
Service Division
23-22 Sun Shan Street, Tseun
Wan, New Territories,
HONG KONG
TEL: 2333 1863

Parsons Music Ltd.

8th Floor, Railway Plaza, 39
Chatham Road South, T.S.T.,
Kowloon, HONG KONG
TEL: 2333 1863

INDIA

Rivera Digitec (India) Pvt. Ltd.
409, Nirman Kendra
Mahalaxmi Flats Compound
Off. Dr. Edwin Moses Road,
Mumbai-400011, INDIA
TEL: (022) 2493 9051

INDONESIA

PT Citra IntiRama
Jl. Cideng Timur No. 15J-150
Jakarta Pusat
INDONESIA
TEL: (021) 6324170

KOREA

Cosmos Corporation
1461-9, Seocho-Dong,
Seocho Ku, Seoul, KOREA
TEL: (02) 3486-8855

MALAYSIA

Roland Asia Pacific Sdn. Bhd.
45-1, Block C2, Jalan PJU 1/39,
Dataran Prima, 47301 Petaling
Jaya, Selangor, MALAYSIA
TEL: (03) 7805-3263

PHILIPPINES

G.A. Yupangco & Co. Inc.
339 Gil J. Puyat Avenue
Makati, Metro Manila 1200,
PHILIPPINES
TEL: (02) 899 9801

SINGAPORE

SWEET LEE MUSIC
COMPANY PTE. LTD.
150 Sims Drive,
SINGAPORE 387381
TEL: 6846-3676

CRISTOFORI MUSIC PTE LTD

#BK3014, Bedok Industrial Park E,
#02-2148, SINGAPORE 489980
TEL: 6243-9555

TAIWAN

ROLAND TAIWAN

ENTERPRISE CO., LTD.
Room 5, 9th, No. 112, Chung
Shan N. Road Sec 2, Taipei,
TAIWAN, R.O.C.
TEL: (02) 2561 3339

THAILAND

Theera Music Co., Ltd.
330 Veng, Nakorn Kasem, Soi 2,
Bangkok 10100, THAILAND
TEL: (02) 2248821

VIETNAM

Saigon Music
Suite DP-8
40 Ba Huyen Thanh Quan Street
Ho Minh City, VIETNAM
TEL: (08) 930-1969

AUSTRALIA/ NEW ZEALAND

AUSTRALIA/ NEW ZEALAND

Roland Corporation Australia Pty., Ltd.

38 Campbell Avenue
Dee Why West, NSW 2099
AUSTRALIA

For Australia
Tel: (02) 9982 8266
For New Zealand
Tel: (09) 3098 715

CENTRAL/LATIN AMERICA

ARGENTINA

Instrumentos Musicales S.A.
Av. Santa Fe 2055
(1123) Buenos Aires
ARGENTINA
TEL: (011) 4508-2700

BARBADOS

A&B Music Supplies LTD
12 Webster Industrial Park
Wildely, St. Michael, Barbados
TEL: (246)430-1100

BRAZIL

Roland Brasil Ltda.
Rua San Jose, 780 Sala B
Panama Industrial San Jose
Coia - Sao Paulo - SP, BRAZIL
TEL: (011) 4615 5666

CHILE

Comercial Fancy II S.A.
Rut.: 96.919.420-1
Nataaniel Cox #739, 4th Floor
Santiago - Centro, CHILE
TEL: (02) 688-9540

COLOMBIA

Centro Musical Ltda.
Cra 43 B No 25 A 41, Bododega 9
Medellin, Colombia
TEL: (574)3812529

COSTA RICA

JUAN Bansbach Instrumentos
Musicales
Ave.1, Calle 11, Apartado 10237,
San Jose, COSTA RICA
TEL: 258-0211

CURACAO

ZeeLandia Music Center Inc.
Orionweg 30
Curacao, Netherland Antilles
TEL: (305)5926866

DOMINICAN REPUBLIC

Instrumentos Fernando Giraldex
Calle Proyecto Central No.3
Ens. La Esperilla
Santo Domingo,
Dominican Republic
TEL: (809) 683 0305

ECUADOR

Mas Musica
Rumichaca 822 y Zaruma
Guayaquil - Ecuador
TEL: (593-4)2302364

EL SALVADOR

OMNI MUSIC
75 Avenida Norte y Final
Alameda Juan Pablo II,
Edificio No.4010 San Salvador,
EL SALVADOR
TEL: 262-0788

