Roland®

V-Synth

Version 2.0

OWNER'S MANUAL

Thank you, and congratulations on your choice of the Roland V-Synth.

Before using this unit, carefully read the sections entitled: "IMPORTANT SAFETY INSTRUCTIONS" (p. 2), "USING THE UNIT SAFELY" (p. 3), and "IMPORTANT NOTES" (p. 4). 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 and Sound List should be read in their entirety. These manuals should be saved and kept on hand as a convenient reference.

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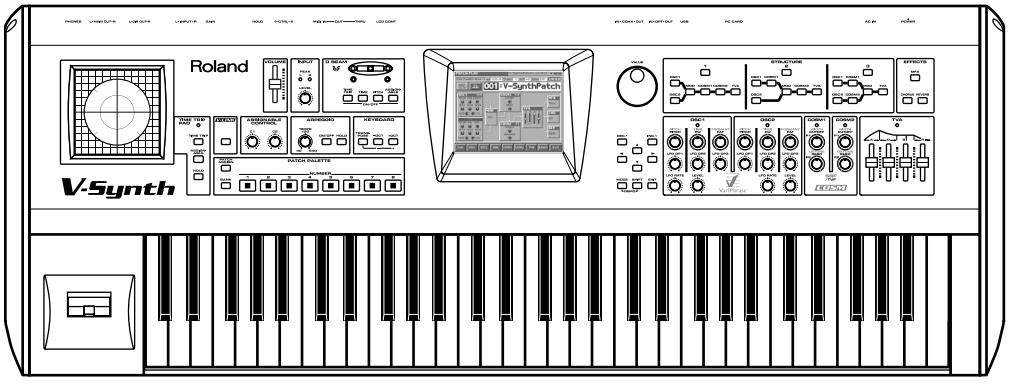

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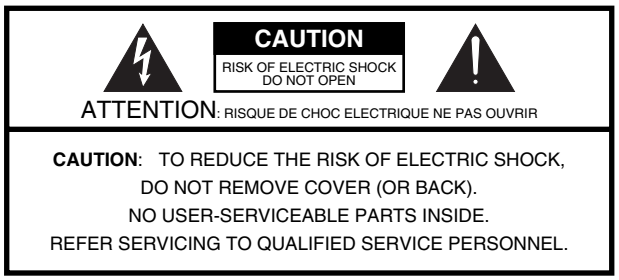
WARNING: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS.

IMPORTANT SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS

WARNING - When using electric products, basic precautions should always be followed, including the following:

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any of the ventilation openings. Install in accordance with the manufacturers instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

For the U.K.

WARNING: THIS APPARATUS MUST BE EARTHED
IMPORTANT: THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.
GREEN-AND-YELLOW: EARTH, BLUE: NEUTRAL, BROWN: LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured GREEN or GREEN-AND-YELLOW.

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

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.
- Connect mains plug of this model to a mains socket outlet with a protective earthing connection.
- 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.
- This unit should be used only with a rack or stand that is recommended by Roland.
- When using the unit with a rack or stand recommended by Roland, the rack or stand must be carefully placed so it is level and sure to remain stable. If not using a rack or stand, you still need to make sure that any location you choose for placing the unit provides a level surface that will properly support the unit, and keep it from wobbling.
- The unit should be connected to a power supply only of the type described in the operating instructions, or as marked on the unit.
- Use only the attached power-supply cord.
- Do not excessively twist or bend the power cord, nor place heavy objects on it. Doing so can damage the cord, producing severed elements and short circuits. Damaged cords are fire and shock hazards!

⚠WARNING

- This unit, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level, or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should immediately stop using the unit, and consult an audiologist.
- Do not allow any objects (e.g., flammable material, coins, pins); or liquids of any kind (water, soft drinks, etc.) to penetrate the unit.
- Immediately turn the power off, remove the power cord from the outlet, and request servicing by your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page when:
  - The power-supply cord, or the plug has been damaged; or
  - If smoke or unusual odor occurs
  - Objects have fallen into, or liquid has been spilled onto the unit; or
  - The unit has been exposed to rain (or otherwise has become wet); or
  - The unit does not appear to operate normally or exhibits a marked change in performance.
- 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!)
- Do not force the unit's power-supply cord to share an outlet with an unreasonable number of other devices. Be especially careful when using extension cords—the total power used by all devices you have connected to the extension cord's outlet must never exceed the power rating (watts/amperes) for the extension cord. Excessive loads can cause the insulation on the cord to heat up and eventually melt through.
- Before using the unit in a foreign country, consult with your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page.

USING THE UNIT SAFELY

⚠WARNING

- DO NOT play a CD-ROM disc on a conventional audio CD player. The resulting sound may be of a level that could cause permanent hearing loss. Damage to speakers or other system components may result.
- Do not put anything that contains water (e.g., flower vases) on this unit. Also, avoid the use of insecticides, perfumes, alcohol, nail polish, spray cans, etc., near the unit. Swiftly wipe away any liquid that spills on the unit using a dry, soft cloth.

⚠ CAUTION

- The unit should be located so that its location or position does not interfere with its proper ventilation.
- This unit for use only with Roland keyboard stand KS-12. Use with other stands is capable of resulting in instability causing possible injury.
- Always grasp only the plug on the power-supply cord when plugging into, or unplugging from, an outlet or this unit.
- At regular intervals, you should unplug the power plug and clean it by using a dry cloth to wipe all dust and other accumulations away from its prongs. Also, disconnect the power plug from the power outlet whenever the unit is to remain unused for an extended period of time. Any accumulation of dust between the power plug and the power outlet can result in poor insulation and lead to fire.

⚠ CAUTION

- Try to prevent cords and cables from becoming entangled. Also, all cords and cables should be placed so they are out of the reach of children.
- Never climb on top of, nor place heavy objects on the unit.
- Never handle the power cord or its plugs with wet hands when plugging into, or unplugging from, an outlet or this unit.
- Before moving the unit, disconnect the power plug from the outlet, and pull out all cords from external devices.
- Before cleaning the unit, turn off the power and unplug the power cord from the outlet (p. 52).
- Whenever you suspect the possibility of lightning in your area, pull the plug on the power cord out of the outlet.
- Should you remove the screws for the PC card protector, keep them in a safe place out of children's reach, so there is no chance of them being swallowed accidentally.

IMPORTANT NOTES

In addition to the items listed under "IMPORTANT SAFETY INSTRUCTIONS" and "USING THE UNIT SAFELY" on pages 2–4, please read and observe the following:

Power Supply

- Do not use this unit on the same power circuit with any device that will generate line noise (such as an electric motor or variable lighting system).
- Before connecting this unit to other devices, turn off the power to all units. This will help prevent malfunctions and/or damage to speakers or other devices.
- Although the LCD and LEDs are switched off when the POWER switch is switched off, this does not mean that the unit has been completely disconnected from the source of power. If you need to turn off the power completely, first turn off the POWER switch, then unplug the power cord from the power outlet. For this reason, the outlet into which you choose to connect the power cord's plug should be one that is within easy reach and readily accessible.

Placement

- Using the unit near power amplifiers (or other equipment containing large power transformers) may induce hum. To alleviate the problem, change the orientation of this unit; or move it farther away from the source of interference.
- This device may interfere with radio and television reception. Do not use this device in the vicinity of such receivers.
- Noise may be produced if wireless communications devices, such as cell phones, are operated in the vicinity of this unit. Such noise could occur when receiving or initiating a call, or while conversing. Should you experience such problems, you should relocate such wireless devices so they are at a greater distance from this unit, or switch them off.
- 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.
- When moved from one location to another where the temperature and/or humidity is very different, water droplets (condensation) may form inside the unit. Damage or malfunction may result if you attempt to use the unit in this condition. Therefore, before using the unit, you must allow it to stand for several hours, until the condensation has completely evaporated.
- Do not allow objects to remain on top of the keyboard. This can be the cause of malfunction, such as keys ceasing to produce sound.

Maintenance

- For everyday cleaning wipe the unit with a soft, dry cloth or one that has been slightly dampened with water. To remove stubborn dirt, use a cloth impregnated with a mild, non-abrasive detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.
- Never use benzine, thinners, alcohol or solvents of any kind, to avoid the possibility of discoloration and/or deformation.

Repairs and Data

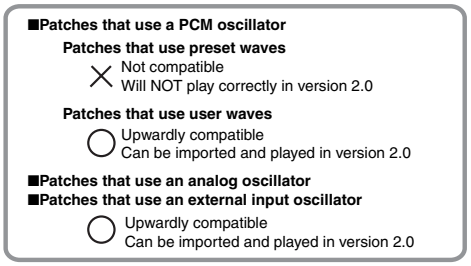
- Please be aware that all data contained in the unit's memory may be lost when the unit is sent for repairs. Important data should always be backed up on a memory card, or written down on paper (when possible). During repairs, due care is taken to avoid the loss of data. However, in certain cases (such as when circuitry related to memory itself is out of order), we regret that it may not be possible to restore the data, and Roland assumes no liability concerning such loss of data.

Additional Precautions

- Please be aware that the contents of memory can be irretrievably lost as a result of a malfunction, or the improper operation of the unit. To protect yourself against the risk of loosing important data, we recommend that you periodically save a backup copy of important data you have stored in the unit's memory on a memory card.
- Unfortunately, it may be impossible to restore the contents of data that was stored in the unit's memory, on a memory card, or in another MIDI device (e.g., a sequencer) once it has been lost. Roland Corporation assumes no liability concerning such loss of data.
- Use a reasonable amount of care when using the unit's buttons, sliders, or other controls; and when using its jacks and connectors. Rough handling can lead to malfunctions.
- Never strike or apply strong pressure to the display.
- When connecting / disconnecting all cables, grasp the connector itself—never pull on the cable. This way you will avoid causing shorts, or damage to the cable's internal elements.
- A small amount of heat will radiate from the unit during normal operation.
- To avoid disturbing your neighbors, try to keep the unit's volume at reasonable levels. You may prefer to use headphones, so you do not need to be concerned about those around you (especially when it is late at night).
- When you need to transport the unit, package it in the box (including padding) that it came in, if possible. Otherwise, you will need to use equivalent packaging materials.
- Use only the specified expression pedal (EV-series; sold separately). By connecting any other expression pedals, you risk causing malfunction and/or damage to the unit.
- Use a cable from Roland to make the connection. If using some other make of connection cable, please note the following precautions.
  - Some connection cables contain resistors. Do not use cables that incorporate resistors for connecting to this unit. The use of such cables can cause the sound level to be extremely low, or impossible to hear. For information on cable specifications, contact the manufacturer of the cable.
- The sensitivity of the D Beam controller will change depending on the amount of light in the vicinity of the unit. If it does not function as you expect, adjust the sensitivity as appropriate for the brightness of your location.

Compatibility of patches created on an older version of V-Synth

- Be aware that if patches created on a V-Synth with a system version older than 2.0 (i.e., versions 1.00 through 1.51 of the system) use preset PCM waves, those patches will not play correctly on version 2.0.



Before Using Cards

Using Memory Cards

- Carefully insert the memory card all the way in—until it is firmly in place.
- Never touch the terminals of the memory card. Also, avoid getting the terminals dirty.
- Memory cards are constructed using precision components; handle the cards carefully, paying particular note to the following.
  - To prevent damage to the cards from static electricity, be sure to discharge any static electricity from your own body before handling the cards.
  - Do not touch or allow metal to come into contact with the contact portion of the cards.
  - Do not bend, drop, or subject cards to strong shock or vibration.
  - Do not keep cards in direct sunlight, in closed vehicles, or other such locations (storage temperature: -25 to 85° C).
  - Do not allow cards to become wet.
  - Do not disassemble or modify the cards.

Handling CD-ROMs

- Avoid touching or scratching the shiny underside (encoded surface) of the disc. Damaged or dirty CD-ROM discs may not be read properly. Keep your discs clean using a commercially available CD cleaner.

Copyright

- Unauthorized recording, distribution, sale, lending, public performance, broadcasting, or the like, in whole or in part, of a work (musical composition, video, broadcast, public performance, or the like) whose copyright is held by a third party is prohibited by law.
- When exchanging audio signals through a digital connection with an external instrument, this unit can perform recording without being subjected to some of the restrictions of the Serial Copy Management System (SCMS). This is because the unit is intended solely for musical production, and is designed not to be subject to restrictions as long as it is used to record works (such as your own compositions) that do not infringe on the copyrights of others. (SCMS is a feature that prohibits second-generation and later copying through a digital connection. It is built into MD recorders and other consumer digital-audio equipment as a copyright-protection feature.)
- Do not use this unit for purposes that could infringe on a copyright held by a third party. We assume no responsibility whatsoever with regard to any infringements of third-party copyrights arising through your use of this unit.

How To Use This Manual

This owner's manual is organized as follows.
For details on all the patches and waves that the V-Synth contains, refer to the separate "Sound List."

Quick Start (p. 19)

This chapter offers a basic introduction to the V-Synth, and provides simple, easy-to-understand explanations, allowing the beginner to quickly experience many of the V-Synth's exciting features. As you read the Quick Start, we recommend actually performing the described operations on your V-Synth. This'll help you understand most of what you need to know for basic operations.

Reference (p. 53)

Overview of the V-Synth

This explains the structure of the V-Synth, and basic operation. Reading it is essential for understanding V-Synth operational procedures.

Playing in Patch Mode

This explains how to play the V-Synth in Patch mode. Reading it is essential for understanding V-Synth operational procedures.

Creating a Patch

This chapter explains how to create patches, and describes what the patch parameters do and how they are composed. Read this chapter when you wish to create patches.

Creating a Rhythm Kit (Rhythm Mode)

This chapter explains how to create a Rhythm Kit.

Creating and Editing Samples (Sample Mode)

This explains how to sample, and how to edit and encode samples. Read this when you want to sample sounds.

Settings Common to All Modes (System Mode)

This chapter describes how the System parameters that determine the V-Synth's operation environment work and how these parameters are organized. Read it as necessary.

Disk-Related Functions (Disk Mode)

This chapter covers disk-related operations such as saving data to disk and loading data from disk. Read it as necessary.

Transferring Data (USB Mode)

This explains how to connect the V-Synth to your computer, and transfer data such as patches and waves. Read this as necessary.

Other Functions

This explains how to transmit data to an external MIDI device (Data Transfer), and how to restore all data of the V-Synth to the factory settings (Factory Reset). Read it as necessary.

Appendices (p. 151)

This chapter contains a troubleshooting section for use when the V-Synth is not functioning as expected. There is also a list of messages that you can refer to if an message appears on the display. A list of parameters and a MIDI implementation chart are also provided.

Notation Used in This Owner's Manual

To make operation procedures easy to understand, the following notation system is adopted:

Characters and graphics in square brackets [ ] indicate buttons and knobs on the front panel. For example, [MODE] indicates the MODE button, and [▲], [▼], [◄], and [►] indicates the cursor buttons.

Text or graphics enclosed in < > indicate objects in the screen (touch screen) that can be touched using your finger. The manual will instruct you to "touch" the object shown in the touch screen.

(p. **) refers to pages within the manual.

Below are the meanings of the symbols preceding certain sentences in the text.

NOTE
These are notes. Be sure to read them.

MEMO
These are reference memos. Read it as necessary.

HINT
These are hints for operating the V-Synth. Read it as necessary.

These provide information from related reference pages. Read it as necessary.

NOTE
The display screens printed in this owner's manual are based on the factory settings. However, please be aware that in some cases they may differ from the actual factory settings.

NOTE
Please be aware that in the screen shots printed in this manual, the patch names may differ from the factory settings.

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Main Features

The V-Synth is a professional synthesizer keyboard with a sound generator section that represents a pooling of numerous proprietary Roland technologies, allowing an extremely high level of musical expressive potential.

