Introduction

VariOS 303 is a trial application that transforms your VariOS into a completely different sound module.

When the VariOS 303 program is installed, you can use the VariOS as an analog modeling bass synthesizer.

In addition to parameters such as cutoff and resonance, a Pattern Sequencer function is also provided.

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About this program

File structure

- VariOS 303 main program

  If this program is installed in the VariOS's internal flash ROM, the VariOS can function as an analog modeling bass synthesizer.
- VariOS 303 controller software (Windows/Macintosh)

  This is editor software that lets you control the functions of the VariOS 303 from your computer.

Features

Once you have installed the program into the internal flash ROM of the VariOS, you can use a simple button operation to start up the VariOS as the VariOS 303. Since the previous program will still remain, the normal power-on operation will start up the VariOS with its conventional functionality.

Specifications/System requirements

Specifications

VariOS 303

Sound Generator:

Analog Modeling

Waveforms:

Saw

Square

Parts:

1

Maximum Polyphony:

1 voice

Patches:

128

Step Sequencer:

16 Steps

Effects:

COMP

OD/DS

CHORUS

DELAY

EQ

Sampling Frequency:

44.1kHz

System requirements (Windows)

Operating system:

Microsoft® Windows® XP Home/XP Professional/ 2000 Professional/Me/98SE

CPU:

Pentium®/Celeron™ or compatible processor, 400 MHz or better

Pentium® III 500 MHz or better is recommended

RAM:

128 MB or more (256 MB or more is recommended)

Free space required on hard disk:

30 MB or more

Display resolution/Color depth:

800 x 600 pixels, 65,536 colors (16-bit High Color) or better

System requirements (Macintosh)

Operating System:

Mac OS 9.0.4 or later

Mac OS X v10.2 or later

CPU:

OS 9: PowerPC G3, 233 MHz or better

OS X: PowerPC G3, 500 MHz or better

RAM:

192 MB or more (256 MB or more is recommended)

Free space required on hard disk:

30 MB or more

Display resolution/color depth:

800x 600 pixels, 32,000 colors or better

Other:

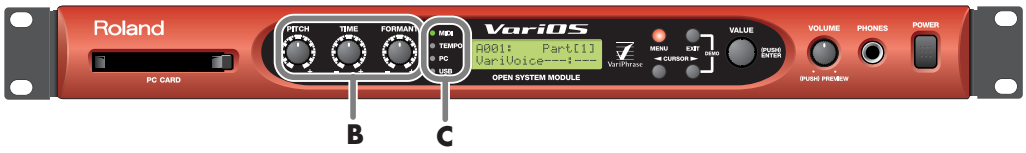
OMS support (Mac OS 9 only)

* *Although Roland has tested numerous configurations, and has determined that on average, a computer system similar to that described above will permit normal operation of the VariOS 303 Controller, Roland cannot guarantee that a given computer can be used satisfactorily with the VariOS 303 Controller based solely on the fact that it meets the above requirements. This is because there are too many other variables that may influence the processing environment, including differences in motherboard design and the particular combination of other devices involved.*

Names of Things and What They Do

Refer to "Names of Things and What They Do" in the "VariOS User Guide." **The following points will be different when you use VariOS 303.**

Front Panel



B. PITCH/TIME/FORMANT Knobs

PITCH (C1) Knob	Adjusts the TUNING (pitch).
TIME (C2) Knob	Adjusts the cutoff frequency.
FORMANT (C3) Knob	Adjusts the resonance.

C. Indicators

TEMPO	This does not function for VariOS 303.

Rear Panel

Q. INPUT

AUDIO IN Jacks	This does not function for VariOS 303.
LEVEL Knob	This does not function for VariOS 303.
GAIN switch	This does not function for VariOS 303.

R. OUTPUT

DIRECT OUT Jacks	This does not function for VariOS 303.

Installation

Before you begin installation

Before you begin, you must install the driver as described in the "Installation" chapter of the "VariOS User Guide."

If you are using Mac OS 9, install OMS and make settings.

NOTE

You cannot install the VariOS 303 main program if the driver has not been installed.

Installing the VariOS 303 main program

1. Hold down the three buttons **[MENU]**, **[<CURSOR]**, and **[VOLUME]** of the VariOS, and turn on the power of it.

2. Connect your computer and the VariOS via a USB cable. The internal flash ROM of the VariOS will be detected by your computer as a drive, and will be mounted under the drive name shown in the following table.

Windows XP	VARIOSFLASH
Other Windows versions	Removable Disk
Mac OS	VARIOSFLASH

3. From the **VariOS Program** folder, copy the following files to the VariOS drive that was mounted in step 2.
   - **VPD-02 for VariOS**
   - **VB.prj**
4. Unmount the VariOS drive that is mounted on your computer.
   - **Windows:**
     In the task tray, double-click the **eject** icon. Then click the item that indicates the VariOS drive (this will differ depending on your version of Windows; see below) to unmount the drive.

Windows XP, 2000	USB high-capacity storage device
Windows Me	USB disk

   - **Macintosh:**
     Drag the **VARIOSFLASH** on the desktop into the **"Trash"**.
5. Turn off the power of the VariOS.

Installing VariOS 303 Controller

Windows

In the **Controller Program** folder, double-click **Setup** to start up the installer.
Proceed with the installation according to the on-screen directions.

Macintosh

In the **Controller Program** folder, double-click **VariOS303 Installer_E** to start up the installer.
Proceed with the installation according to the on-screen directions.

Startup and settings

Starting up VariOS 303

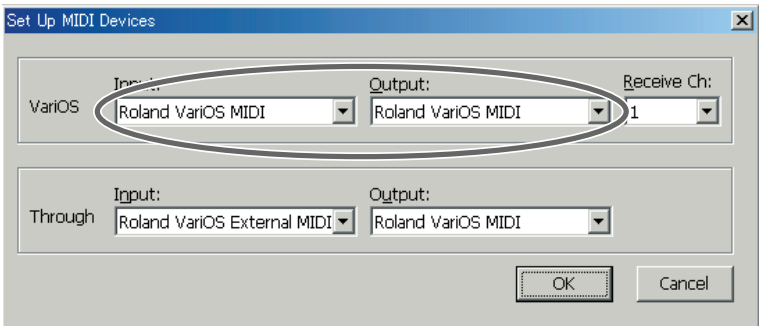
1. Hold down the **[Menu]** and **[<CURSOR]** buttons of the VariOS, and turn on the power.
2. Use the VariOS's **[VALUE]** knob to select "**VPD-02**."
3. Press **[ENTER]** (**[VALUE]** knob).

Starting up VariOS 303 Controller and making settings

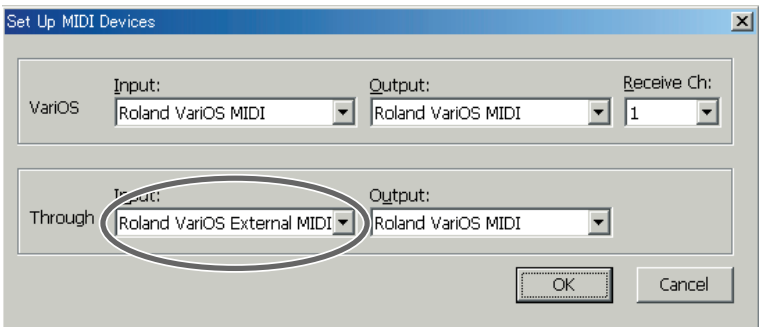
Before you start up VariOS 303 Controller, you must connect the VariOS to your computer via a USB cable and start up VariOS 303.