GUATEMALA

Casa Instrumental
Calzada Roosevelt 34-01, zona 11
Ciudad de Guatemala
Guatemala
TEL: (502) 599-2888

HONDURAS

Almacén Pajaro Azul S.A. de C.V.
B.O.Paz Barahona
3 Ave.11 Calle S.O
San Pedro Sula, Honduras
TEL: (504) 553-2029

MARTINIQUE

Musique & Son
Z.I. Les Mangle
97232 Le Lamanтин
Martinique F.W.I.
TEL: 596 596 426860

Gigamus S&R L

10 Rue De La Folie
97200 Fort De France
Martinique F.W.I.
TEL: 596 596 715222

MEXICO

Casa Veerkamp, s.a. de cv.
Av. Toluca No. 323, Col. Oliver
de los Padres 01780 Mexico
D.F. MEXICO
TEL: (55) 5668-6699

NICARAGUA

Bansbach Instrumentos
Musicales Nicaragua
Altamira D'Este Calle Principal
de la Farmacia Sta. Avenida
1 Cuadra al Lago, #503
Managua, Nicaragua
TEL: (505)277-2557

PANAMA

SUPRO MUNDIAL, S.A.
Boulevard Andrews, Albrook,
Panama City, REP. DE
PANAMA
TEL: 315-0101

PARAGUAY

Distribuidora De
Instrumentos Musicales
J.E. Olear y ESQ. Manduvira
Asuncion PARAGUAY
TEL: (595) 21 492147

PERU

Audionet
Distribuciones Musicales SAC
Juan Fanning 530
Miraflores
Lima - Peru
TEL: (511) 4461388

TRINIDAD

AMR Ltd
Ground Floor
Maritime Plaza
Barataria Trinidad W.I.
TEL: (868)638 6385

URUGUAY

Todo Musica S.A.
Francisco Acuna de Figueroa
1771
C.P.: 11.800
Montevideo, URUGUAY
TEL: (02) 924-2335

VENEZUELA

Instrumentos Musicales
Allegro, C.A.
Av. las industrias edf. Guitarr
import
#7 zona Industrial de Turumo
Caracas, Venezuela
TEL: (212) 244-1122

EUROPE

AUSTRIA

Roland Elektronische
Musikinstrumente HmbH.
Austrian Office
Eduard-Bodem-Gasse 8,
A-6020 Innsbruck, AUSTRIA
TEL: (0512) 26 44 260

BELGIUM/FRANCE/ HOLLAND/ LUXEMBOURG

Roland Central Europe N.V.
Houtstraat 3, B-2620, Oevel
(Westerlo) BELGIUM
TEL: (014) 575811

CZECH REP.

K-AUDIO
Kardasovska 626,
CZ-198 00 Praha 9,
CZECH REP.
TEL: (2) 666 10529

DENMARK

Roland Scandinavia A/S
Nordhavnsvej 7, Postbox 880,
DK-2100 Copenhagen
DENMARK
TEL: 3916 6200

FINLAND

Roland Scandinavia As, Filial
Finland
Elanontie 5
FIN-01510 Vantaa, FINLAND
TEL: (09) 68 24 020

GERMANY

Roland Elektronische
Musikinstrumente HmbH.
Oststrasse 96, 22844
Norderstedt, GERMANY
TEL: (040) 52 60090

GREECE

STOLLAS S.A.
Music Sound Light
155, New National Road
Patras 26442, GREECE
TEL: 2610 435400

HUNGARY

Roland East Europe Ltd.
Warehouse Area "DEPO" Pf.83
H-2046 Torokbalint,
HUNGARY
TEL: (23) 511011

IRELAND

Roland Ireland
G2 Calmount Park, Calmount
Avenue, Dublin 12
Republic of IRELAND
TEL: (353) 01 4294444

ITALY

Roland Italy S. p. a.
Viale delle Industrie 8,
20020 Arese, Milano, ITALY
TEL: (02) 937-78300

NORWAY

Roland Scandinavia Avd.
Kontor Norge
Lilleakerveien 2 Postboks 95
Lilleaker N-0216 Oslo
NORWAY
TEL: 2273 0074

POLAND

MX MUSIC SP.Z.O.O.
UL. Gibraltarska 4.
PL-03664 Warszawa POLAND
TEL: (022) 679 44 19

PORTUGAL

Roland Iberia, S.L.
Portugal Office
Cais das Pedras, 8/9-1 Dto
4050-465, Porto, PORTUGAL
TEL: 22 608 00 60