From acoustic-like sounds to lush pads, rhythmical grooves, and aggressive sounds that could not be produced by synthesizers of the past, the V-Synth is able to create organic changes in the sound. The great-feeling 61-note keyboard and a powerful set of controllers give you the means to play these sounds in a musical way.

Whether you're playing live on stage or producing music in the studio, and regardless of the musical styles in which you're working, the V-Synth gives you usable and playable sounds that are available nowhere else.

■ The V-Synth sound engine, producing utterly unique sounds

- The sound generator section consists of a PCM oscillator with VariPhrase capability, high-quality analog modeling oscillators, powerful modulators, and COSM processors equipped with sideband filters. You can specify how these sections are connected simply by selecting a structure. By combining these sections, each of which delivers powerful functionality, you can create completely new sounds, which could not be produced on any previous synthesizer.
- Each of the two oscillators can function as one of three types: PCM (VariPhrase), analog modeling, and external input. Dedicated envelopes are provided for the principal parameters of each oscillator. Even when using the oscillators alone, you can apply a wide range of time-based changes.
- The PCM oscillators utilize Roland's proprietary VariPhrase technology. In a revolutionary breakthrough in comparison to conventional waveform playback, VariPhrase allows the pitch, time, and formant of the audio material to be varied with complete independence in real time, while maintaining high audio quality. This transforms a PCM waveform into "elastic audio," which you can freely stretch like a rubber band in the desired direction and create organic-sounding changes.
- The analog modeling oscillators are packed with high-quality waveforms. Version 2.0 adds new choices, such as the "Super Saw," which is just what you need for thick detuned textures; and a feedback oscillator, which produces a dramatically varying lead sound—all together giving you a total of fourteen waveforms to stimulate your musical creativity.
- The oscillator output can be processed by Roland's proprietary COSM processors. Going far beyond the filter functionality seen on typical synthesizers, these implement a wide range of processes. There are a total of 16 types, including TVF, guitar amp modeling, Lo-Fi processor, a sideband filter, which imparts a sense of playable pitch to noise or a phrase, and a resonator, which adds the body resonances of an instrument. You can also apply a COSM processor to an external audio input and use the V-Synth as a filter bank.

■ Sound Shaper function allows intuitive sound creation

- Version 2.0 features a Sound Shaper function, which liberates the musician from dealing with an overwhelming number of edit parameters. Simply choose the desired sound template from the list, and the parameters that are effective for that template will be selected and available for your control. You'll be able to obtain the desired variations easily by operating a few knobs or buttons to edit exactly what you need, just like a professional sound designer.

■ Unique and useful patches

- In version 2.0, the preset patches have been completely redone, starting at the level of the wave data, to give you even more unique and musically useful sounds. With greater playability and controllability than ever, we've taken advantage of the V-Synth's new functionality to further broaden its inimitable universe of sound.
- All sounds can be rewritten by the user down to the level of the source waves. You can sample directly into the V-Synth, or import WAV/AIFF files from external devices, making this is an ideal instrument for the professional who insists on absolute originality.
- Version 2.0 provides a Rhythm mode screen, which lets you assign different V-Synth sounds to each note of the keyboard. This means that you can use the synth sound generator as a rhythm kit to play many types of sound from the keyboard. Since the sound assigned to each key is a fully editable V-Synth sound, you can have anything from an analog kick to VariPhrase rhythm loops available for immediate playing.

■ Keyboard and controllers for musically playing the unique sounds

- The 61-note weighted keyboard is sensitive to velocity and aftertouch. It conveys every nuance of your playing to the V-Synth's powerful sound generator section.
- In addition to a bend lever and control knobs, the V-Synth's powerful array of controllers includes a Time Trip pad and a D Beam controller, which let your emotion be directly reflected in the sound.

■ The power to make bold time-based changes in sound

- Version 2.0 provides a multi-step modulator, which lets you choose four parameters from a broad range of choices, and simultaneously modulate these parameters by completely different ascending or descending patterns. You can use the panel knobs to freely program the ascending or descending patterns, and you can even turn Smoothing on and use this as an LFO.
- VariPhrase waves can be freely controlled using the Time Trip function. By stroking the Time Trip pad in a circular motion, you can halt the progress of the waveform while the sound is still being heard, and then play that sound from the keyboard as the desired pitches. It's also easy to create distinctive effects such as manually controlling the progression of break-beats.
- All of the various functions that control time-based change can be synchronized to the tempo. VariPhrase, the LFO and envelope of each section, the programmable arpeggiator, the multi-step modulator, and the effects can all be controlled by the master tempo.

■ Hardware that meets the demands of the professional

- The V-Synth provides both a large touch-screen and dedicated knobs for parameters. Its highly developed user interface allows both the logical approach of editing the parameters listed in the screen as well as the more directly "analog" approach of turning multiple knobs simultaneously.
- Both optical and coaxial digital audio jacks are provided. Digital output supports sample rates of 44.1 kHz, 48 kHz, and 96 kHz.
- The USB connector supports file transmission or MIDI communication. It's easy to back up a variety of data on your computer via the USB connection.
- You can also store large amount of data using the PC card slot. Commercially available PC card adaptors allow you to use CompactFlash or SmartMedia cards.

■ Potential for expansion

- The V-Synth's V-LINK capability lets it play or control music and video simultaneously. Just connect the V-Synth to a V-LINK compatible video device, and you'll be able to use the V-Synth's controllers to control the image brightness, hue, playback speed, or switch between images.
- The V-Synth supports the "V-Card" series (sold separately) of system applications. Simply by inserting a card into the slot and turning the power on, you can start up the V-Synth as a completely different device without making any modifications to the V-Synth itself.
  → VC-1 "D-50" transforms the V-Synth into a Roland D-50 (a classic digital synthesizer, which was released in 1987). Everything from the preset patterns to the last detail of functionality is reproduced, giving you that inimitable D-50 sound with the stability of today's hardware.
  → VC-2 "Vocal Designer" transforms the V-Synth into a cutting-edge vocal modeling processor. By speaking into a mic while you play the keyboard, you can produce beautifully intelligible human chorus sounds, as well as a wide range of high-quality vocal sounds that have never been heard before.

Changes in Version 2.0

Enhanced oscillators (OSC)

"SUPER-SAW," "FEEDBACK-OSC," and "X-MOD-OSC" have been added to the Oscillator (OSC) section.

☞ **Waveform (Analog Oscillator Waveform)** (p. 85)

"Sound Shaper" function

The newly added "Sound Shaper" function lets you design the sound intuitively. Simply select a groove and template, and operate knobs or buttons to edit exactly what you need to obtain the sound you want, just like a professional sound designer.

☞ **Creating a patch intuitively (Sound Shaper)** (p. 76)

New preset patches

The preset patches have been completely redone from the wave level upward, giving you a wide range of unique and highly musical sounds.

☞ **Sound List** (separate booklet)

Rhythm Mode screen

The new Rhythm mode lets you assign a different V-Synth sound to each note of the keyboard, allowing you to use the synth sound generator to play numerous different sounds as a rhythm kit.

☞ **Creating a Rhythm Kit (Rhythm Mode)** (p. 101)

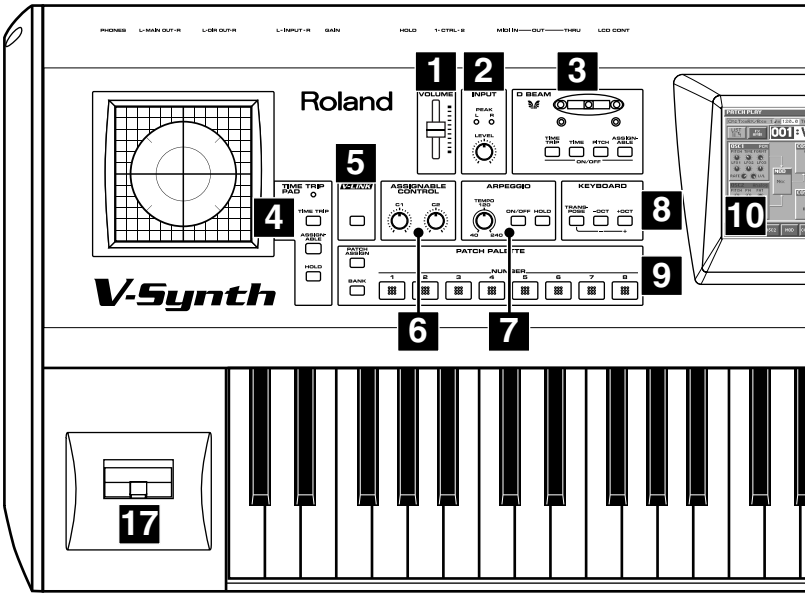
Multi-step modulator

You can choose four parameters from a broad range of choices, and use a different ascending or descending pattern to modulate each of these parameters simultaneously. You can use the panel knobs to freely program the ascending or descending pattern, and if the Smoothing function is turned on you can even use these patterns as an LFO.

☞ **Using steps to vary the sound (Multi Step Modulator)** (p. 66)

Panel Descriptions

Front Panel



1

Volume Slider

Adjusts the overall volume that is output from the rear panel MAIN OUT jacks and PHONES jack.→ (p. 21)

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. → (p. 105)

3 D BEAM

You can apply a variety of effects to sounds simply by moving your hand. → (p. 68)

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: Apply the Time Trip effect.

TIME: Apply the Time Control effect.

PITCH: Apply the Pitch Control effect.

ASSIGNABLE: Apply the effect that is specified for each sound.

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.

[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.

5 V-LINK

Enables or disables control of an externally connected V-LINK device.

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. → (p. 69)

7 ARPEGGIO

Here you can control the arpeggiator.

[TEMPO]

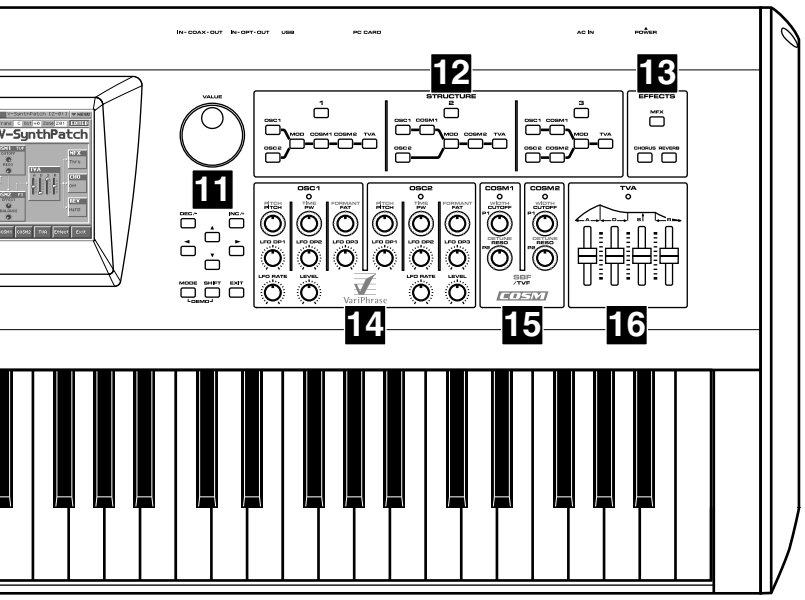
Adjusts the tempo of the arpeggios.

[ON/OFF]

Switches the Arpeggiator on/off.

[HOLD]

Switches the Arpeggiator hold on/off.



8 KEYBOARD

Here you can change the pitch range of the keyboard.

[TRANSPOSE]

Specifies transposing the keyboard in semitone steps. → (p. 60)
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. → (p. 61)

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]

You can register the currently selected patch as a favorite patch by holding down this button and pressing [NUMBER] (1–8).

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. → (p. 25)

[DEC/-], [INC/+]

This is used to modify values. If you keep on holding down one button while pressing the other, the value change accelerates. If you press one of these buttons while holding down [SHIFT], the value will change in bigger increments. → (p. 25)

[▲], [▼], [◄], [►] (Cursor Buttons)

Moves the cursor location up/down/left/right. → (p. 24)

MEMO

You can hold down [SHIFT] and use the left/right cursor ([◄], [►]) keys to switch the zone indicated in the upper right of the PATCH PLAY screen or the EDIT screen (p. 98).

[MODE]

Opens the Mode Menu window.

[SHIFT]

This button is used in conjunction with other buttons to execute various functions.

[EXIT]

Return to the PLAY screen, or close the currently open window. In some screens, this causes the currently executing function to be aborted.

12 STRUCTURE

Here you can turn each sound-producing element (section) on or off.

[1], [2], [3]

Switches the structure type (the way in which the sections are connected).

[OSC1], [OSC2], [MOD], [COSM1], [COSM2], [TVA]

These buttons switch the corresponding section on/off.
Only the buttons of the structure type selected by [1], [2], or [3] are active.

13 EFFECTS

Here you can switch the onboard effects (multi-effects, chorus, reverb) on/off. When an effect is on, the indicator for its button will light.

[MFX]

Switches multi-effects on and off.

[CHORUS]

Switches chorus on and off.

[REVERB]

Switches reverb on and off.

14 OSC1, OSC2

Here you can adjust the oscillator section.
These knobs are active if the oscillator is on (indicator lit). The result of adjusting these knob will depend on the oscillator type that is selected.

[PITCH]

This modifies the pitch.

[TIME]/[PW]

TIME: This modifies the time.
PW: This modifies the pulse width.

[FORMANT]/[FAT]

FORMANT: This modifies the formant.
FAT: Adjusts the fatness of the sound when using an analog oscillator.

[LFO DP1], [LFO DP2], [LFO DP3]

These knobs adjust the depth of the LFO that is applied to the parameters of the knobs located above each knob.

[LFO RATE]

This modifies the LFO rate.

[LEVEL]

This modifies the volume.

15 COSM1, COSM2

Here you can adjust the COSM sections.
These knobs are active when COSM is on (indicator lit). The result of adjusting these knobs will depend on the COSM type that is selected.

[WIDTH]/[CUTOFF]/[P1]

WIDTH: Adjusts the width when SBF (Side Band Filter) is selected.
CUTOFF: Adjusts the cutoff frequency when TVF is selected.
P1: Adjusts the parameter specified for the type when other types are selected.

[DETUNE]/[RESO]/[P2]

DETUNE: Adjusts the detune when SBF (Side Band Filter) is selected.
RESO: Adjusts the resonance when TVF is selected.
P2: Adjusts the parameter specified for the type when other types are selected.

16 TVA

Here you can adjust the TVA section.
These sliders are active when the TVA is on (indicator lit).

[A]

This modifies the Attack Time.

[D]

This modifies the Decay Time.

[S]

This modifies the Sustain Level.

[R]

This modifies the Release Time.

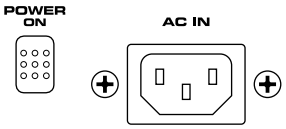
MEMO

You can also use these sliders to make envelope settings in the envelope setting screens of other sections.

17 Pitch Bend/Modulation Lever

This allows you to control pitch bend or apply vibrato.
→ (p. 36)

Rear Panel

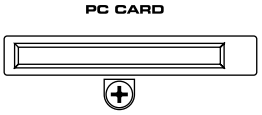


POWER Switch

Press to turn the power on/off. → (p. 21, p. 52)

AC Inlet

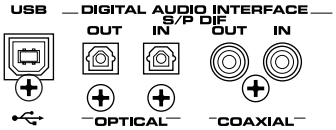
Connect the included power cord to this inlet. → (p. 20)



PC CARD Slot

A memory card can be inserted here.

For details on installing the included PC card protector, refer to p. 22.



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)

(conforming to IEC60958).

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.

LCD CONTRAST Knob

Adjusts the display contrast. → (p. 22)

MIDI Connectors (IN, OUT, THRU)

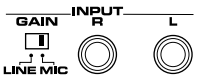
These connectors can be connected to other MIDI devices to receive and transmit MIDI messages.