If you first start up VariOS 303 Controller and then start up VariOS 303 or connect the USB cable, or if you have turned off the power of the VariOS or disconnected the USB cable while VariOS 303 Controller is running, you must close VariOS 303 Controller and then restart it.

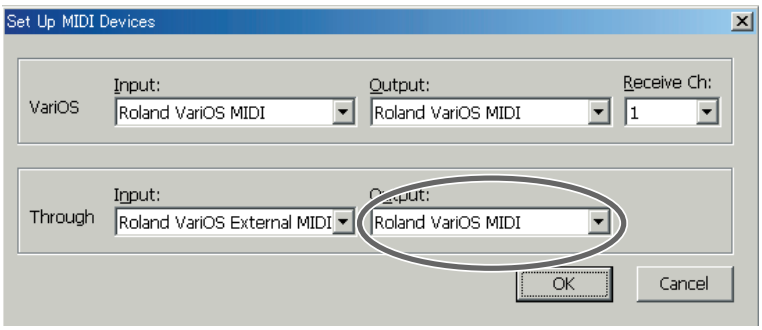
1. Start up VariOS 303 Controller.
2. In the **Setup** menu, click **Setup MIDI Devices**.
3. In the **VariOS Input/Output** field, specify the MIDI port to which the VariOS is connected. Normally, you will select "**Roland VariOS MIDI**," as shown in the diagram.



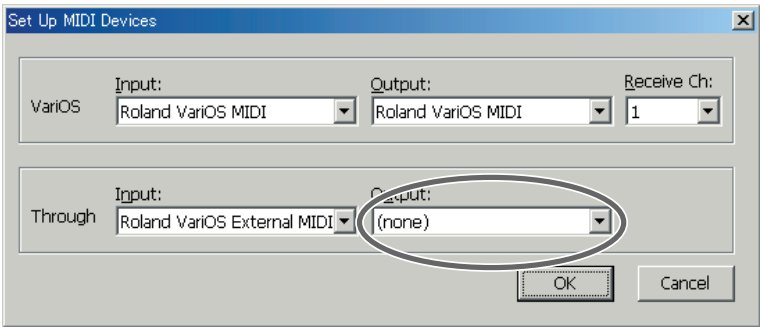
4. If you are using a MIDI keyboard, set the **Through Input** field to the MIDI input port to which your MIDI keyboard is connected. If your MIDI keyboard is connected to the VariOS, select "**Roland VariOS External MIDI**" as shown in the diagram.



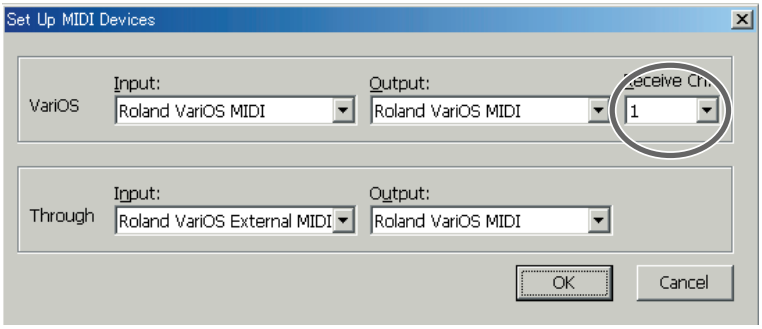
5. If you're using VariOS 303 by itself, set the **Through Output** field to "**Roland VariOS MIDI**."



If you are using VariOS 303 with other sequencer software, set the **Through Output** field to "**none**" to prevent VariOS 303 from sounding notes in duplicate.



6. The **Receive Ch** field specifies VariOS 303's MIDI receive channel. VariOS 303 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 channel your MIDI keyboard is using for transmission.



* *The setting of the **Receive Ch** field is linked with the **[Menu2 Receive Channel]** setting of the VariOS hardware module. Refer to "**Setting the MIDI Receive Channel**" on p. 8.*

Basic operation

Basic operation for VariOS 303 (main unit)

Selecting patches

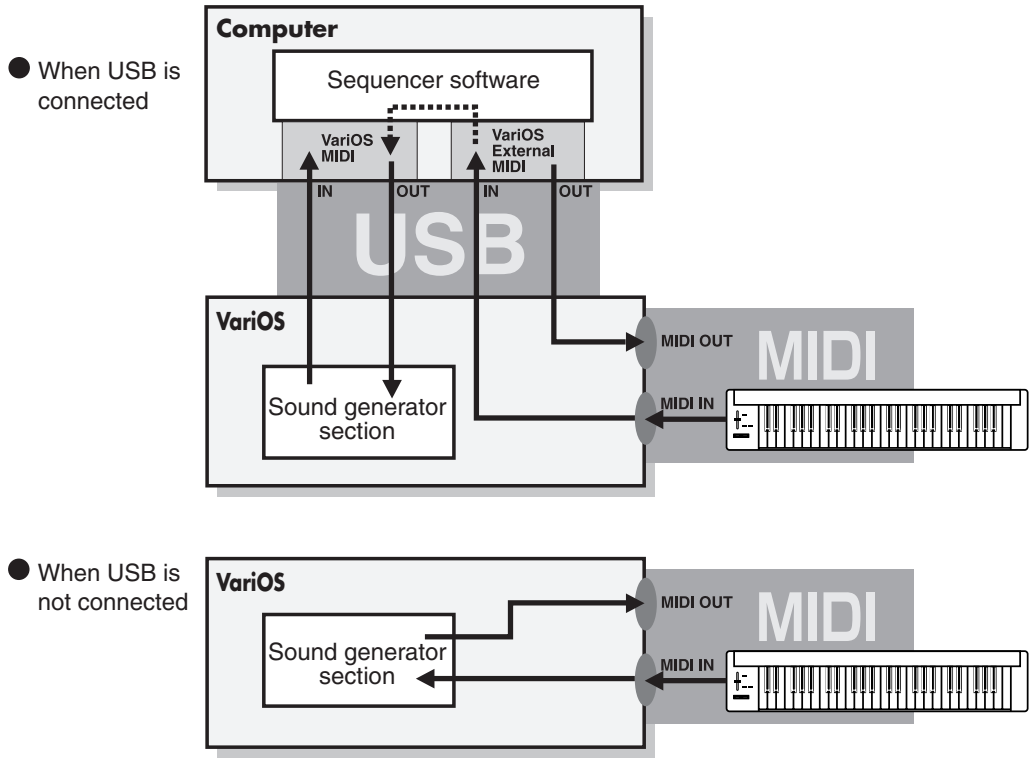
Turn the **[VALUE]** knob to select patches.

Playing from a connected keyboard (MIDI Mode)

You can connect your MIDI keyboard to the VariOS. In this case, you can change the MIDI routing (PC mode, Internal mode) in the following ways.