ROMANIA

FBS LINES
Piata Libertatii 1,
535000 Cheorgheni,
ROMANIA
TEL: (266) 364 609

RUSSIA

MuTek
3-Bogatyarskaya Str. 1.k.1
107 564 Moscow, RUSSIA
TEL: (095) 169 5043

SPAIN

Roland Iberia, S.L.
Paseo Garcia Faria, 33-35
08005 Barcelona SPAIN
TEL: 93 493 91 00

SWEDEN

Roland Scandinavia A/S
SWEDISH SALES OFFICE
Danvik Center 28, 2 tr.
S-131 30 Nacka SWEDEN
TEL: (08) 702 00 20

SWITZERLAND

Roland (Switzerland) AG
Landstrasse 5, Postfach,
CH-4452 Iltingen,
SWITZERLAND
TEL: (061) 927-8383

UKRAINE

TIC-TAC
Mira Str. 19/108
P.O. Box 180
295400 Munkachevo,
UKRAINE
TEL: (03131) 414-40

UNITED KINGDOM

Roland (U.K.) Ltd.
Atlantic Close, Swansea
Enterprise Park, SWANSEA
SA7 9FJ,
UNITED KINGDOM
TEL: (01792) 702701

MIDDLE EAST

BAHRAIN

Moon Stores
No.16, Bab Al Bahrain Avenue,
P.O.Box 247, Manama 304,
State of BAHRAIN
TEL: 17 211 005

CYPRUS

Radox Sound Equipment Ltd.
17, Diagorou Street, Nicosia,
CYPRUS
TEL: (022) 66-9426

IRAN

MOCO INC.
No.41 Nike St., Dr.Shariyati Ave.,
Roberoye Cerah Mirdamad
Tehran, IRAN
TEL: (021) 285-4169

ISRAEL

Halihit P. Greenspon & Sons
Ltd.
8 Refaif Ha'aliya Hashnya St.
Tel-Aviv-Yafo ISRAEL
TEL: (03) 6823666

JORDAN

AMMAN Trading Agency
245 Prince Mohammad St.,
Amman 1118, JORDAN
TEL: (06) 464-1200

KUWAIT

EASA HUSAIN AL-YOUSIFI
& SONS CO.
Abdullah Salem Street,
Safat, KUWAIT
TEL: 243-6399

LEBANON

Chahine S.A.L.
Gerge Zeidan St., Chahine
Bldg., Achrafieh, P.O.Box 16-
5857
Beirut, LEBANON
TEL: (01) 20-1441

OMAN

TALENTZ CENTRE L.L.C.
P.O. BOX 37, MUSCAT,
POSTAL CODE 113
TEL: 931-3705

QATAR

Al Emadi Co. (Badie Studio &
Stores)
P.O. Box 62, Doha, QATAR
TEL: 4423-554

SAUDI ARABIA

aDawlah Universal

Electronics APL
Corniche Road, Aldosary
Bldg., 1st Floor, Alkhabar,
SAUDI ARABIA

P.O.Box 2154, Alkhabar 31952
SAUDI ARABIA
TEL: (03) 898 2081

SYRIA

Technical Light & Sound Center

Rawda, Abdul Qader Jazairi St.
Bldg. No. 21, P.O.Box 13520,
Damascus, SYRIA
TEL: (011) 223-5384

TURKEY

Ant Muzik Aletleri Ithalat Ve
Ihracat Ltd Sti
Siraselviler Caddesi
Siraselviler Pasaji No:74/20
Taksim - Istanbul, TURKEY
TEL: (012) 2449624

U.A.E.

Zak Electronics & Musical
Instruments Co. L.L.C.
Zabeel Road, Al Sheroq Bldg.,
No. 14, Grand Floor, Dubai,
U.A.E.
TEL: (04) 3360715

NORTH AMERICA

CANADA

Roland Canada Music Ltd.
(Head Office)
5480 Parkwood Way
Richmond B. C., V6V 2M4
CANADA
TEL: (604) 270 6626

Roland Canada Music Ltd.

(Toronto Office)
170 Admiral Boulevard
Mississauga ON L5T 2N6
CANADA
TEL: (905) 362 9707

U. S. A.

Roland Corporation U.S.
5100 S. Eastern Avenue
Los Angeles, CA 90040-2938,
U. S. A.
TEL: (323) 890 3700

As of January 15, 2005 (ROLAND)