CTRL 1, CTLR 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.
→ (p. 127, p. 37)

HOLD PEDAL Jack

An optional pedal switch (DP series) can be connected to this jack for use as a hold pedal. → (p. 37)



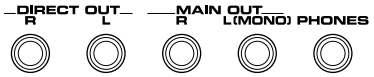
INPUT Jacks (L, R)

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

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)

This jack is a stereo output of the sound unprocessed by onboard effects. An external effects processor or other devices can be connected to these jacks.

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.
→ (p. 20)

PHONES Jack

This is the jack for connecting headphones (sold separately).
→ (p. 20)

About VariPhrase

What is VariPhrase?

VariPhrase has the following advantages:

1. Capable of changing the pitch, rate of time expansion/compression and voice characteristics (formant) on a real-time basis.
2. Allows easy synchronization to tempo and pitch.
3. A single sample covers an extended range of keys compared to conventional digital samplers.
4. Retains sound quality, while implementing the above three advantages.

VariPhrase overcomes many problems that conventional samplers and digital recorders have with audio phrases.

Typical issues with Digital Samplers and Digital recorders

- Changing tempo affects Pitch.
- Changing the pitch of phrases affects tempo and formant of the sound.
- Limited control of audio phrases. You cannot adjust a partial section of a sound in real-time.
- Most samplers require multiple samples over limited key ranges for realistic playback of a sound.
- Samples of the same tempo must be available for performing chords, otherwise the notes of the chord will be out of sync.
- Pitch or tempo changes on Digital samplers tends to degrade audio quality.

VariPhrase solves all of these problems.

Quick Start

Getting Ready

Connecting an Amp and Speaker System

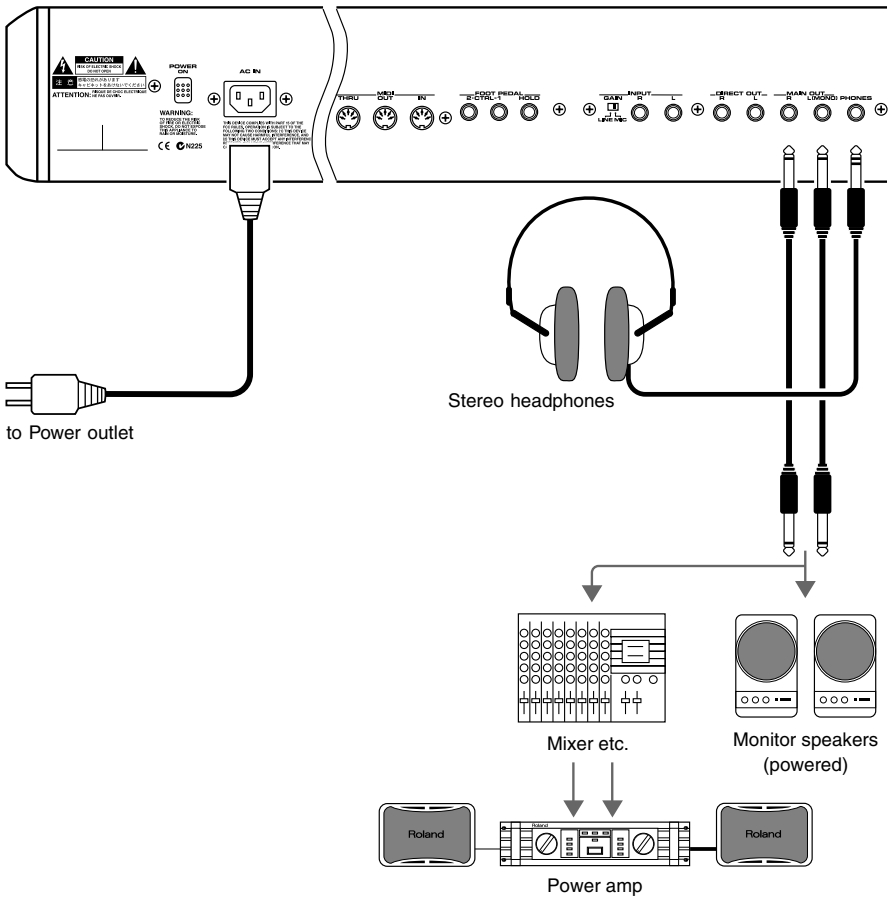
Since the V-Synth contains no amplifier or speakers, you'll need to connect it to audio equipment such as a keyboard amplifier, monitor speaker system or home stereo, or use headphones to hear its sound.

Here we will explain example connections that use mainly the MAIN OUT jacks.

1 **Before hooking anything up, make sure that the power on all of your gear is turned OFF.**

2 **Connect one end of the supplied power cable to the V-Synth, and the other end to a power outlet.**

3 **Connect the V-Synth to your amp/speaker system.**



Use audio cables to connect audio equipment such as an amp or speakers. If you're using headphones, plug them into the PHONES jack.

For details on the settings you need when connecting the V-Synth to your computer, refer to "**Connecting to Your Computer via USB (USB Mode)** "(p. 138).

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.

HINT

In order to fully experience the V-Synth's sound, we recommend using a stereo amp/speaker system. If you're using a mono system, however, make your connections to the V-Synth's MAIN OUT jack L (MONO).

NOTE

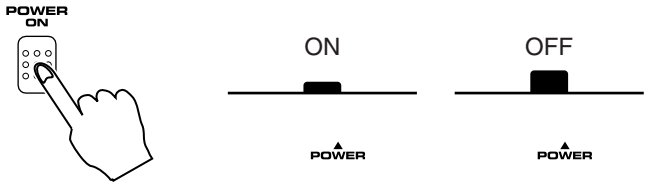
Audio cables are not included with the V-Synth. You'll need to provide them.

Turning On the Power

1 **Before turning on the V-Synth's power, consider these two questions:**

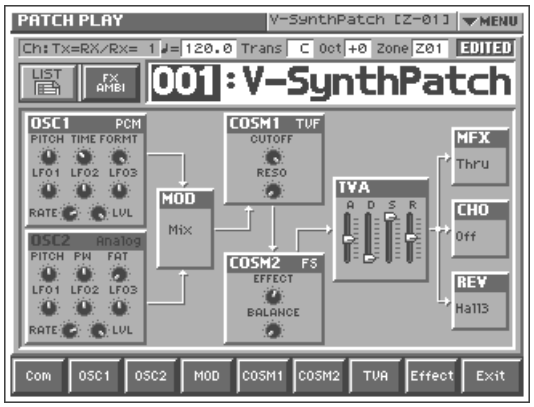
- Are all peripheral devices connected correctly?
- Have the volume controls of the V-Synth and all connected audio devices been turned to their lowest settings?

2 **Turn on the POWER switch located on the rear panel of the V-Synth.**

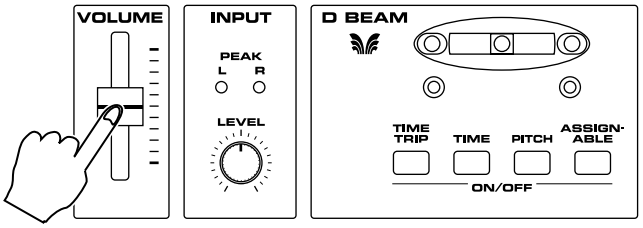


3 **Turn on the power for any connected amplifiers or speakers.**

4 **Wait for the V-Synth to start up. When it has started up normally, a screen like the following will appear.**



5 **Set the volume for your connected amplifier and speakers. While playing the V-Synth keyboard, gradually raise the V-Synth's volume slider to the desired listening level.**



NOTE
Once the connections have been completed (p. 20), turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunctions and/or damage to speakers and other devices.

NOTE
To ensure proper operation of the pitch bend lever, make sure not to touch the lever when turning the V-Synth's power on.

Do not touch!

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.

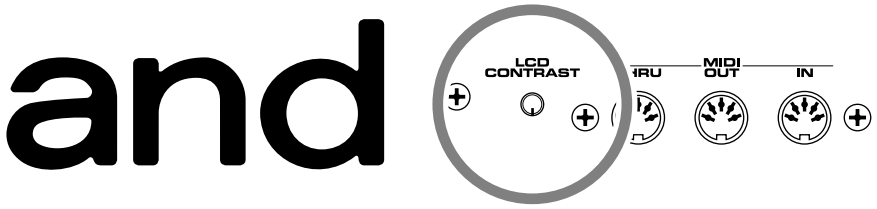
MEMO
While the V-Synth is starting up, the display will indicate "Processing..."

NOTE
Be careful not to set your listening volume too high to avoid damage to your amp/speaker system or your hearing.

HINT
In order to obtain the best audio quality from the V-Synth, we recommend that you set the V-Synth's volume to the maximum position, and adjust the volume appropriately on your amp or speaker system.

Adjusting the Display Contrast (LCD Contrast)

The characters in the display may be difficult to view immediately after turning on the V-Synth's power or after extended use. Your viewing angle or the current lighting conditions can also affect the appearance of the display. In such situations, you can turn the LCD CONTRAST knob (located on the rear panel) to adjust the contrast of the display.



Installing the PC Card Protector

The V-Synth provides a PC card protector to prevent theft of the memory card. To install the PC card protector, use the following procedure.

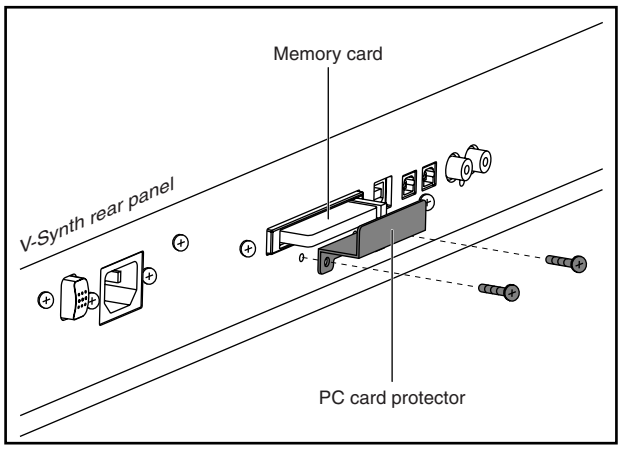
1 **Use a screwdriver to remove both of the screws from the bottom side of the PC CARD slot.**

2 **Insert the PC card into the PC CARD card slot.**

3 **Use the screws to fasten the PC card protector as shown below.**

** Never insert or remove a memory card while this unit's power is on. Doing so may corrupt the unit's data or the data on the memory card.*

** Carefully insert the memory card all the way in—until it is firmly in place.*



Basic Touch Screen Operation

The V-Synth features a touch screen. The touch screen lets you perform a variety of operations by lightly touching the screen.

* *The touch screen responds to a light touch. Pressing the touch screen with too much force, or with a hard object, may damage it. Be careful not to apply excessive force, and touch it only with your finger.*

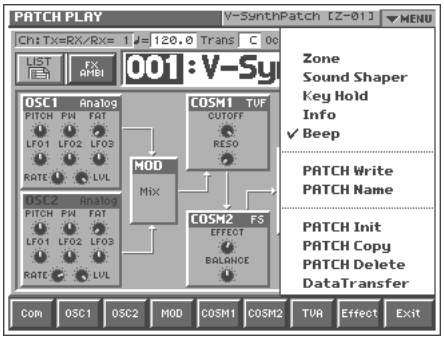
Enabling/Disabling the Beep Tone

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>.**

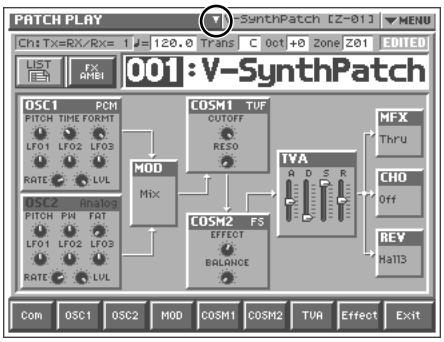
A pulldown menu appears.



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

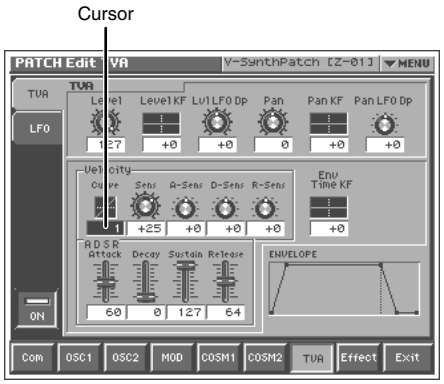
With this setting, the beep tone will be heard. If you perform the same procedure once again, the check mark will be cleared and the beep tone will no longer be heard.

* *If you have turned off the beep tone, a "∇" appears in the title area at the top of the screen when you touch a valid point on the touch screen.*



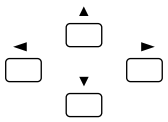
Moving the Cursor

A single screen or window displays multiple parameters or items for selection. To edit a parameter's value, move the cursor to the value. The cursor is a black rectangle, and the parameter value or item you select with the cursor is highlighted (displayed in inverted colors).



Cursor Buttons

Press [▲], [▼], [◄], or [►] (the cursor buttons) to move the cursor.



[▲]: moves the cursor up.

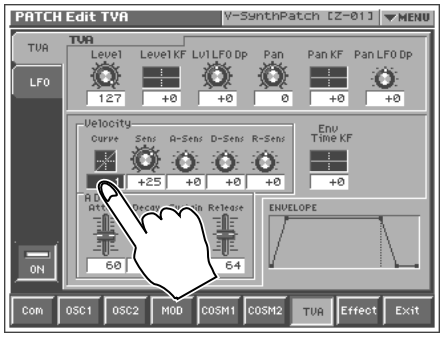
[▼]: moves the cursor down.

[◄]: moves the cursor to the left.

[►]: moves the cursor to the right.

Touch Screen

Directly touch a parameter value to move the cursor.



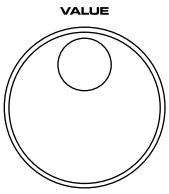
Editing a Value

To edit a value, you can use the VALUE dial, [INC/+] [DEC/-], or drag on the touch screen.

- In each V-Synth screen, you can select a value using the cursor as described earlier, and modify its value.
- Each parameter has its own range of possible values. You cannot set any value smaller than the minimum value or greater than the maximum value.

VALUE Dial

Turning the VALUE dial clockwise increases the value, and turning it counterclockwise decreases its value. Hold down [SHIFT] as you move the VALUE dial to increase value increments to make large value changes more quickly.

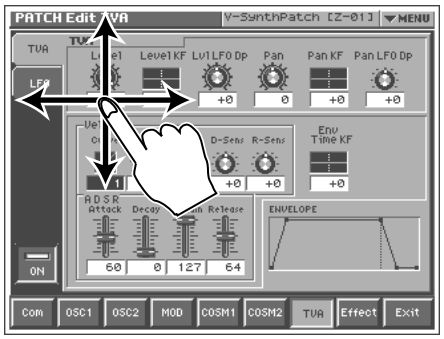


[INC/+] and [DEC/-]

Press [INC/+] to increase the selected value, and [DEC/-] to decrease it. Keep the button pressed for continuous adjustment. For faster value increases, keep [INC/+] pressed down and press [DEC/-]. To decrease values quickly, keep [DEC/-] pressed down and press [INC/+].

Touch Screen

Touch a parameter value, and drag your finger up/down or left/right. Dragging upward or to the right increases the value, and dragging downward or to the left decreases the value.