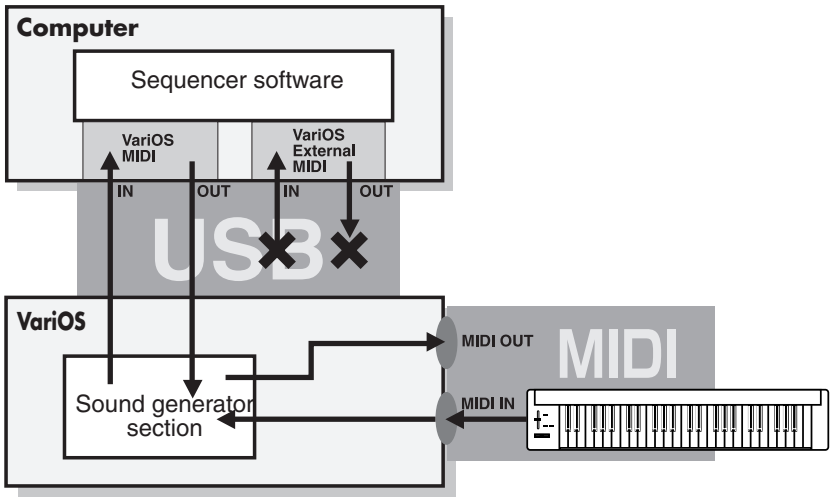
PC mode

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). When USB is not connected or 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.



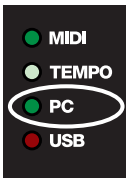
Internal mode

The MIDI connectors of the rear panel of the VariOS are connected directly to the sound generator section.



Procedure:

1. Press the **[MENU]** button so it is lit.
2. Turn the **[VALUE]** knob to select "**Menu1 MIDI Mode**," and press the **[VALUE]** knob.
3. Turn the **[VALUE]** knob to switch the setting between **"Internal" or "PC."**



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.

4. Press the **[MENU]** button so it is not lit.

Setting the MIDI Receive Channel

Here's how to set the MIDI receive channel of the VariOS hardware module.

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.

Procedure:

1. Press the **[MENU]** button so it is lighted.
2. Turn the **[VALUE]** knob to select **[Menu2 Receive Channel]**, and then press the **[VALUE]** knob.
3. Turn the **[VALUE]** knob to specify the receive channel (1–16).
4. Press the **[MENU]** button to turn off its illumination.

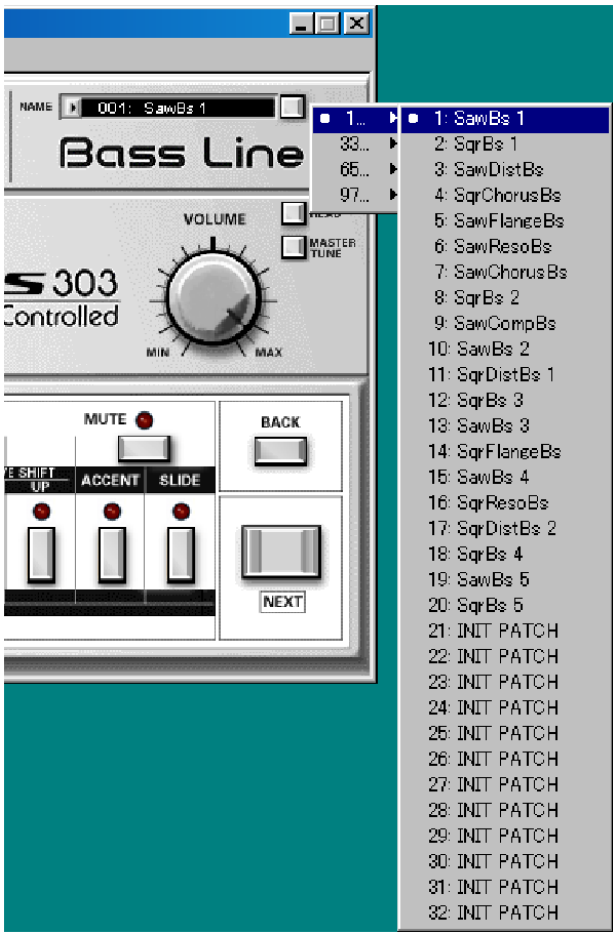
Basic operation for VariOS 303 Controller

Changing Skins

You can change the appearance of VariOS 303 by choosing **[Skin]** from the **[Setup]** menu.

Selecting a patch

To select a patch from a list, click the **[LIST]** button.



Editing a value

You can edit values by clicking (and dragging) buttons, sliders, or knobs. If you feel that the panel sliders or knobs are too small for you to make detailed adjustments comfortably, try clicking (and holding) a knob and dragging the mouse farther away. You can set the value from any position as long as you continue holding down the mouse button. When doing so, the value can be adjusted with correspondingly greater precision as the mouse cursor is moved further away from the center of the knob.

If the value is displayed, you can also edit it by pressing your computer's cursor keys (up/down).

Initializing a value

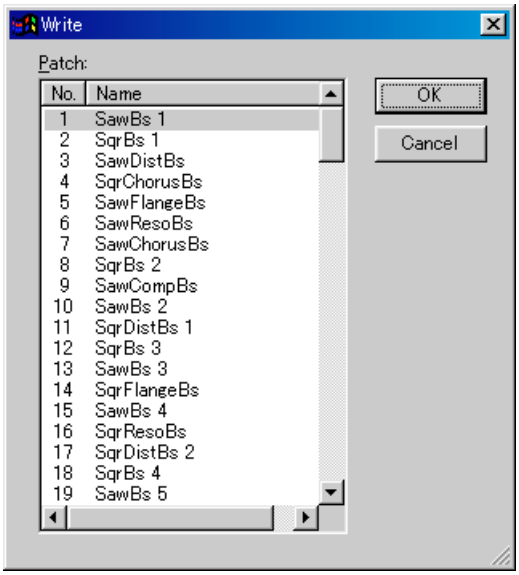
You can reset a parameter to its initial value by holding down the Ctrl (control) key of your computer and clicking the slider or knob.

Renaming a patch

To rename a patch, click the **[NAME]** button.

Writing a patch

Click the **[WRIT E]** button to open the **Write** dialog box. Select the write-destination patch number, and click the OK button.

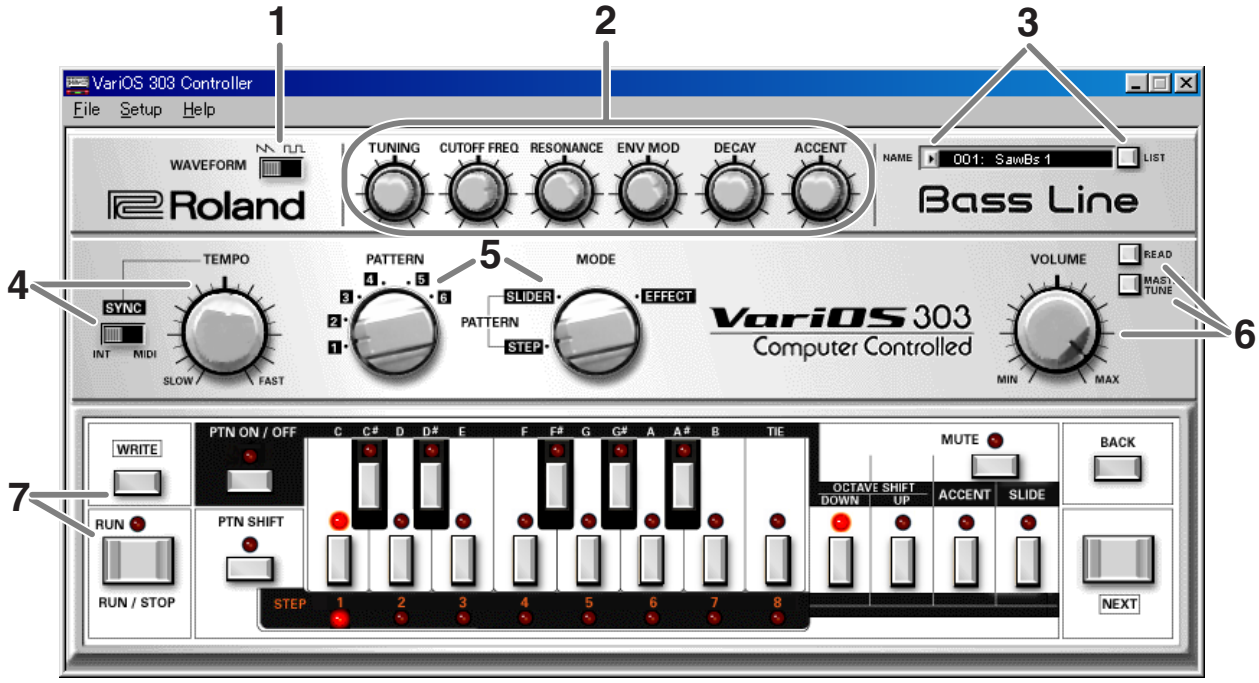


MEMO

Patches will be saved in the VariOS itself.

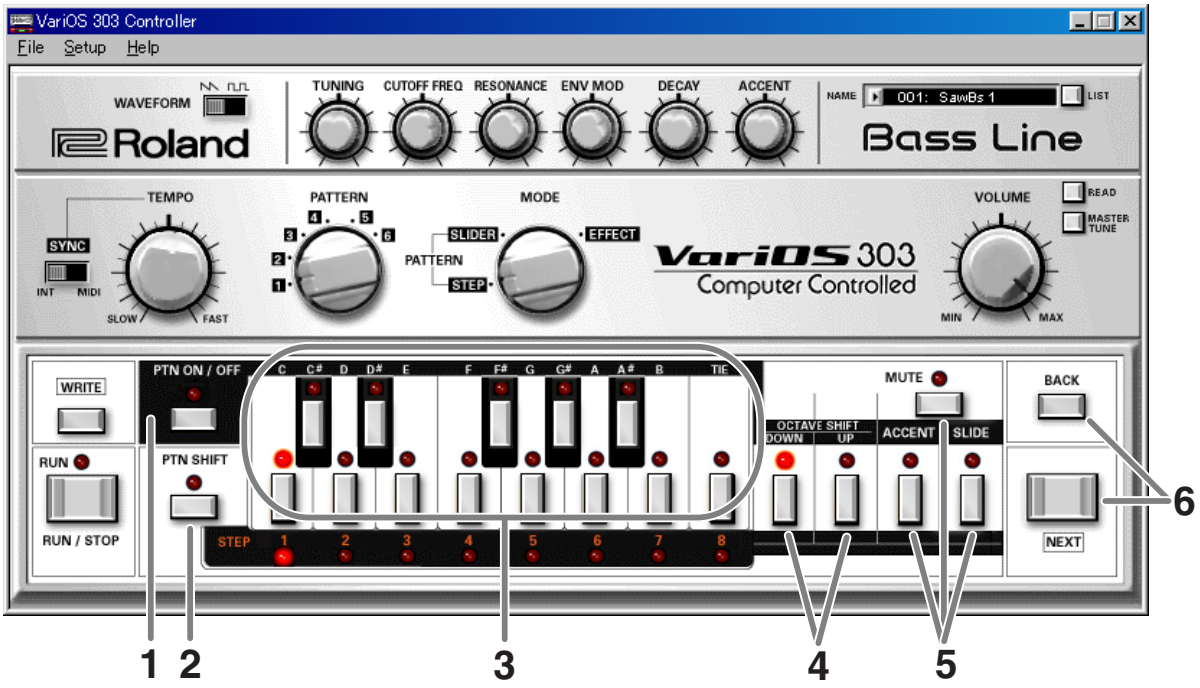
Screen reference

Main screen



	Parameter	Value	Description
1	WAVEFORM	SAW, SQR	Switches between the two audio source waveforms. **SAW:** Sawtooth wave **SQR:** Square wave
2	TUNING	-63–+63	Adjusts the pitch in a range of one octave up or down.
	CUTOFF FREQ	0–127	Sets the cutoff frequency of the filter.
	RESONANCE	0–127	Sets the resonance.
	ENV MOD	0–127	Specifies the depth of the envelope. Higher settings will cause the envelope to produce greater change.
	DECAY	0–127	Specifies the decay time of the envelope (the time from when the envelope level reaches the maximum value until it falls to a constant value).
	ACCENT	0–127	Adjusts the strength of the accent programmed into the bass pattern.
3	NAME	—	Refer to p. 10.
	LIST	—	Refer to p. 9.
4	SYNC	INT, MIDI	Determines the clock to which the pattern tempo is to be synchronized. **INT:** Synchronize to the patch tempo. **MIDI:** Synchronize to the clock of the external sequencer. (Refer to p. 16)
	TEMPO	20–250	Sets the tempo of the pattern.
5	PATTERN	1–6	Six patterns can be stored for each patch.
	MODE	STEP, SLIDER, EFFECT	Switches the edit screens.
6	VOLUME	0–127	Adjusts the volume.
	READ	—	Loads settings from the VariOS 303 into VariOS 303 controller so that the Controller screen matches the settings of the unit itself.
	MASTER TUNE	415.3–466.2 Hz	Click **MASTER TUNE** to display the **Tune** dialog box.  Adjusts the overall tuning. The display of 440 Hz shows the frequency of the A4 note (center A).
7	WRITE	—	Saves the patch.
	RUN/STOP	—	Plays/stops the pattern.