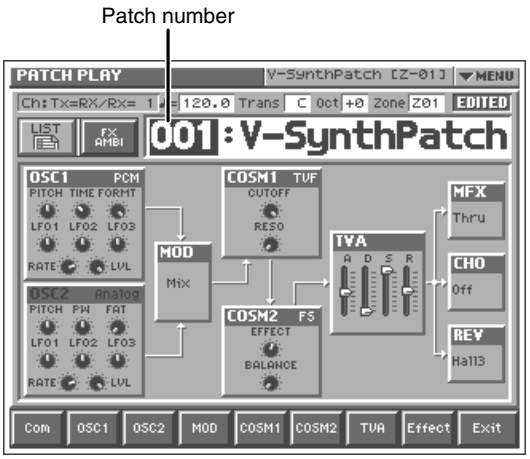
Try Out the Sounds

Selecting Patches and Playing Sounds

The V-Synth comes with a wide range of onboard sounds, including single tones called **patches**. Let's select a few patches to get an idea of the variety of sounds available with the V-Synth.

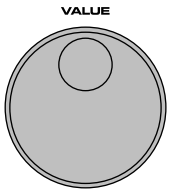
1 **Make sure the PATCH PLAY screen is displayed.**

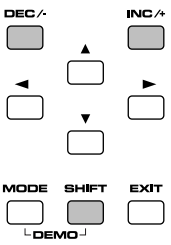
If the PATCH PLAY screen—shown below—is not displayed, press [EXIT] once or twice until the PATCH PLAY screen appears.



2 **Play the keyboard to hear what the selected patch sounds like.**

3 **To change to a different patch, touch the patch number to highlight it, and then turn the VALUE dial or press [INC/+] [DEC/-]. At this time you can switch more rapidly by holding down [SHIFT] while you perform these operations.**





HINT

Alternately, you can touch the patch number and drag your finger up and down—or right and left—to change patches.

For details on the factory-set patches in the V-Synth's memory, refer to "Sound List" (separate booklet).

Selecting Patches from the List

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

1

Make sure the PATCH PLAY screen is displayed.

If the PATCH PLAY screen is not displayed, press [EXIT] once or twice until the PATCH PLAY screen appears.

2

Touch <List> in the upper left area of the display.

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.

4

To view other patches, touch <017-032>–<241-256>, located at either side of the screen. To view higher-numbered patches, touch <257-512>, located at the bottom of the screen.

5

Touch <OK>.

The patch is selected and the PATCH List window closes.

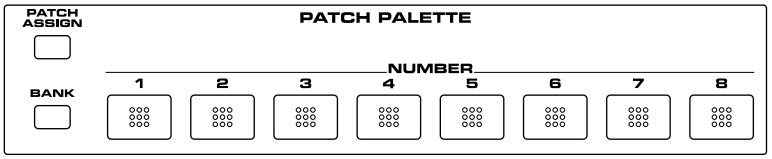
☞ "**Selecting Patches by Category** "(p. 59)

HINT

If you select a patch in the list and play the keyboard, the selected patch will sound. This is a useful way to audition the sound of a patch.

Selecting Favorite Patches (Patch Palette)

If your favorite, frequently used patches are registered in the Patch Palette, you can select them instantly by simply pressing NUMBER [1]–[8].
In each patch palette you can register eight patches, corresponding to the [1]–[8] keys. By using the [BANK] button to switch between the eight banks, you can register a total of 64 patches.



1 **Make sure the PATCH PLAY screen is displayed.**

2 **Press NUMBER [1]–[8] to select a patch.**

3 **To switch between patch palette banks, hold down [BANK] and press NUMBER [1]–[8].**

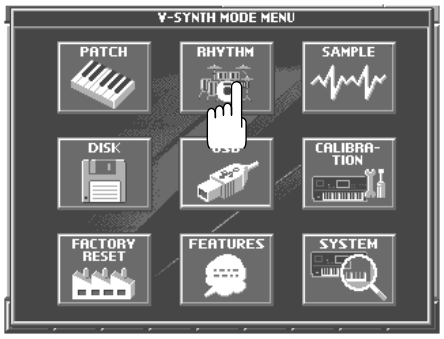
For instructions on how to register a favorite sound in the patch palette, refer to "**Registering a Favorite Patch (Patch Palette)** "(p. 75).

Playing a drum set (Rhythm mode)

Rhythm mode lets you assign a different V-Synth sound to each note of the keyboard. This lets you use the V-Synth as a rhythm sound module.

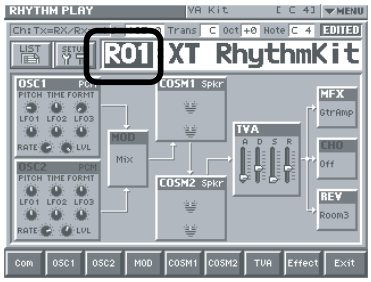
1 **Press [MODE].**

2 **In the V-SYNTH MODE MENU window that appears, touch <RHYTHM>.**

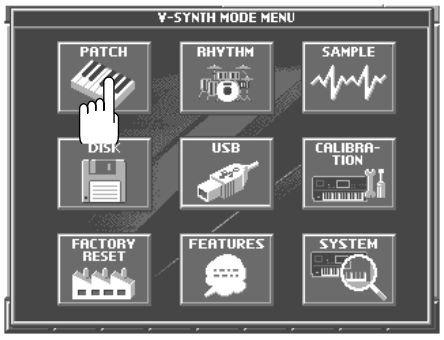


3 **Use the keyboard or an external MIDI device to play the rhythm kit.**

4 **To switch rhythm kits, touch the area where the patch number is displayed so it's highlighted, then turn the VALUE dial or use [INC/+][DEC/-].**



5 **To exit RHYTHM mode, press [MODE], and then touch <PATCH> in the V-SYNTH MODE MENU window that appears.**



For details on how to edit Rhythm mode settings, refer to "**Creating a Rhythm Kit (Rhythm Mode)** "(p. 101).

Try Out the Various Performance Features

The V-Synth is equipped with a variety of powerful performance features that can raise your musical expressiveness to new levels. These include the Time Trip Pad, the D Beam controller, and the Arpeggiator. Take a moment to try out some of the V-Synth's performance features.

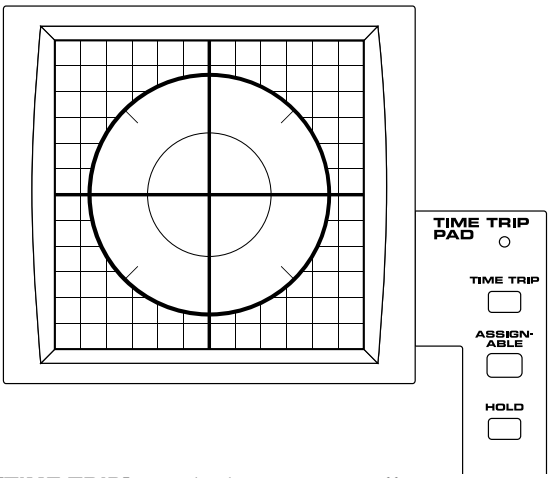
Manipulating Sounds with the Time Trip Pad

You can apply a variety of effects to the sound simply by touching your fingertip to the Time Trip Pad located at the left side of the front panel.

1 **Make sure the PATCH PLAY screen is displayed.**

If the PATCH PLAY screen is not displayed, press [EXIT] once or twice until the PATCH PLAY screen appears.

2 **Choose the function that you want to control from the Time Trip pad, and press the TIME TRIP PAD button for that function.**



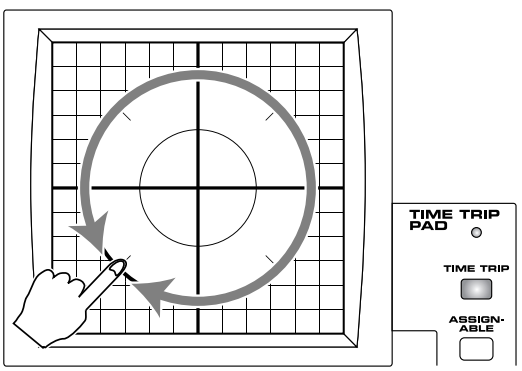
[TIME TRIP]: Apply the Time Trip effect.

[ASSIGNABLE]: Apply the effect that is specified by each patch.

3 **While you play the keyboard to produce sound, place your fingertip on the Time Trip pad and move your finger in the following way.**

If [TIME TRIP] is on

The effect will be applied when you move your finger in a circle on the Time Trip pad.



MEMO

What is the Time Trip function?

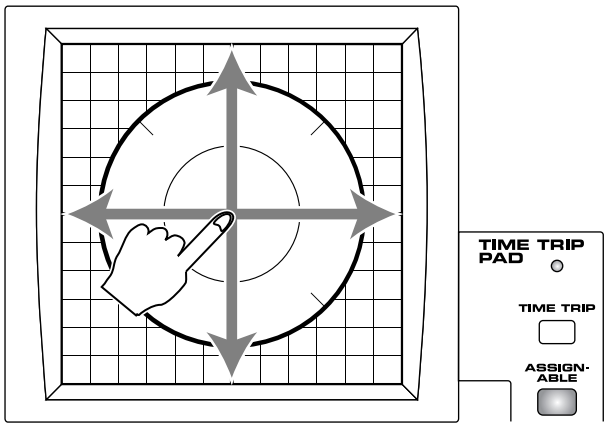
One of the advantages of variphrase is that the playback location and speed of the wave can be changed in real time. The Time Trip function takes advantage of this ability to manually control the playback location and speed of the wave. In patches that use variphrase, switch the Time Trip Pad function to "TIME TRIP" to use this function. While playing the keyboard, touch the Time Trip pad and the currently sounding wave will stop at the current playback location. Then as you move your finger from that point in a circle, the wave playback will advance in the direction of conventional playback (clockwise), or the reverse (counterclockwise). Unlike "scratching" on a turntable, this lets you control the playback without affecting the pitch, so you can play the sound at the pitch you specify from the keyboard.
You can use the D Beam controller to produce similar results.

NOTE

The Time Trip pad will have an effect if PCM is selected for the oscillator (OSC1/OSC2) and the "**Time Trip Sw (Time Trip Switch)** "(p. 86) is ON.

If [ASSIGNABLE] is on

The effect will be applied when you move your finger up/down/left/right on the Time Trip pad.



HINT

Time Trip Pad settings are saved with each patch. This means that you can create the best Time Trip Pad settings for each patch.

For details on using the Time Trip Pad, refer to "**Applying an Effect by Touching Your Finger to the Pad (Time Trip Pad)** "(p. 67).

Moving Your Hand Above the D Beam Controller to Apply Effects

You can apply various effects to the currently selected patch by simply moving your hand over the pair of D Beam controllers at the left side of the display.

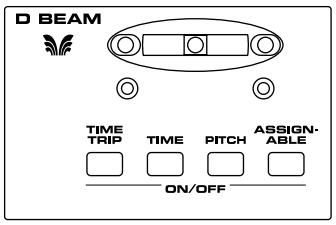
MEMO

The D Beam controller can be used simply by waving your hand over it. It can be used to apply various effects, depending on the function that is assigned to it.

1 Make sure the PATCH PLAY screen is displayed.

If the PATCH PLAY screen is not displayed, press [EXIT] once or twice until the PATCH PLAY screen appears.

2 Choose the function that you want to control from the D Beam controller, and press the D BEAM button for that function to turn on the D Beam controller.



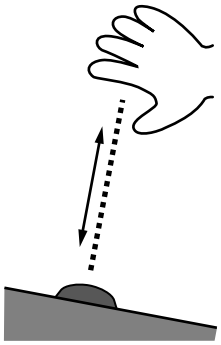
[TIME TRIP]: Apply the Time Trip effect.

[TIME]: Apply the time control effect.

[PITCH]: Apply the pitch control effect.

[ASSIGNABLE]: Apply the effect that is specified by each patch.

3 **Move your hand up and down slowly over each D Beam controller as you play the keyboard.**



Effects will be applied to the sound according to the button you pressed in step 2.

4 **To turn off the D Beam controller, once again press the button that you pressed in step 2, so its indicator goes out.**

MEMO
The D BEAM indicator lights when the D Beam controller is responding. The D BEAM indicator doesn't light if you're outside the valid range of the D Beam controller.

HINT
D Beam controller settings are saved with each patch. This means that you can create the best D Beam settings for each patch.

For details on using the D Beam controller, refer to "**Applying an Effect by Passing Your Hand Over the D Beam (D Beam Controller)** "(p. 68).

Using Knobs to Modify the Sound in Realtime (Assignable Controller)

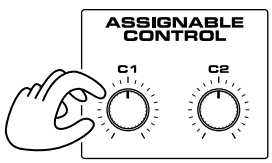
By turning the ASSIGNABLE CONTROL knobs while you play, you can control the various functions that've been assigned to them.

1 **Make sure the PATCH PLAY screen is displayed.**

If the PATCH PLAY screen is not displayed, press [EXIT] once or twice until the PATCH PLAY screen appears.

2 **While playing the keyboard to produce sound, turn the ASSIGNABLE CONTROL knobs ([C1], [C2]).**

The sound will change according to the function assigned to each knob.



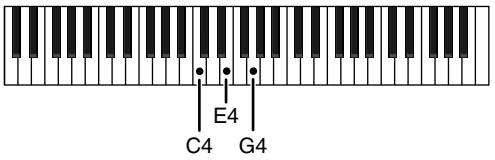
HINT
The assignable controller settings are saved with each patch. This means that you can create the best assignable controller settings for each patch.

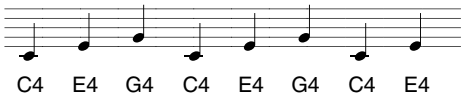
For details on using the assignable controllers, refer to "**Applying an Effect by Turning a Knob (Assignable Controller)** "(p. 69).

Playing Arpeggios (Arpeggiator)

The V-Synth provides an automatic arpeggio function (Arpeggiator). When you turn on the arpeggiator and play the keyboard, arpeggios are produced automatically.

For example, if you press the keys of a C major chord, the V-Synth arpeggiates the chord as C → E → G → C → E → G...



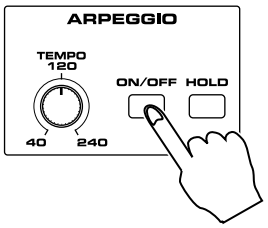


1 **Make sure the PATCH PLAY screen is displayed.**

If the PATCH PLAY screen is not displayed, press [EXIT] once or twice until the PATCH PLAY screen appears.

2 **Press ARPEGGIO [ON/OFF] to make the indicator light.**

The arpeggiator is turned on.

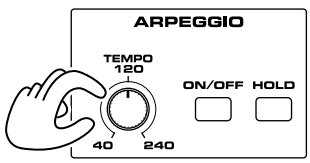


3 **Play the keyboard.**

The V-Synth arpeggiates what you've played.

4 **To change the playback tempo of the arpeggiator, turn ARPEGGIO [TEMPO].**

Turning the knob toward the right makes the tempo faster, and turning it toward the left makes the tempo slower.



5 **To finish listening to the arpeggio, press ARPEGGIO [ON/OFF] again so its indicator turns off.**

HINT

Arpeggiator settings can be saved with each patch. This means that you can create the best arpeggio settings for each patch.

For details on using the Arpeggiator, refer to "**Playing Arpeggios (Arpeggiator)** "(p. 62).

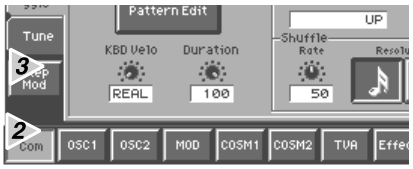
Using steps to vary the sound (Multi Step Modulator)

The Multi Step Modulator is a function that modulates the value of various parameters according to a sixteen-step sequence. On the V-Synth, the patterns of this sequence are managed as "tracks." You can simultaneously use up to four tracks, with each track containing a different sequence. You can use the panel knobs to freely modify the sequence pattern.

1 **Make sure the PATCH PLAY screen is displayed.**

If the PATCH PLAY screen is not displayed, press [EXIT] once or twice until the PATCH PLAY screen appears.

2 **At the bottom of the screen, touch < Com >.**



3 **At the left side of the screen, touch < Step Mod >.**

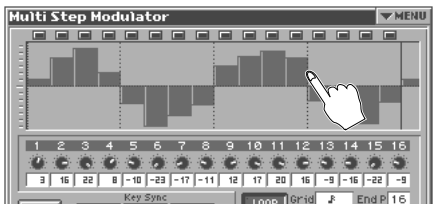
The Multi Step Modulator screen appears.

4 **At the top of the screen, turn < Step Switch > ON.**

The Multi Step Modulator will be applied to the currently selected patch.

5 **While you play the keyboard to hear the sound, input steps 1–16.**

If you touch <▼ MENU > and select Hand Draw, you'll be able to draw the graph directly with your finger.



6 **To exit the step sequencer, turn < Step Switch > OFF at the top of the screen.**

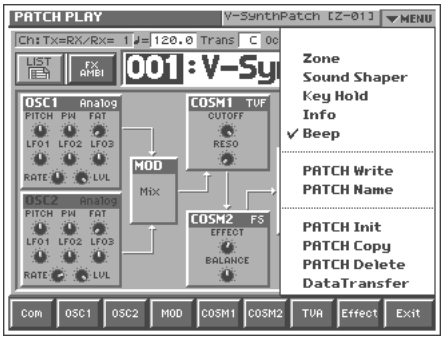
For details on using the Arpeggiator, refer to "**Using steps to vary the sound (Multi Step Modulator)** "(p. 66).

Holding the notes you play (Key Hold)

The Key Hold function changes the way in which the patch will play when you press a note on the keyboard. If Key Hold is on, the patch will start or stop sounding each time you press a note. In other words, the patch will begin sounding when the V-Synth receives a note-on, and will stop sounding when the next note-on is received.

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

A pulldown menu appears.



2 **In the pulldown menu, touch < Key Hold >.**

The Key Hold window will appear.

3 **Turn < Hold Switch> ON.**

4 **Play the keyboard.**

The patch will sound according to the key you pressed. When you press the same key once again, the patch will stop sounding.

* *If the Key Hold function is turned on, and you forget which key you pressed, the patch will simply continue sounding. In such cases, press the key that is assigned as the "Panic Key" in the Key Hold window. All notes that are being sounded by the Key Hold function will stop sounding.*

* *If you change the Panic Key assignment, you must save the system settings as described in "**Saving the System Settings (Write)**" (p. 121).*

MEMO

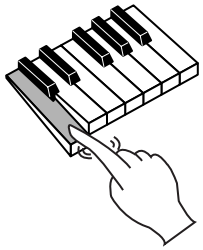
The Key Hold function is turned "off" when you power up the V-Synth.

Other Performance Features

Other performance functions include the following. Select various patches, and try out these functions.

Velocity/Aftertouch

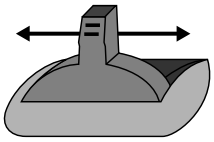
The force with which you play the keyboard, or the "velocity" with which you play, can affect the volume or timbre of a sound. Aftertouch—downward pressure you apply to a key after playing a note—can also affect the sound.



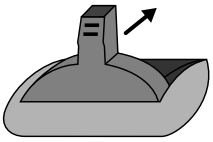
Pitch Bend/Modulation Lever

While playing the keyboard, move the lever to the left to lower the pitch of the currently selected patch, or to the right to raise its pitch. This is known as **pitch bend**. You can also apply vibrato and so on by gently pushing the lever away from you. This is known as **modulation**.

If you push the lever away from you and at the same time move it to the right or left, you can apply both effects at once.



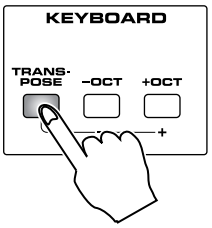
Pitch Bend



Modulation

Transpose

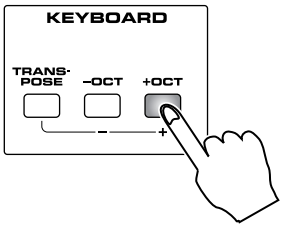
To modify the pitch range of the keyboard in semitone steps (G–F#: -5– +6 semitones), press [TRANSPOSE] so its indicator lights. Set the desired amount of transposition by holding down [TRANSPOSE] and pressing [+OCT] or [-OCT].



For details, refer to "**Transposing the Keyboard in Semitone Steps (Transpose)** "(p. 60).

Octave Shift

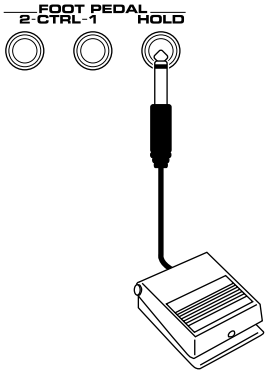
Pressing [+OCT] or [-OCT] transposes the pitch of the keyboard in 1 octave units (-3– +3 octaves).



For details, refer to "**Transposing the Keyboard in Octave Units (Octave Shift)** "(p. 61).

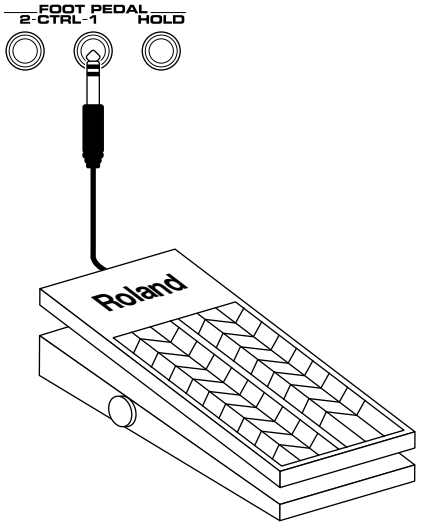
Hold Pedal

If an optional pedal switch (DP series) is connected to the rear panel HOLD PEDAL jack, you can press the pedal switch to cause notes to sustain or "hold" even after their keys have been released.



Control Pedal

If an optional expression pedal (EV-5, etc.) is connected to the rear panel CTRL 1 or the CTRL 2 PEDAL jack, you can use the pedal to control the volume or timbre of sounds you play.



NOTE
Use only the specified expression pedal (EV-5; sold separately). By connecting any other expression pedals, you risk causing malfunctions and/or damage to the unit.

You can set how the sound of each patch changes when you press an expression pedal. For details, refer to "**Pedal 1, 2 Assign** "(p. 127).

Creating a Patch

This section explains the procedure for creating a patch on the V-Synth. Broadly speaking, there are two ways to create a patch.

Using a template to create a patch intuitively (the Sound Shaper function)

You can easily create a patch just by choosing a group and template.

☞ Refer to "**Creating a patch intuitively (Sound Shaper)** "(p. 38).

Creating a patch from scratch

This section explains the basic procedure for creating a patch on the V-Synth.

☞ Refer to "**Initializing Patch Settings** "(p. 40).

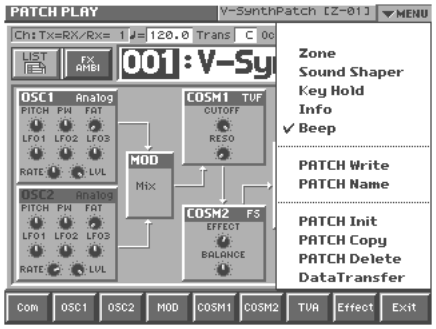
Creating a patch intuitively (Sound Shaper)

The "Sound Shaper" function lets you create a patch simply by choosing a group and template, and operating knobs and buttons to edit the relevant aspects of the sound, just like a professional sound designer.

1 **Make sure that the PATCH PLAY screen is displayed.**

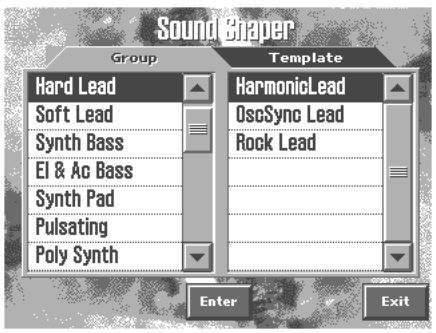
2 **At the upper right of the screen, touch <▼ MENU >.**

A pulldown menu will appear.



3 **In the pulldown menu, touch < Sound Shaper >.**

The following window will appear.

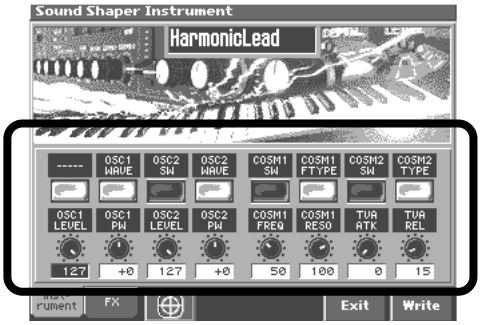


Choose the "Group" and "Template" that are closest to the sound you want to create. Use the list at the left to choose a group, and use the list at the right to choose a template. Then touch < Enter >.

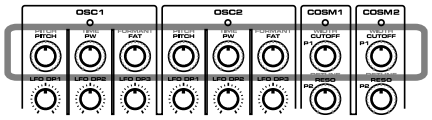
4

A window like the following will appear.

While playing the keyboard, use the eight switches and knobs to adjust the sound.



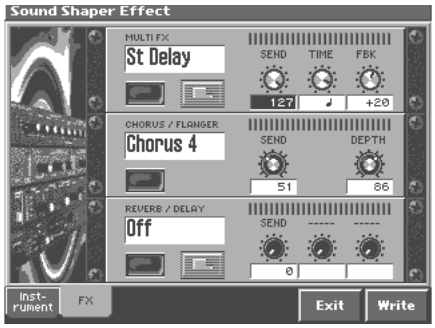
- The V-Synth's knobs shown in the diagram below correspond to the knobs in the screen.



- Some buttons have an on/off function, while others select choices from a list.

5

At the bottom of the screen, touch the < FX > tab to make effect settings.



From the top, the effects are MFX (multi-effect), chorus, and reverb.

- You can use the button for each effect to turn it on/off.
- If you want to switch the type of an effect, touch the effect name to highlight it, and then turn the VALUE dial or use [INC/+][DEC/-].
- In the Sound Shaper you can edit only the main parameters of each effect, using the on-screen knobs.

6

In the lower right of the screen, touch < Write > to open the "Patch Write" screen, where you can save the patch you created.

☞ To save your patch, use the procedure described in "**Saving Patches (PATCH Write)** "(p. 51) and "**Saving Project on Disk (Save Project)** "(p. 132).

*** If you want to save a patch you created in the Sound Shaper, you must also execute "Save Project" (p. 132) in addition to "PATCH Write" (p. 51). If you don't execute "Save Project," the PCM oscillator of the patch you created in Sound Shaper will no longer sound the next time you turn on the power.**

MEMO

For each template, the most suitable parameters have been automatically selected for each of the eight switches and knobs.

☞ For details on each effect, refer to "**Effects List** "(p. 166).

☞ For more about the Sound Shaper function, refer to "**Creating a patch intuitively (Sound Shaper)** "(p. 76).

Initializing Patch Settings

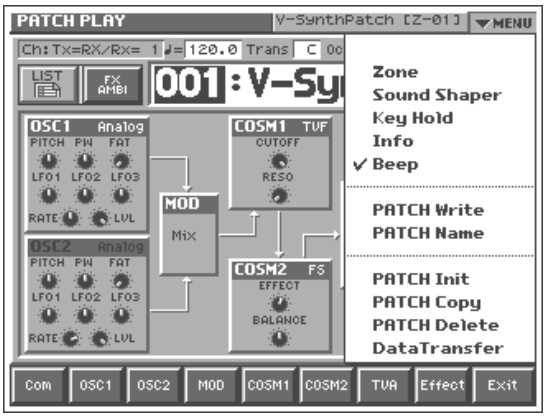
This section explains the basic procedure for creating a patch on the V-Synth from scratch.

First we will return the settings of the currently selected patch to a standard set of values.

1 **Make sure that the PATCH PLAY screen is displayed.**

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

A pulldown menu appears.



3 **Touch <PATCH Init> in the pulldown menu.**

A window like the following appears.

4 **Touch <EXECUTE>.**

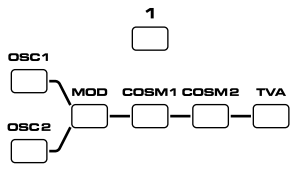
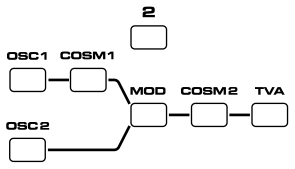
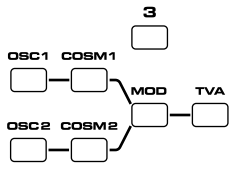
The initialization will be carried out, and you'll be returned to the PATCH PLAY screen.

Selecting a Structure Type

The sounds of the V-Synth are produced by six elements (sections). Here's how to select the Structure Type, which determines how these elements are combined.

Section name	Function
OSC1, OSC2	This section generates the sound on which a patch is based. The sound is produced either by built-in preset waves or sampled waves, or by calculating an analog modeling waveform. An external audio input source can also be used.
MOD	This section mixes and modulates the two audio signals.
COSM1, COSM2	This section applies a wide variety of processing including filtering. This differs from the effects in that effects are applied to the final mix of the sound, COSM is applied to each individual note.
TVA	This section creates time-variant changes in volume, and sets the pan position.

1 **Press STRUCTURE [1]–[3] to select a structure type.**

Structure Type	Description
	This is the most conventional structure on the V-Synth. The sounds from OSC1 and OSC2 are mixed by MOD, processed by COSM1 to shape their tonal character (e.g., using SBF), and then sent through COSM2 for additional tonal refinement (e.g., using TVF).
	This structure connects OSC1 and OSC2 asymmetrically. This is effective when using a modulation that has the modulator set to anything other than "MIX." Typically, you will use OSC1 and COSM1 to create the basic sound, then select the OSC2 sound and MOD settings to add variation, and finally select TVF in COSM2 to adjust the tone.
	In this structure, OSC1 is paired with COSM1, and OSC2 is paired with COSM2. You can use a controller such as the Time Trip Pad to morph between the sound created by OSC1 and COSM1 and the sound created by OSC2 and COSM2.

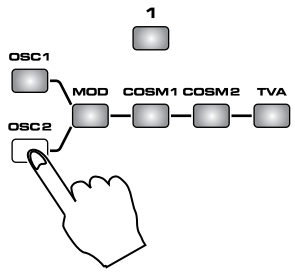
HINT

When you select a structure type, its buttons light on the V-Synth's front panel.

Switching Each Section On/Off

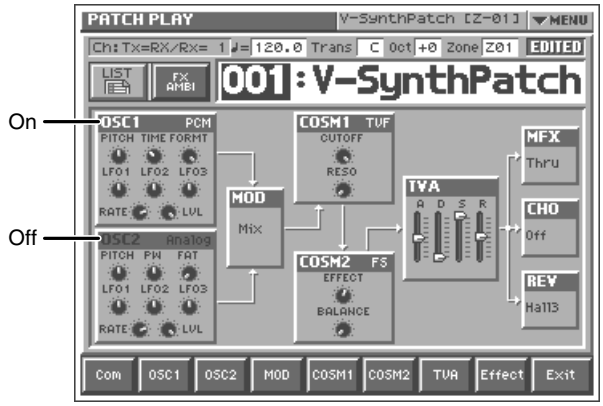
After deciding on the structure type to use, you can switch each section within that structure on or off as desired.

1 **Within the currently selected structure, turn the buttons of each section on (indicator lit) or off (indicator not lit), depending on whether or not you want to use that section.**



For example if "OSC1" and "OSC2" are both off, there will be no sound-producing section, and no sound will be output.

The on/off setting of each section is also shown in the PATCH PLAY screen. Section names shown in white characters are on, and those displayed in black characters are off.