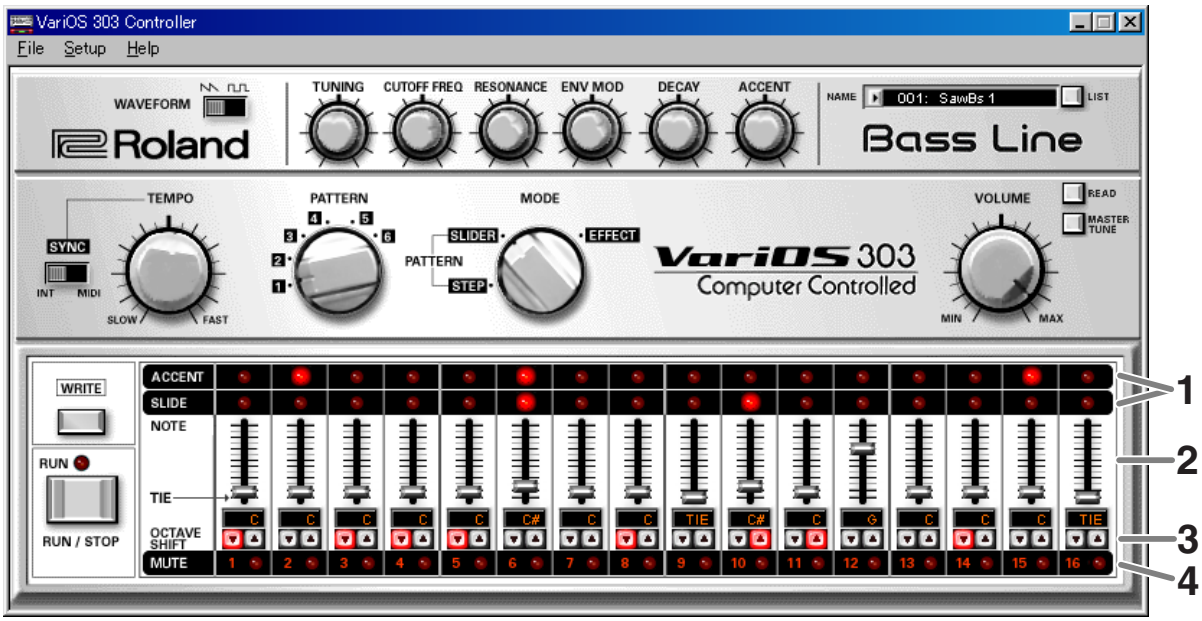
Step Pattern Input screen



A pattern consists of sixteen steps. In this screen you can input data for each step.

	Parameter	Description
1	PTN ON/OFF	Note-on messages from an external MIDI keyboard can be used to play patterns. Note-off messages will stop the playback.
2	PTN SHIFT	Shifts the key (transposes the pitch) of the phrase you programmed for the pattern. This setting is relative to C4. The pitch will be shifted by the distance between C4 and the key you play on your external MIDI keyboard. * *A shift is not obtained simply by clicking a C–B button. You must use an external MIDI keyboard.*
3	C–B, TIE	These input notes. **C–B:** Specify the pitch. **TIE:** Extend the length of the note of the preceding step into the current step.
4	OCTAVE SHIFT DOWN	Lowers the note pitch by one octave.
	OCTAVE SHIFT UP	Raises the note pitch by one octave.
5	ACCENT	Switches the accent (p. 11) on/off.
	SLIDE	If this is on, the pitch will change smoothly between the preceding note and the current note.
	MUTE	If this is on, the sound will be muted (silenced).
6	BACK	Moves backward one step. The STEP indication will move by -1.
	NEXT	Moves forward by one step. The STEP indication will move by +1.

Slider Pattern Input screen



A pattern consists of sixteen steps. In this screen you can input all sixteen steps simultaneously.

	Parameter	Description
1	ACCENT	Switches the accent (p. 11) on/off.
	SLIDE	If this is on, the pitch will change smoothly between the preceding note and the current note.
2	NOTE, TIE	These input notes. **C–B:** Specify the pitch. **TIE:** Extend the length of the note of the preceding step into the current step.
3	OCTAVE SHIFT DOWN	Lowers the note pitch by one octave.
	OCTAVE SHIFT UP	Raises the note pitch by one octave.
4	MUTE	If this is on, the sound will be muted (silenced).

Effect screen

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

1. COMP

Parameter	Value	Description
COMP	OFF, ON	Turns the comp/limiter on/off.
RATIO	1.5:1, 2:1, 4:1, 100:1	Sets the “source sound:output sound” compression ratio.
GAIN	-60– +12 dB	Adjusts the output gain.
THRES	-60–0 dB	Sets the volume level at which the compression begins.
ATTACK	0–127	Sets the time after the sound volume is crossed the value of THRES until compression begins.
RELEASE	0–127	Specifies the time from when the volume drops below the value of THRES until compression is no longer applied.

2. OD/DS

Parameter	Value	Description
OD/DS	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

3. EQUALIZER

Parameter	Value	Description
LOW FREQ	50–4000 Hz	Frequency of the low range
MID FREQ	50–20000 Hz	Frequency of the middle range
HIGH FREQ	2000–20000 Hz	Frequency of the high range
LOW GAIN	-15– +15 dB	Gain of the low range
MID GAIN	-15– +15 dB	Gain of the middle range
HIGH GAIN	-15– +15 dB	Gain of the high range

4. CHORUS

Parameter	Value	Description
CHORUS MODE	CHO, FLNG	Selects whether to use chorus or flanger.
RATE	0.05–10.0 Hz	Adjusts the speed of modulation for the chorus or flanger.
MOD LEVEL	0–127	Volume of the chorus or flanger sound.
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.

5. 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
DELAY	OFF, ON	Switches the delay on/off.
TIME	0–1300 ms	Adjusts the delay time from the direct sound until the delay sound is heard.
BALANCE	DRY100:0WET–DRY0:100WET	Volume balance between the direct sound (DRY) and the delay sound (WET)
LEVEL	0–127	Adjusts the amount of delay.
FEEDBACK	-98– +98 %	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.

Cautions when using VariOS 303 with another sequencer

Synchronizing the step sequencer to the tempo of your MIDI sequencer

If you are using VariOS 303 with your MIDI sequencer, you can set VariOS 303 Controller's **[SYNC]** switch to **MIDI** so that the VariOS 303 step sequencer will be synchronized to the tempo of your MIDI sequencer.

1. Set VariOS 303 Controller's **[SYNC]** switch to **MIDI**. (Refer to p. 11)
2. Start up your MIDI sequencer.
3. Send the MIDI clock of your MIDI sequencer to **"Roland VariOS MIDI"** (the port of the VariOS sound generator section).
4. Specify **Roland VariOS MIDI** (the port of the VariOS sound generator section) as the output port for the tracks of your sequencer, so that it will control the VariOS.

About MIDI channels

When playing VariOS 303 from a sequencer, choose **Roland VariOS MIDI** as the output port for the corresponding track in your sequencer, and set the MIDI output channel to match the MIDI Receive Channel of the VariOS. You can use either of the following two methods to set the VariOS's MIDI Receive Channel.

- **From VariOS 303 Controller**
  Refer to step **6** of "**Starting up VariOS 303 Controller and making settings**" on p. 6.

- **From the menu of the VariOS hardware module**
  Refer to "**Setting the MIDI Receive Channel**" on p. 8.

Starting up VariOS 303 from a PC card

The VariOS trial applications "VariOS-8" and "VariOS 303" can be copied to a PC card, so that the programs can be started up from a PC card inserted in the VariOS.

This is very convenient, since you can start up a VariOS trial application simply by inserting the PC card into the card slot of the VariOS and turning the power on. (If you have copied more than one trial application onto the PC card, you can use the **[VALUE]** knob at start-up to switch applications.)

NOTE
You will need a PC card (sold separately) in order to do this.

NOTE
If you use a PC card, be sure that it meets the requirements given in "Using PC Cards" (p. 5) of the "VariOS User Guide."

NOTE
When using a PC card, you must format it on the VariOS itself using the procedure described in the "VariOS User Guide" section "VariOS Menu Reference" -> "8-5 Format."

Installation

If your computer does not have a PC card reader

MEMO
First use the "Installation" (p. 4) procedure described in this manual to copy **VB.prj** to the internal flash ROM of the VariOS.

1. Make sure that a PC card is not inserted in the PC card slot of the VariOS. Then use a USB cable to connect the VariOS to your computer, and start up the computer.
2. Hold down the **[MENU]**, **[<CURSOR]**, and **[ENTER]** (**[VALUE]** knob) buttons of the VariOS, and turn on the power of it.
3. Insert the PC card into the PC card slot of the VariOS.
4. The PC 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.