Setting Up the Oscillators (OSC1/2)

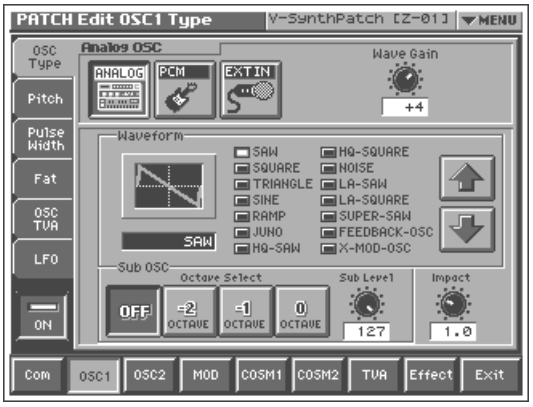
The oscillator sections produce the original sound, either by playing back an internal PCM wave or a sampled wave, or by generating an analog modeling wave.

Selecting a Wave

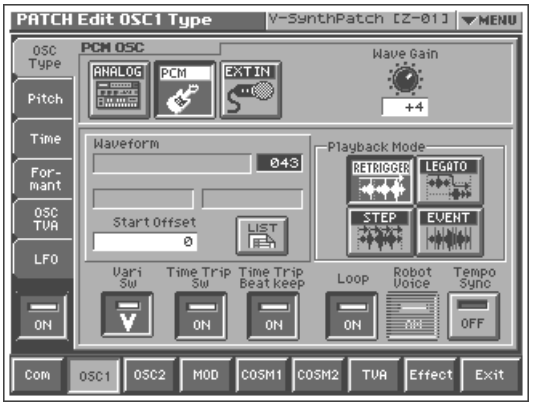
1 In the lower part of the screen, touch <OSC1> (or <OSC2>).

A screen like the following appears. If a different screen appears, touch the <OSC Type> tab at the left side of the screen.

Analog oscillator



PCM oscillator



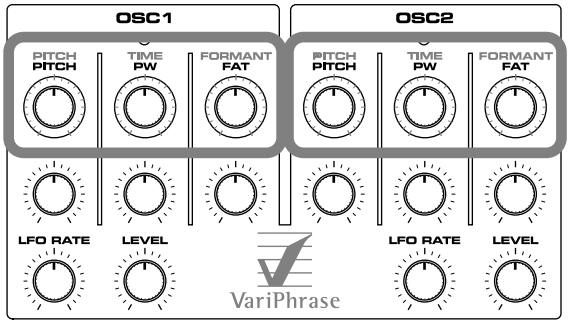
2 Touch either <ANALOG> or <PCM> to select the type of oscillator.

3 In the Waveform area, select the wave you wish to use.

Make your selection while playing the keyboard to hear the sounds.

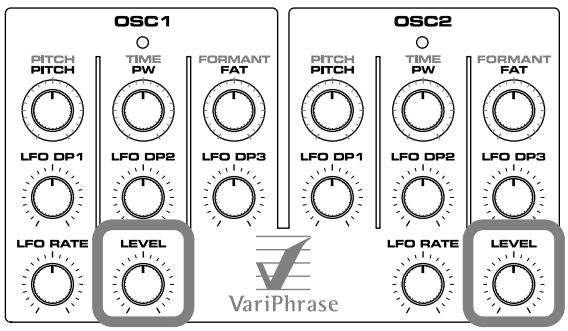
Modifying the Volume and Sound

1 **While playing the keyboard, turn the following knobs to adjust the character of the sound.**



Knob	PITCH PITCH	TIME PW	FORMANT FAT
Functions when using the PCM oscillator	Modifies the pitch.	**TIME:** Modifies the playback speed.	**FORMANT:** Modifies the formant (vocal character).
Functions when using the analog oscillator		**PW:** Modifies the pulse width.	**FAT:** Modifies the richness of the sound.

2 **Turn [LEVEL] to adjust the volume.**



NOTE
Depending on the encoding type of the PCM wave, Formant may have no effect. For details, refer to "**Selecting the Encoding Type** "(p. 118).

NOTE
Depending on the type of the analog wave, PW or FAT may have no effect. For details, refer to "**Waveform (Analog Oscillator Waveform)** "(p. 85).

For more about the oscillator settings, refer to "**Modifying Waveforms (OSC1/OSC2)** "(p. 85).

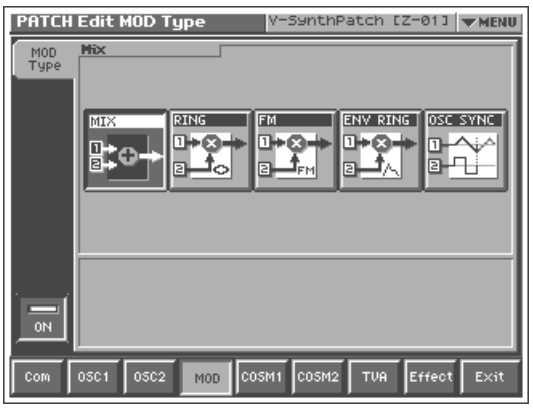
Mixing/Modulating Two Sounds (Mod)

The Modulator mixes and modulates the two audio signals.

Selecting a Modulator Type

1 **In the lower part of the screen, touch <Mod>.**

A screen like the following appears.



2 **In the Modulator Type area, select the modulator type you wish to use.**

Modulator Type	Description
MIX	Add OSC1 and OSC2.
RING	Use OSC2 to apply ring modulation to OSC1.
FM	Use OSC2 to apply FM (frequency modulation) to OSC1.
ENV RING	Use the envelope of OSC2 to control the volume of OSC1.
OSC SYNC	Synchronize the output waveform of OSC1 to the output waveform of OSC2.

NOTE
OSC SYNC is valid only when OSC2 is an analog oscillator.

For more about the modulator settings, refer to "**Mixing/ Modulating Two Sounds (MOD)** "(p. 92).

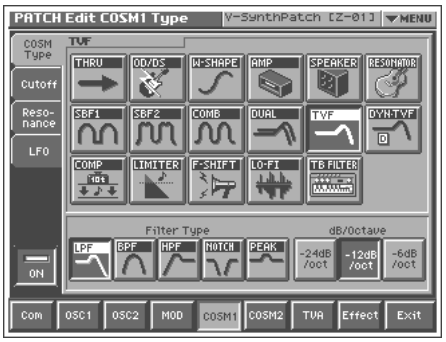
Applying COSM Modeling to Oscillators (COSM1/2)

The COSM sections modify the sound in various ways, including filtering the sound. COSM differs from the Effects section in that while Effects are applied to the final mix of the sound, COSM is applied individually to each note.

Selecting a COSM Type

1 **In the lower part of the screen, touch <COSM1> (or <COSM2>).**

A screen like the following appears.

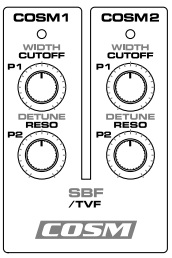


2 **Press the desired COSM type button to select the form of COSM.**

Make your selection while playing the keyboard to hear the sounds.

Modifying the Sound

1 **While playing the keyboard, turn the following knobs to modify the sound.**



Knob	SBF	TVF	others
WIDTH CUTOFF P1	**WIDTH:** If the SBF (Side Band Filter) is selected, this knob adjusts the width of the filter.	**CUTOFF:** If TVF is selected, this knob adjusts the cutoff frequency.	**P1:** This knob offers real-time control of selected parameters in other COSM types.
DETUNE RESO P2	**DETUNE:** If the SBF (Side Band Filter) is selected, this knob adjusts the detuning.	**RESO:** If TVF is selected, this knob adjusts the resonance.	**P2:** This knob offers real-time control of selected parameters in other COSM types.

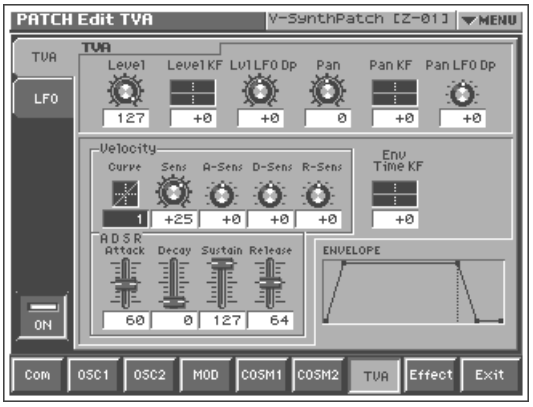
☞ For more about COSM settings, refer to "**Applying Various Effects to Each Note You Play (COSM1/COSM2)**"(p. 92).

Shaping a Sound's Volume Over Time (TVA)

You can adjust the way in which the patch's volume changes over time, or modify the attack or decay of the sound.

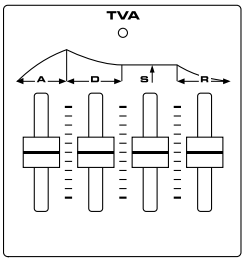
1 **In the lower part of the screen, touch <TVA>.**

A screen like the following appears.



2 **Use the TVA sliders located in the lower right of the panel to adjust the shape of each note's volume.**

"ENVELOPE" in the lower right of the screen shows a graphical representation of the envelope produced by the current settings.



Slider	Function
[A]	**Attack Time** Sets the time required for the volume of each note to reach its peak. This time increases as you raise the slider.
[D]	**Decay Time** Determines the time it takes for the note's volume to drop from its peak to its sustain level. If the sustain level is at its maximum, this has no effect.
[S]	**Sustain Level** Determines the level at which the volume is maintained after the peak has been reached. As long as you continue to press a key on the keyboard, its note keeps sounding at this level.
[R]	**Release Time** Sets the time it takes for a note's volume to reach zero after you release your finger from a key on a keyboard.

For example, if you shorten a note's attack time and lengthen its release time, the note's volume may be shaped like a note on a piano. If the sustain level is at maximum, it may sound like an organ, and if the attack time is long, it may sound like a string section.

☞ For details about volume settings, refer to "**Adjusting the Volume and Pan (TVA)** "(p. 93).

Adding the V-Synth Effects

Since the V-Synth effects have such a profound impact on its sounds, turn them on to listen to the sound itself so you can better evaluate the changes you're making. Actually, sometimes just changing effects settings can give you the sound you want.

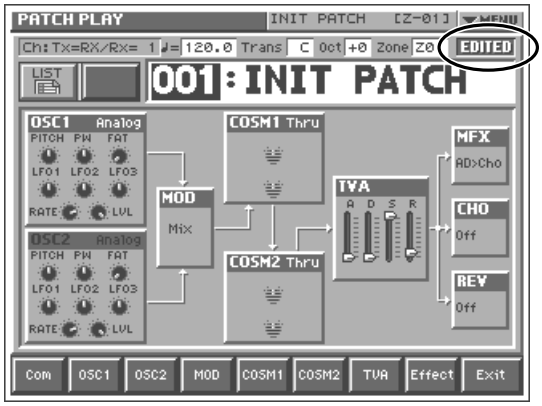
Three separate effects are always available in the V-Synth. You can independently edit each effect's settings.

MFX (Multi-Effects)	The V-Synth contains 41 different multi-effects, including distortion and a rotary-speaker simulation.
Chorus	Chorus adds a sense of depth and spaciousness to patches.
Reverb	Reverb adds ambience that emulates the sound of various physical spaces, such as concert halls or auditoriums.

☞ For details about effect settings, refer to "**Setting Effects for a Patch (Effect)**"(p. 96).

Saving Patches You've Created

When you edit the settings of a patch, the PATCH PLAY screen displays <EDITED> to remind you that the patch's settings have been modified. If <EDITED> is displayed, you will lose your edited patch settings if you switch to another patch or turn off the power. If you want to keep a patch whose settings you have edited, assign a name to the patch and then perform the **Save** operation.



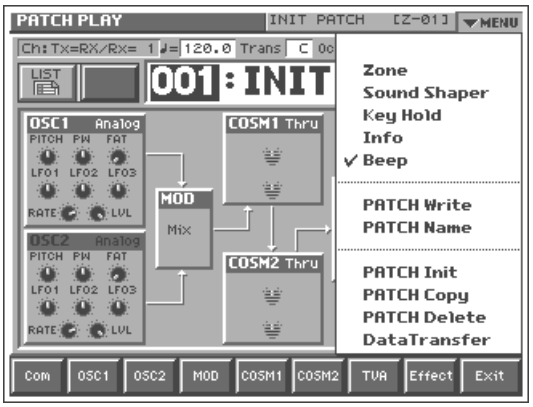
Naming Patches (PATCH Name)

Before you save your patch, give it a new name as follows.

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

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

A pulldown menu appears.



3 Touch <PATCH Name> in the pulldown menu.

The PATCH Name window appears.

4 Enter a name into the text box by touching the desired characters. For this example, let's enter "My Patch1" as the currently selected patch's name.

4-1. Touch <Clear> to erase all characters from the text box.

4-2. Touch <Shift> to turn it on, and then touch <M> to enter a capital "M."

4-3. Touch <Shift> to turn it off, and then touch <y> to enter a lower-case "y."

4-4. Touch <→> to move the cursor one character to the right.

4-5. Touch <Shift> to turn it on, and then touch <P> to enter "P."

4-6. Touch <Shift> to turn it off, and then successively touch <a><t><c><h><1>.

5 When you've finished entering the name, touch <OK> to close the PATCH Name window.

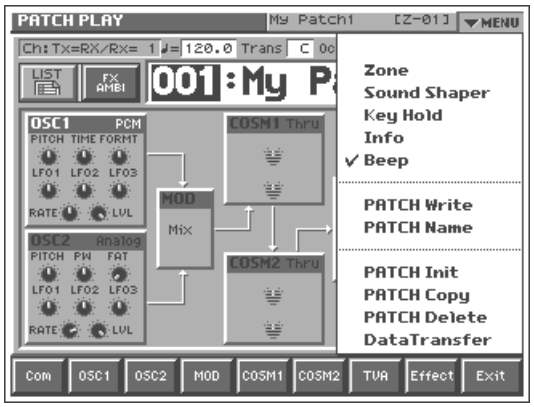
Saving Patches (PATCH Write)

After you've named your patch, save it as follows.

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

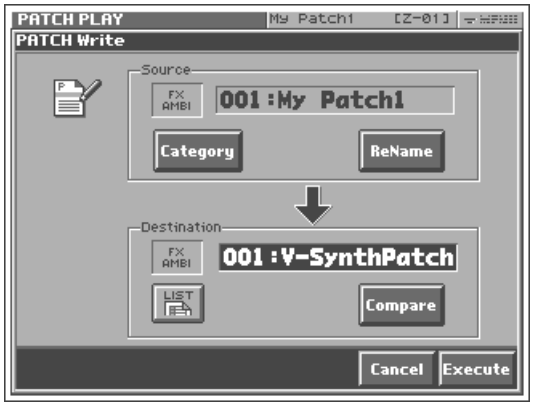
2 **Touch <▼ MENU> in the upper left area of the display.**

A pulldown menu appears.



3 **Touch <PATCH Write> in the pulldown menu.**

The PATCH Write window appears.



4 **Choose the save destination (Destination). Turn the VALUE dial to select an unused patch number.**

* *The patch you select (as the save destination) will be erased when it is overwritten by the newly saved patch.*

- To move through the patches more quickly, you can hold down [SHIFT] and turn the VALUE dial.
- If you touch < Compare > you'll be able to play the keyboard to audition the patch that is at the save destination you choose (the Compare function).
- If you touch < List >, the PATCH List window will open, allowing you to choose a save-destination patch from a list.

5 **Touch <Execute>.**

NOTE

When shipped from the factory, the V-Synth already contains a collection of patches. When you save your own patches, you replace the factory patches. If you wish to restore the original patches, use the Factory Reset operation (p. 147).

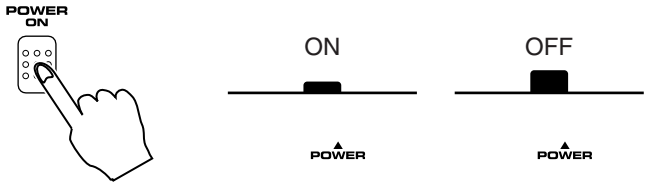
Turning Off the Power

1 **Before you turn off the power, consider these two questions:**

- Have the volume controls for the V-Synth and all connected audio devices been turned to their lowest settings?
- Have you saved your V-Synth sounds or other data you've created? (p. 51)

2 **Turn off the power for all connected audio devices.**

3 **Turn off the POWER switch located on the rear panel of the V-Synth.**



* *If you need to turn off the power completely, first turn off the POWER switch, then unplug the power cord from the power outlet. Refer to* ***Power Supply*** *(p. 4).*

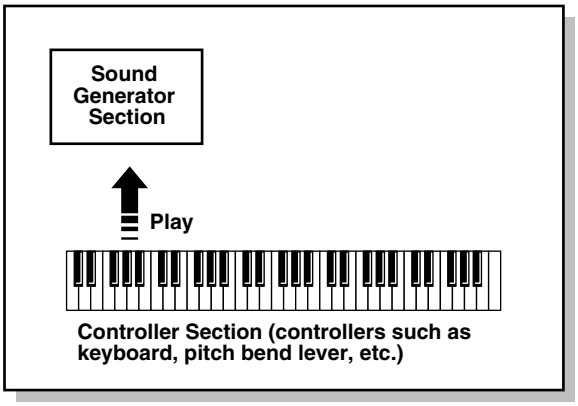
Reference

Overview of the V-Synth

How the V-Synth Is Organized

Basic Structure

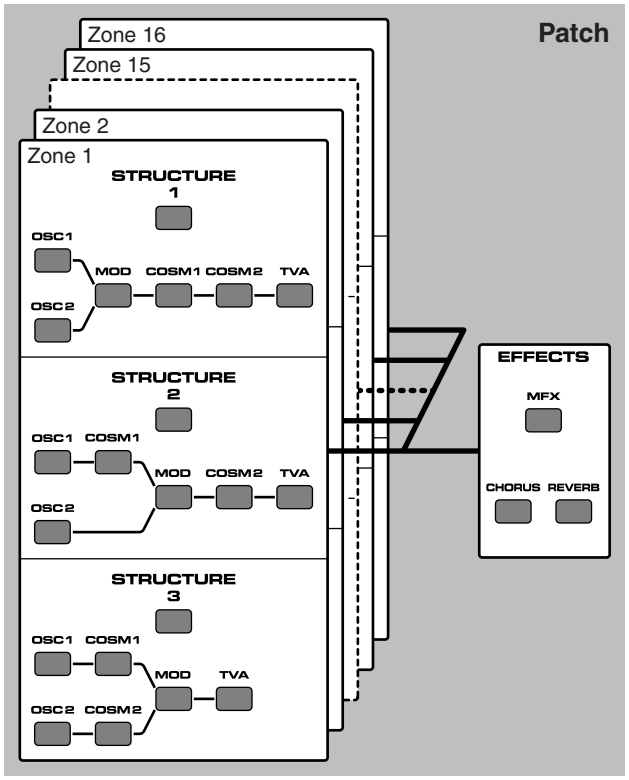
Broadly speaking, the V-Synth consists of a **controller section** and a **sound generator section**.



The right side of the V-Synth's front panel is where the controls for the Sound Generator section are located. The controls on the left side are mainly those of the Controller section.

Sound Generator Section

The sounds you play on the V-Synth are called **patches**. Each patch consists of a **structure** (an arrangement of its six sections), **zones** (which allow for sixteen individual setups for sixteen key ranges), and three **effects**.



Section name	Function
OSC1, OSC2	This section generates the sound on which a patch is based. The sound is produced either by built-in preset waves or sampled waves, or by calculating an analog modeling waveform. An external audio input source can also be used.
MOD	This section mixes and modulates the two audio signals.
COSM1, COSM2	This section applies a wide variety of processing including filtering. This differs from the effects in that effects are applied to the final mix of the sound, COSM is applied to each individual note.
TVA	This section creates time-variant changes in volume, and sets the pan position.

Effects	function
MFX	The multi-effects are multi-purpose effects that can completely change the nature of the patch's sound. There are 41 different effects types; select and use the type that suits your aims.
CHORUS	Applies a chorus effect to give the sound depth and spaciousness.
REVERB	Applies a reverb effect to add ambience to the sound.

Controller Section

The controller section consists of the keyboard, pitch bend/modulation lever, time trip pad, D Beam controller, C1/C2 knobs, arpeggiator, and pedals connected to the rear panel. When you manipulate these controllers, they send performance data to the sound generator section, causing the V-Synth to create sound.

Polyphony

The maximum polyphony of the V-Synth depends on the OSC and COSM types used by the patch.

MEMO

Changing the effect type or switching effects on/off does not affect the available polyphony.

About Multitimbral Performance

The V-Synth allows up to 16-part multitimbral operation, and can be played multitimbrally by performance data sent from an external device. You can use the V-Synth to play the sounds of a song you created on your sequencer, or as part of an ensemble. From the keyboard you can play only the patch that is assigned to part 1. The PATCH Information window shows you the patch that is assigned to each part (p. 147).

A sound module that allows you to control multiple sounds independently in this way is called a **multitimbral sound module**.

NOTE

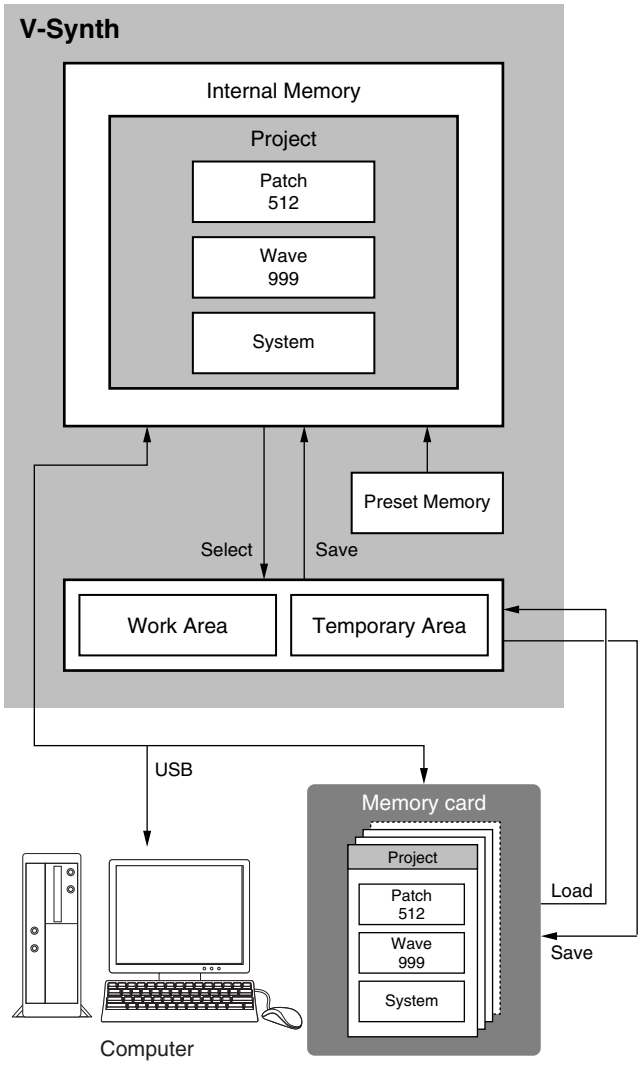
The effect settings of Part 1 are used by all parts.

NOTE

The arpeggiator works only on Part 1.

Memory

Memory Structure



Project

The largest unit of memory used by the V-Synth is the **project**. A project contains up to 512 patches, up to 999 waves, and various system settings.

The V-Synth uses one project at a time.

Internal Memory

The V-Synth has **internal memory** that stores a project. When the V-Synth is shipped from the factory, this memory already contains patch and wave data, but you are free to overwrite any of this. You can always restore the memory to the factory-set contents (Factory Reset).

Work Area/Temporary Area

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

Sampling and sample editing operations modify the data that is in 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 sample data and patch data that you edit will disappear if you simply turn off the power, you must **save** (SAVE/WRITE) it if you want to keep your changes.

Memory cards

Internal memory can hold only one project, but you can use commercially available memory cards to store additional projects.

Sampling Memory

The amount of memory you can use for sampling will depend on the state of the project that is currently loaded into the work area. With the factory-set project, there is approximately 115 seconds (stereo) / 230 seconds (monaural) of sampling memory. If you delete the factory-set waves, you will be able to use a maximum of approximately 280 seconds (stereo) / 560 seconds (monaural) of sampling memory. However since a maximum of approximately 56 seconds (stereo) / 113 seconds (monaural) can be saved in internal memory, you will need to use a commercially available memory card if you want to store more samples than this.

* *The above values are for when the sample is encoded using the "LITE" type (p. 118).*

MEMO

The factory-set waves can be restored using the Factory Reset operation (p. 147) even if they have been erased.

Preset Memory

Preset memory contains the state of the internal memory when the unit is shipped from the factory. If, after erasing the internal memory, you once again want to use the factory-set patches or waves, you can either perform the Factory Reset operation or use Disk mode to import the factory data from preset memory.

USB

If you connect the V-Synth to your computer via a USB cable, projects, patches, and wave data in the V-Synth's internal memory or on a memory card can be saved (backed up) to the hard disk or other media on your computer.

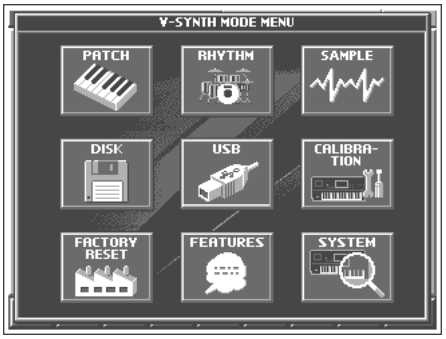
In addition, wave data created on the V-Synth can also be used by software running on your computer, or wave data created by your computer software can be used on the V-Synth.

Basic Operation of the V-Synth

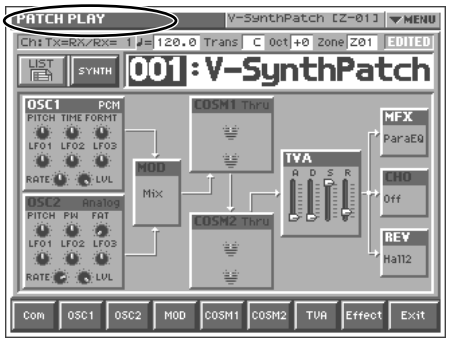
Changing Operating Modes ([MODE])

The V-Synth has nine operating modes: Patch mode, Rhythm mode, Sample mode, System mode, Disk mode, USB mode, Calibration mode, Factory reset mode and Demo mode. To access the desired V-Synth feature, you must select the appropriate mode.
Here's how to change modes.

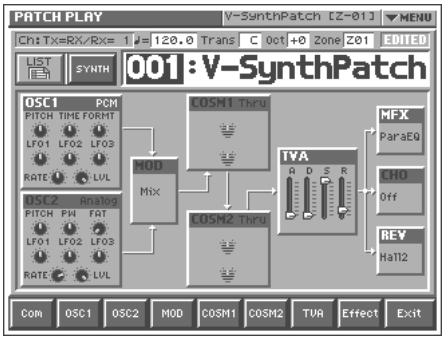
1. **Press [MODE].**
   The V-SYNTH MODE MENU window appears.



2. **Touch the touch screen to select the desired mode.**
   When you select a mode, the screen for that mode appears. The currently selected mode is shown in the upper left of each screen.

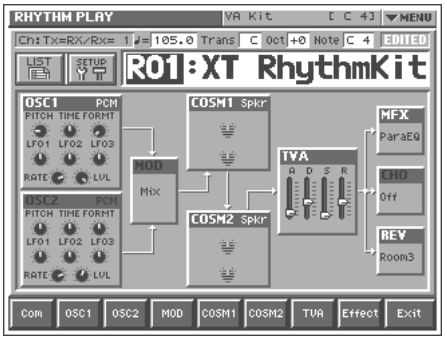


Patch Mode (p. 58, p. 71)



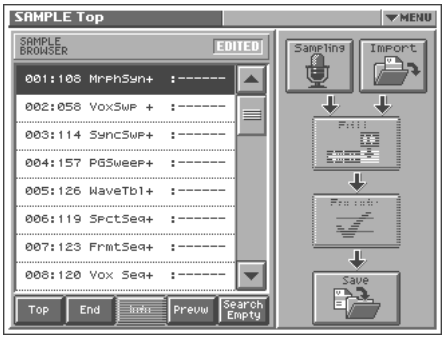
In this mode you can play a single patch from the keyboard, and edit patch settings.

Rhythm Mode (p. 101)



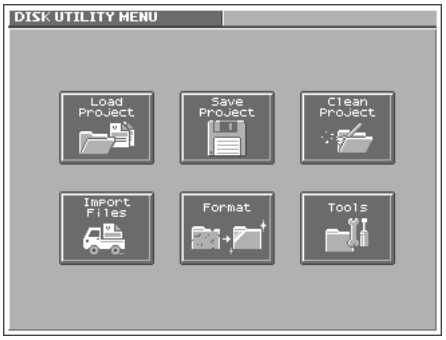
In this mode you can play a rhythm kit from the keyboard, and edit rhythm kit settings.

Sample Mode (p. 103)



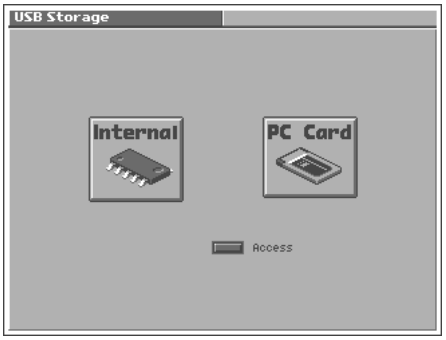
In this mode, you can sample the waves that form the basis of the sounds you create, and edit the sampled waves.

Disk Mode (p. 131)



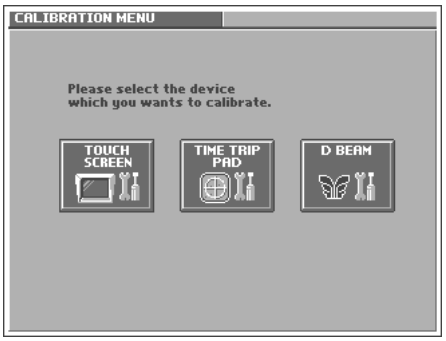
In this mode, you can perform operations related to disks, such as saving data on a disk or loading data from a disk.

USB Mode (p. 138)



In this mode, you can connect the V-Synth to your computer and exchange patch or wave data.

Calibration Mode (p. 148)



In this mode you can adjust the response of the touch screen and D Beam controller.

Factory Reset Mode (p. 147)

In this mode, you can reset to default factory settings.

Features Mode

This is a demo screen mode that introduces you to the V-Synth's functionality.

System Mode (p. 121)

In this mode, you can set the overall behavior of the V-Synth, such as its tuning and how it handles received MIDI messages.

Playing in Patch Mode

Patch mode is the mode in which you can play the keyboard using a single sound (patch or rhythm set).