Windows 98SE, Me, 2000	Removable Disk
Windows XP, Macintosh	PC CARD

5. From the **VariOS Program** folder, drag **VPD-02 for VariOS.BIN** to copy it into the PC card drive.
6. Rename the copied file **VPD-02 for VariOS.BIN** as follows. (Change the third character from "**D**" to "**I**" (the uppercase letter "I"; not the numeral "one").

   VPD-02 for VariOS.BIN

   ↓

   VPI-02 for VariOS.BIN

7. Unmount the PC card drive that is mounted on your computer.

- **Windows:**

  In the task tray, double-click the **eject** icon. Then click the item that indicates the PC card drive (this will differ depending on your version of Windows; see below) to unmount the drive.

Windows XP, 2000	USB high-capacity storage device
Windows Me	USB disk

- **Macintosh:**

  Drag the **PC CARD** on the desktop into the **"Trash"**.

  * *The **PC CARD** you dragged into the Recycle Bin will be mounted again, but this is not a problem.*

8. Turn off the power of the VariOS.

This completes the installation. Refer to "Usage," below.

If your computer has a PC card reader

MEMO

First use the "Installation" (p. 4) procedure described in this manual to copy **VB.prj** to the internal flash ROM of the VariOS.

1. Start up your computer, and insert the PC card into the PC card reader.

2. From the **VariOS Program** folder, drag **VPD-02 for VariOS.BIN** to copy it into the PC card drive.

3. Rename the copied file **VPD-02 for VariOS.BIN** as follows. (Change the third character from "**D**" to "**I**" (the uppercase letter "I"; not the numeral "one").

VPD-02 for VariOS.BIN

↓

VPI-02 for VariOS.BIN

4. Unmount the PC card drive that is mounted on your computer.

This completes the installation. Refer to "Usage," below.

Usage

1. When you insert the PC card into the VariOS and power-on the VariOS, the VariOS trial application that was written to the PC card will start up.

MEMO

If you want to start up the internal program of the VariOS, remove the PC card and power-on the VariOS.

2. If you have copied more than one trial application to the PC card, the display will indicate "**Select Program**" when the VariOS starts up. Turn the **[VALUE]** knob to select the desired application, and press **[ENTER]** to start up.

NOTE

If the patch name does not appear (i.e., displayed as "**001:** "), the VariOS's internal flash ROM does not contain patch data. Copy **VB.prj** into the VariOS's internal flash ROM as described in "Installation" (p. 4).

MIDI Implementation

System Exclusive Message

●Data Transmission

This instrument can use exclusive messages to exchange many varieties of internal settings with other devices.
The model ID of the exclusive messages used by this instrument is 00H 6DH.

❍Data Request 1RQ1 (11H)

This message requests the other device to transmit data. The address and size indicate the type and amount of data that is requested.
When a Data Request message is received, if the device is in a state in which it is able to transmit data, and if the address and size are appropriate, the requested data is transmitted as a Data Set 1 (DT1) message. If the conditions are not met, nothing is transmitted.

Status	data byte	status
F0H	41H, dev, 00H, 53H, 11H, aaH, bbH, ccH, ddH, ssH, ttH, uuH, vvH, sum	F7H

Byte	Remarks
F0H	Exclusive status
41H	ID number (Roland)
10H	device ID
00H	model ID #1 (VariOS 303)
6DH	model ID #2 (VariOS 303)
11H	command ID (RQ1)
aaH	address MSB
bbH	address
ccH	address
ddH	address LSB
ssH	size MSB
ttH	size
uuH	size
vvH	size LSB
sum	checksum
F7H	EOX (End Of Exclusive)

* The size of data that can be transmitted at one time is fixed for each type of data. And data requests must be made with a fixed starting address and size. Refer to the address and size given in "**Parameter Address Map**."

❍Data Set 1 DT1 (12H)

Status	Data byte	Status
F0H	41H, dev, 00H, 53H, 12H, aaH, bbH, ccH, ddH, eeH, ... ffH, sum	F7H

Byte	Explanation
F0H	Exclusive status
41H	ID number (Roland)
10H	Device ID
00H	Model ID #1 (VariOS 303)
6DH	Model ID #2 (VariOS 303)
12H	Command ID (DT1)
aaH	Address MSB: upper byte of the starting address of the data to be sent
bbH	Address: upper middle byte of the starting address of the data to be sent
ccH	Address: lower middle byte of the starting address of the data to be sent
ddH	Address LSB: lower byte of the starting address of the data to be sent.
eeH	Data: the actual data to be sent. Multiple bytes of data are transmitted in order starting from the address.
:	:
ffH	Data
sum	Checksum
F7H	EOX (End Of Exclusive)

* The amount of data that can be transmitted at one time depends on the type of data, and data will be transmitted from the specified starting address and size. Refer to the address and size given in "**Parameter Address Map**."
* Data larger than 256 bytes will be divided into packets of 256 bytes or less, and each packet will be sent at an interval of about 20 ms.

Parameter Address Map

* Transmission of "#" marked address is divided to some packets. For example, ABH in hexadecimal notation will be divided to 0AH and 0BH, and is sent/received in this order.

■VariOS 303 (ModelID = 00H 6DH)

Start Address	Description
01 00 00 00	Setup
10 00 00 00	Temporary Patch
20 00 00 00	User Patch (001)
20 01 00 00	User Patch (002)
:	:
20 7F 00 00	User Patch (128)

❍Patch

Offset Address	Description
00 10 00	Patch Common
00 11 00	Patch Effect
00 12 00	Patch Tone
00 13 00	Patch Pattern 1
00 14 00	Patch Pattern 2
00 15 00	Patch Pattern 3
00 16 00	Patch Pattern 4
00 17 00	Patch Pattern 5
00 18 00	Patch Pattern 6

❍Setup

	Offset Address		Description	
	00 00	0aaa aaaa	Part 1 Bank Select MSB (CC# 0)	(0 - 127)
	00 01	0aaa aaaa	Part 1 Bank Select LSB (CC# 32)	(0 - 127)
	00 02	0aaa aaaa	Part 1 Program Number (PC)	(0 - 127)
#	00 03	0000 aaaa 0000 bbbb 0000 cccc 0000 dddd	Master Tune	(24 - 2024) -100.0 - +100.0 [cent]
	00 07	0000 000a	Clock Source	(0 - 1) INT, MIDI
	00 08	0000 aaaa	Receive Channel	(0 - 15) 1 - 16
	00 00 00 09	Total Size		

❍Patch Common

	Offset Address		Description	
	00 00	0aaa aaaa	Patch Name 1	(32 - 127) 32 - 127 [ASCII]
	00 01	0aaa aaaa	Patch Name 2	(32 - 127) 32 - 127 [ASCII]
	00 02	0aaa aaaa	Patch Name 3	(32 - 127) 32 - 127 [ASCII]
	00 03	0aaa aaaa	Patch Name 4	(32 - 127) 32 - 127 [ASCII]
	00 04	0aaa aaaa	Patch Name 5	(32 - 127) 32 - 127 [ASCII]
	00 05	0aaa aaaa	Patch Name 6	(32 - 127) 32 - 127 [ASCII]
	00 06	0aaa aaaa	Patch Name 7	(32 - 127) 32 - 127 [ASCII]
	00 07	0aaa aaaa	Patch Name 8	(32 - 127) 32 - 127 [ASCII]
	00 08	0aaa aaaa	Patch Name 9	(32 - 127) 32 - 127 [ASCII]
	00 09	0aaa aaaa	Patch Name 10	(32 - 127) 32 - 127 [ASCII]
	00 0A	0aaa aaaa	Patch Name 11	(32 - 127) 32 - 127 [ASCII]
	00 0B	0aaa aaaa	Patch Name 12	(32 - 127) 32 - 127 [ASCII]
	00 0C	0aaa aaaa	(reserved)	(0 - 127)
#	00 0D	0000 aaaa 0000 bbbb	Patch Tempo	(20 - 250) 20 - 250
	00 0F	00aa aaaa	Pitch Bend Range Up	(0 - 48)
	00 10	00aa aaaa	Pitch Bend Range Down	(0 - 48)
	00 11	0000 000a	Delay Switch	(0 - 1) OFF, ON
	00 12	0000 000a	Pattern Status	(0 - 2) OFF, ON, RUN
	00 13	0000 0aaa	Pattern Select	(0 - 5) 1 - 6
	00 14	0000 000a	Pattern Shift	(0 - 1) OFF, ON
	00 15	0aaa 0aaa	(reserved)	(0 - 127)
	00 16	0aaa aaaa	(reserved)	(0 - 127)
	00 17	0aaa aaaa	(reserved)	(0 - 127)
	00 00 00 18	Total Size		

❍Patch Effect

Offset Address		Description	
00 00	0aaa aaaa	Delay Send Level	(0 - 127)
00 01	0aaa aaaa	(reserved)	(0 - 127)
00 02	0aaa aaaa	(reserved)	(0 - 127)
00 03	0aaa aaaa	(reserved)	(0 - 127)
00 04	0aaa aaaa	(reserved)	(0 - 127)
00 05	0aaa aaaa	(reserved)	(0 - 127)
00 06	0aaa aaaa	(reserved)	(0 - 127)
00 07	0aaa aaaa	(reserved)	(0 - 127)
00 08	0aaa aaaa	(reserved)	(0 - 127)
00 09	0aaa aaaa	(reserved)	(0 - 127)
00 0A	0aaa aaaa	(reserved)	(0 - 127)
00 0B	0aaa aaaa	(reserved)	(0 - 127)
00 0C	0aaa aaaa	(reserved)	(0 - 127)
00 0D	0aaa aaaa	(reserved)	(0 - 127)
00 0E	0aaa aaaa	(reserved)	(0 - 127)
00 0F	0aaa aaaa	(reserved)	(0 - 127)
00 10	0000 000a	Comp Sw	(0 - 1) OFF, ON
00 11	0000 00aa	Comp Ratio	(0 - 3)
00 12	00aa aaaa	Comp Threshold	(0 - 60)
00 13	0aaa aaaa	Comp Attack	(0 - 127)
00 14	0aaa aaaa	Comp Release	(0 - 127)
00 15	0aaa aaaa	Comp Gain	(0 - 72)
00 16	0000 000a	Distortion Sw	(0 - 1) OFF, ON
00 17	0000 000a	Distortion Mode	(0 - 1) OD, DS
00 18	0aaa aaaa	Drive	(0 - 127)
00 19	000a aaaa	EQ Low Freq	(0 - 19)
00 1A	000a aaaa	EQ Low Gain	(0 - 30)
00 1B	000a aaaa	EQ Mid Freq	(0 - 26)
00 1C	000a aaaa	EQ Mid Gain	(0 - 30)
00 1D	0000 aaaa	EQ High Freq	(0 - 8)
00 1E	000a aaaa	EQ High Gain	(0 - 30)
00 1F	0000 000a	Chorus Mode	(0 - 1) CHORUS, FLANGER
00 20	0aaa aaaa	Chorus Rate	(0 - 111)
00 21	0aaa aaaa	Chorus Depth	(0 - 127)
00 22	0aaa aaaa	Chorus Feedbk	(0 - 98)
00 23	0aaa aaaa	Chorus Level	(0 - 127)
00 24	0aaa aaaa	(reserved)	(0 - 127)
00 25	0aaa aaaa	(reserved)	(0 - 127)
00 26	0aaa aaaa	(reserved)	(0 - 127)
00 27	0aaa aaaa	(reserved)	(0 - 127)
00 28	0aaa aaaa	(reserved)	(0 - 127)
00 29	0aaa aaaa	(reserved)	(0 - 127)
00 2A	0aaa aaaa	DELAY Time	(0 - 105)
00 2B	0aaa aaaa	DELAY Balance	(0 - 100)
00 2C	0aaa aaaa	DELAY Feedbk	(0 - 98)
00 2D	0aaa aaaa	(reserved)	(0 - 127)
00 2E	0aaa aaaa	(reserved)	(0 - 127)
00 2F	0aaa aaaa	(reserved)	(0 - 127)
00 00 00 30	Total Size		

❍Patch Tone

Offset Address		Description	
00 00	0000 aaaa	Waveform	(0 - 1) SAW, SQUARE
00 01	0aaa aaaa	Tuning	(1 - 127)
00 02	0aaa aaaa	Cutoff Freq	(0 - 127)
00 03	0aaa aaaa	Resonance	(0 - 127)
00 04	0aaa aaaa	Env Mod	(0 - 127)
00 05	0aaa aaaa	Decay	(0 - 127)
00 06	0aaa aaaa	Accent	(0 - 127)
00 07	0aaa aaaa	Volume	(0 - 127)
00 00 00 08	Total Size		

❍Patch Pattern

Offset Address		Description	
00 00	0000 aaaa	Step 1 Note	(0 - 12)
00 01	0000 aaaa	Step 2 Note	(0 - 12)
00 02	0000 aaaa	Step 3 Note	(0 - 12)
00 03	0000 aaaa	Step 4 Note	(0 - 12)
00 04	0000 aaaa	Step 5 Note	(0 - 12)
00 05	0000 aaaa	Step 6 Note	(0 - 12)
00 06	0000 aaaa	Step 7 Note	(0 - 12)
00 07	0000 aaaa	Step 8 Note	(0 - 12)
00 08	0000 aaaa	Step 9 Note	(0 - 12)
00 09	0000 aaaa	Step 10 Note	(0 - 12)
00 0A	0000 aaaa	Step 11 Note	(0 - 12)
00 0B	0000 aaaa	Step 12 Note	(0 - 12)
00 0C	0000 aaaa	Step 13 Note	(0 - 12)
00 0D	0000 aaaa	Step 14 Note	(0 - 12)
00 0E	0000 aaaa	Step 15 Note	(0 - 12)
00 0F	0000 aaaa	Step 16 Note	(0 - 12)
00 10	0000 000a	Step 1 Slide	(0 - 1)
00 11	0000 000a	Step 2 Slide	(0 - 1)
00 12	0000 000a	Step 3 Slide	(0 - 1)
00 13	0000 000a	Step 4 Slide	(0 - 1)
00 14	0000 000a	Step 5 Slide	(0 - 1)
00 15	0000 000a	Step 6 Slide	(0 - 1)
00 16	0000 000a	Step 7 Slide	(0 - 1)
00 17	0000 000a	Step 8 Slide	(0 - 1)
00 18	0000 000a	Step 9 Slide	(0 - 1)
00 19	0000 000a	Step 10 Slide	(0 - 1)
00 1A	0000 000a	Step 11 Slide	(0 - 1)
00 1B	0000 000a	Step 12 Slide	(0 - 1)
00 1C	0000 000a	Step 13 Slide	(0 - 1)
00 1D	0000 000a	Step 14 Slide	(0 - 1)
00 1E	0000 000a	Step 15 Slide	(0 - 1)
00 1F	0000 000a	Step 16 Slide	(0 - 1)
00 20	0000 00aa	Step 1 Octave	(0 - 2)
00 21	0000 00aa	Step 2 Octave	(0 - 2)
00 22	0000 00aa	Step 3 Octave	(0 - 2)
00 23	0000 00aa	Step 4 Octave	(0 - 2)
00 24	0000 00aa	Step 5 Octave	(0 - 2)
00 25	0000 00aa	Step 6 Octave	(0 - 2)
00 26	0000 00aa	Step 7 Octave	(0 - 2)
00 27	0000 00aa	Step 8 Octave	(0 - 2)
00 28	0000 00aa	Step 9 Octave	(0 - 2)
00 29	0000 00aa	Step 10 Octave	(0 - 2)
00 2A	0000 00aa	Step 11 Octave	(0 - 2)
00 2B	0000 00aa	Step 12 Octave	(0 - 2)
00 2C	0000 00aa	Step 13 Octave	(0 - 2)
00 2D	0000 00aa	Step 14 Octave	(0 - 2)
00 2E	0000 00aa	Step 15 Octave	(0 - 2)
00 2F	0000 00aa	Step 16 Octave	(0 - 2)
00 30	0000 000a	Step 1 Accent	(0 - 1)
00 31	0000 000a	Step 2 Accent	(0 - 1)
00 32	0000 000a	Step 3 Accent	(0 - 1)
00 33	0000 000a	Step 4 Accent	(0 - 1)
00 34	0000 000a	Step 5 Accent	(0 - 1)
00 35	0000 000a	Step 6 Accent	(0 - 1)
00 36	0000 000a	Step 7 Accent	(0 - 1)
00 37	0000 000a	Step 8 Accent	(0 - 1)
00 38	0000 000a	Step 9 Accent	(0 - 1)
00 39	0000 000a	Step 10 Accent	(0 - 1)
00 3A	0000 000a	Step 11 Accent	(0 - 1)
00 3B	0000 000a	Step 12 Accent	(0 - 1)
00 3C	0000 000a	Step 13 Accent	(0 - 1)
00 3D	0000 000a	Step 14 Accent	(0 - 1)
00 3E	0000 000a	Step 15 Accent	(0 - 1)
00 3F	0000 000a	Step 16 Accent	(0 - 1)
00 40	0000 000a	Step 1 Mute	(0 - 1)
00 41	0000 000a	Step 2 Mute	(0 - 1)
00 42	0000 000a	Step 3 Mute	(0 - 1)
00 43	0000 000a	Step 4 Mute	(0 - 1)
00 44	0000 000a	Step 5 Mute	(0 - 1)
00 45	0000 000a	Step 6 Mute	(0 - 1)
00 46	0000 000a	Step 7 Mute	(0 - 1)
00 47	0000 000a	Step 8 Mute	(0 - 1)
00 48	0000 000a	Step 9 Mute	(0 - 1)
00 49	0000 000a	Step 10 Mute	(0 - 1)
00 4A	0000 000a	Step 11 Mute	(0 - 1)
00 4B	0000 000a	Step 12 Mute	(0 - 1)
00 4C	0000 000a	Step 13 Mute	(0 - 1)
00 4D	0000 000a	Step 14 Mute	(0 - 1)
00 4E	0000 000a	Step 15 Mute	(0 - 1)
00 4F	0000 000a	Step 16 Mute	(0 - 1)
00 00 00 50	Total Size		

MIDI Control Change Table

VariOS 303

MIDI Control#	MIDI Controller Name	Parameter Name	Range
0	Bank Select MSB		
1	Modulation	(Modulation)	
2	Breath Type	Tuning	1–127
3		Cutoff Freq	0–127
4	Foot Type	Resonance	0–127
5	Portament Time		
6	Data Entry MSB		
7	Volume	(Part Volume)	
8	Balance	Env Mod	0–127
9		Decay	0–127
10	Pan		
11	Expression	(Part Expression)	
12		Accent	0–127
13		Volume	0–127
14		Patch Tempo	10–125
15		Pattern Status	0–2
16	General Purpose Controller 1 MSB	Pattern Select	0–5
17	General Purpose Controller 2 MSB	Pattern Shift	0–1
18	General Purpose Controller 3 MSB	Waveform	0–1
19	General Purpose Controller 4 MSB	Comp Sw	0–1
20		Comp Ratio	0–3
21		Comp Threshold	0–60
22		Comp Attack	0–127
23		Comp Release	0–127
24		Comp Gain	0–72
25		OD/DS Sw	0–1
26		Drive Mode	0–1
27		Drive	0–127
28		EQ Low Freq	0–19
29		EQ Low Gain	0–30
30		EQ Mid Freq	0–26
31		EQ Mid Gain	0–30
32	Bank Select LSB		
33	Modulation LSB	EQ Hi Freq	0–8
34	Breath Type LSB	EQ Hi Gain	0–30
35		Chorus Mode	0–1
36	Foot Type LSB	Chorus Rate	0–111
37	Portamento Time LSB	Chorus MOD Level	0–127
38	Data Entry LSB		
39	Volume LSB	Chorus Depth	0–127
40	Balance LSB	Chorus Feedback	0–98
41		Delay Switch	0–1
42	Pan LSB	Delay Time	0–105
43	Expression LSB	Delay Level	0–127
44		Delay Balance	0–100
45		Delay Feedback	0–98
46			
47			
48	General Purpose Controller 1 LSB		
49	General Purpose Controller 2 LSB		
50	General Purpose Controller 3 LSB		
51	General Purpose Controller 4 LSB		
52			
53			
54			
55			
56			
57			
58			
59			

MIDI Control Change Table

MIDI Control#	MIDI Controller Name	Parameter Name	Range
60			
61			
62			
63			
64	Hold 1	(Hold)	
65	Portamento		
66	Sostenuto	(Sostenuto)	
67	Soft		
68	Legato Foot Switch		
69	Hold 2		
70	Sound Controller1		
71	Sound Controller2		
72	Sound Controller3		
73	Sound Controller4		
74	Sound Controller5		
75	Sound Controller6		
76	Sound Controller7		
77	Sound Controller8		
78	Sound Controller9		
79	Sound Controller10		
80	General Purpose Controller 5		
81	General Purpose Controller 6		
82	General Purpose Controller 7		
83	General Purpose Controller 8		
84	Portamento Control		
85			
86			
87			
88			
89			
90			
91	Reverb	(Part Delay Send Level)	
92	Tremolo		
93	Chorus	(Part Chorus Send Level)	
94	Seleste		
95	Phaser		
96	Data Increment		
97	Data Decrement		
98	NRPN LSB		
99	NRPN MSB		
100	RPN LSB		
101	RPN MSB		
102			
103			
104			
105			
106			
107			
108			
109			
110			
111			
112			
113			
114			
115			
116			
117			
118			
119			

* *Parameters shown in parentheses ( ) cannot be edited using VariOS 303 Controller.*