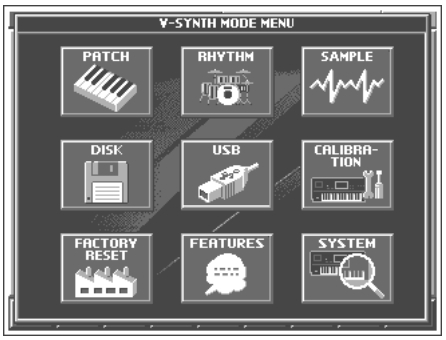
About the PATCH PLAY Screen

Displaying PATCH PLAY Screen

To access the PATCH PLAY screen, use the following procedure.

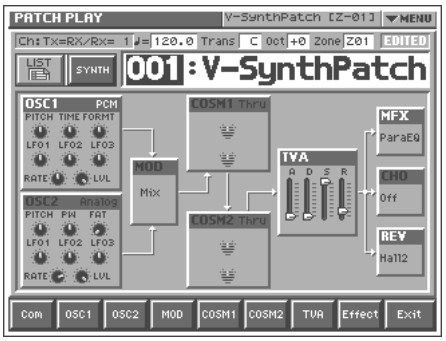
1. Press [MODE].

The V-SYNTH Mode MENU window appears.

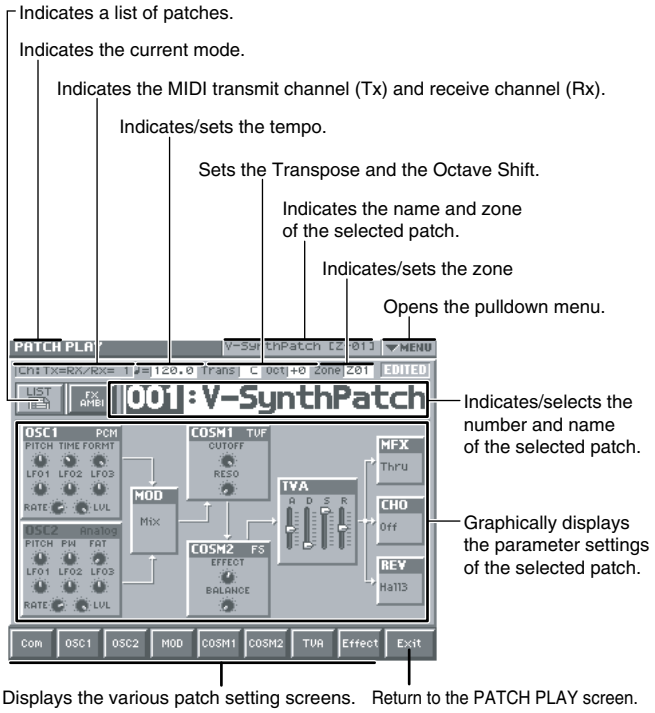


2. Touch <PATCH>.

You will enter Patch mode, and the PATCH PLAY screen appears.



Functions in the PATCH PLAY Screen

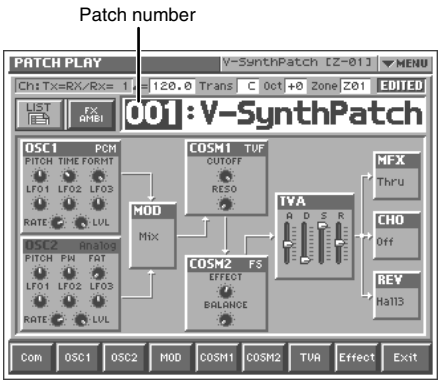


Selecting a Patch

V-Synth contains 512 patches for you to select and use.

All of these patches can be overwritten.

1. Access the PATCH PLAY screen (p. 58).



2. Move the cursor to the patch number, either by using the cursor buttons or by touching the patch number display.

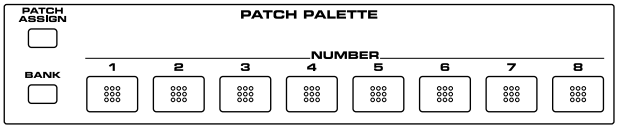
3. Turn the VALUE dial, or press [INC/+][DEC/-] to select a patch number. You can also do this by dragging on the touch screen.

Selecting Favorite Patches (Patch Palette)

You can bring together your favorite and most frequently used patches in one place by registering them into the patch palette. By using this function, you can rapidly select favorite patches from internal memory.

For details on how to register a patch in the patch palette, refer to **"Registering a Favorite Patch (Patch Palette)"** (p. 75).

1. **Access the PATCH PLAY screen (p. 58).**
2. **Press NUMBER [1]–[8] to select a patch.**



3. **To switch the patch palette bank, hold down [BANK] and press NUMBER [1]–[8].**

   When you press [BANK], the indicator of the currently selected bank button (NUMBER [1]–[8]) will blink.

HINT

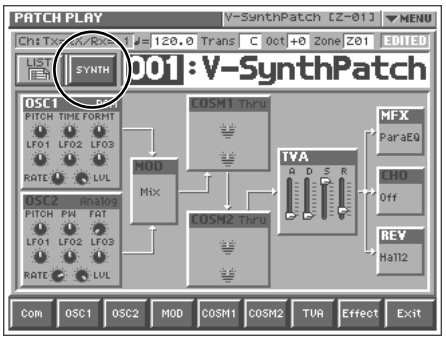
If you continue pressing [PATCH ASSIGN] or [BANK], the PATCH PALETTE window will appear. In this window you can view the patches that are registered in the currently selected bank.

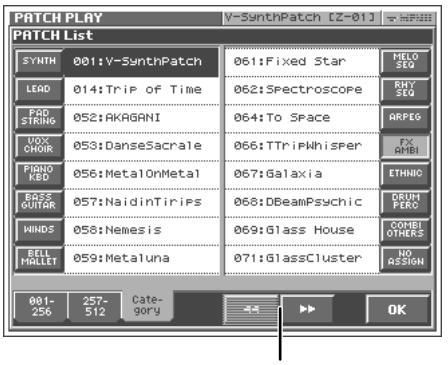
Selecting Patches by Category

The V-Synth provides a Patch Search function which allows you to specify a type (category) of patch so that you can quickly find the desired patch. There are a total of 16 categories.

1. **Access the PATCH PLAY screen.**
2. **Touch the category button in the upper left area of the display.**

   The PATCH List window appears, and the categories will be displayed at both sides of the screen.





Page navigation button

3. **Touch the desired category, and select a patch from the list.**

   You can move to a different page within the same category by touching a page navigation button in the bottom of the screen.

Category		Contents
SYNTH	Synth	Synth
LEAD	Lead	Lead
PAD/STRING	Pad/Strings	Pad/Strings
VOX/CHOIR	Vox/Choir	Voice/Choir
PIANO/KBD	Piano/Keyboards	Piano/Keyboards
BASS/GUITAR	Bass/Guitar	Bass/Guitar
WINDS	Winds	Winds
BELL/ MALLET	Bell/Mallet/Hit	Bell/Mallet/Hit
MELO SEQ	Melodic Sequence	Melodic (i.e., pitched) sequences
RHY SEQ	Rhythmic Sequence	Rhythmic (i.e., non-pitched) sequences
ARPEG	Arpeggio	Arpeggio
FX/AMBI	FX/Noise/ Ambient	Effect/Noise/ Ambient
ETHNIC	Ethnic	Ethnic
DRUM/PERC	Drum/Percussion	Drum/Percussion
COMBI/ OTHERS	Combination/ Others	Combinations using zones/other
NO ASSIGN	No Assign	No Assign

"Assigning the Category of a Patch" (p. 73)

Selecting Patches from the List

You can display a list of patches and select a patch from that list.

1. **Access the PATCH PLAY screen (p. 58).**
2. **Touch <List> in the upper left area of the display.**
   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.

HINT

If you select a patch in the list and play the keyboard, the selected patch will sound. This is a useful way to audition the sound of a patch.

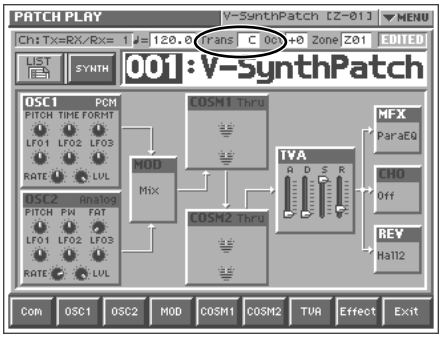
4. **To view other patches, touch <017-032>–<241-256>, located at either side of the screen. To view higher-numbered patches, touch <257-512>, located at the bottom of the screen.**
5. **Touch <OK>.**
   The patch is selected and the PATCH List window closes.

Transposing the Keyboard in Semitone Steps (Transpose)

Transpose changes keyboard pitch in units of semitones.

This function is useful when you play transposed instruments such as trumpet or clarinet following a printed score.

1. **Press [TRANSPOSE] to light indicator.**
   This turns Transpose on.
2. **While holding down [TRANSPOSE], press [+OCT] or [-OCT] to transpose the keyboard.**
   Pressing [+OCT] once while holding down [TRANSPOSE] will raise the keyboard one semitone.
   Pressing [-OCT] once while holding down [TRANSPOSE] will lower the keyboard one semitone.
   The specified Transpose setting will be shown in the "Trans" indication of PATCH PLAY screen.



HINT

Alternatively, you can move the cursor to "Trans" in the PATCH PLAY screen and turn the VALUE dial or use [INC/+] [DEC/-] to make the setting. You can also do this by dragging on the touch screen.

3. **To turn off Transpose, press [TRANSPOSE] once again so that its indicator goes off.**
   The Transpose setting you make will be maintained.

NOTE

There is a single Transpose setting (Setup parameter) for the entire V-Synth. The changed setting will be remembered even if you switch patches.

Transposing the Keyboard in Octave Units (Octave Shift)

The **Octave Shift** function transposes the pitch of the keyboard in 1 octave units (-3– +3 octaves).

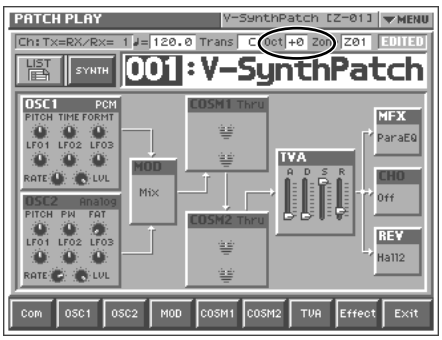
For playing a bass part more easily using your right hand, transpose the keyboard down by 1 or 2 octaves.

1. **Press [+OCT] or [-OCT] and its indicator will light.**

   Pressing [+OCT] once will raise the keyboard 1 octave.

   Pressing [-OCT] once will lower the keyboard 1 octave.

   The specified Octave Shift setting will be shown in the "Oct" indication of PATCH PLAY screen.



HINT

Alternatively, you can move the cursor to "Oct" in the PATCH PLAY screen and turn the VALUE dial or use [INC/+] [DEC/-] to make the setting. You can also do this by dragging on the touch screen.

NOTE

There is a single Octave Shift setting (Setup parameter) for the entire V-Synth. The changed setting will be remembered even if you switch patches.

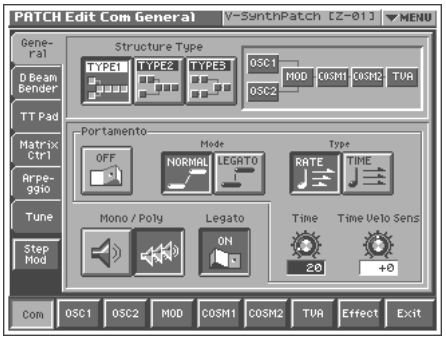
2. **To turn off the Octave Shift function, press the other button [+OCT] or [-OCT] of that pressed in step 1. The indicator will go off.**

Playing Single Notes (Mono)

When using a patch for a naturally monophonic instrument such as sax or flute, it is effective to play in mono.

1. **Access the PATCH PLAY screen (p. 58).**
2. **At the bottom of the screen, touch <Com>.**
3. **In the left side of the screen, touch the <General> tab.**

   The Patch Edit Com General screen appears.



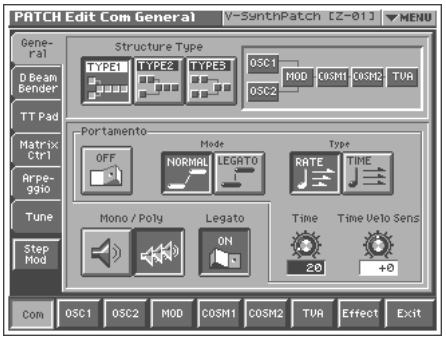
4. **In the "Mono/Poly" field, touch < >.**

   Now you can play in mono mode.

Creating Smooth Pitch Changes (Portamento)

Portamento is an effect which smoothly changes the pitch from the first-played key to the next-played key. By applying portamento when Mono mode is selected (see the preceding item), you can simulate performance effects such as slurring on a violin.

1. **Access the PATCH Edit Com General screen (p. 61).**



2. **In the "Portamento" field, touch the on/off switch to turn it "ON."**

   You're ready to play portamento.

HINT

When you want to change the portamento setting, edit the following parameters in the screen of step 2.

Mode (Portamento Mode), **Type** (Portamento Type), **Time** (Portamento Time), **Time Velo Sens** (Portamento Time Velocity Sens)

See p. 78 for each parameter's functions.

Playing Arpeggios (Arpeggiator)

The V-Synth comes with an **arpeggiator** that can play arpeggios automatically. Once you turn on the arpeggiator, the keys you press will automatically be played as an arpeggio.

1. **Access the PATCH PLAY screen (p. 58).**
2. **Press ARPEGGIO [ON/OFF] to make the indicator light.**
   The arpeggiator is turned on.
3. **Play the keyboard.**
   The V-Synth arpeggiates what you've played.
4. **To adjust the tempo of the arpeggio, turn ARPEGGIO [TEMPO].**
   Turning the knob toward the right will speed up the tempo, and turning it toward the left will slow down the tempo.
5. **To finish playing arpeggios, press ARPEGGIO [ON/OFF] again so the indicator turns off.**

Holding an Arpeggio

By using the following procedure, you can produce arpeggios even without continuing to press the keyboard.

1. **Press ARPEGGIO [ON/OFF] to turn the Arpeggiator on.**
2. **Press ARPEGGIO [HOLD] to make the indicator light.**
3. **Play the keyboard.**
4. **If you play a different chord or notes while the arpeggio is being held, the arpeggio will change accordingly.**
5. **To cancel Arpeggio Hold, press ARPEGGIO [HOLD] again.**

When Using a Hold Pedal

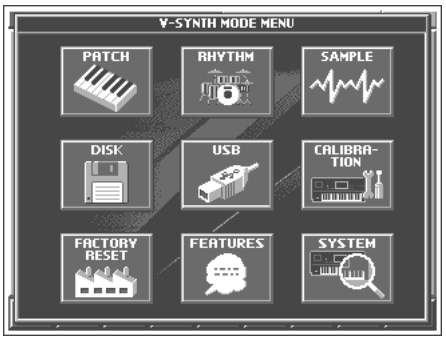
If you play an arpeggio while pressing the hold pedal, the arpeggio will continue to be played even if you release the keyboard.

1. **Connect an optional pedal switch (DP series) to the HOLD PEDAL jack.**
2. **Press ARPEGGIO [ON/OFF] to turn the Arpeggiator on.**
3. **Play the keyboard while pressing the hold pedal.**
4. **To play another chord, release the pedal, press it again as you play the next chord.**

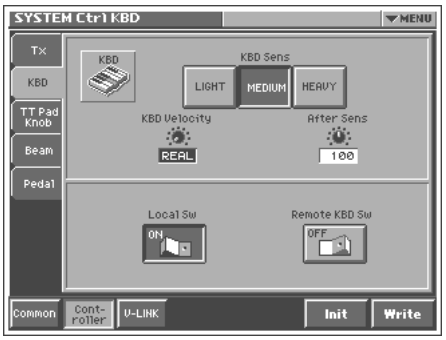
Using an External MIDI Keyboard to Play Arpeggios

You can also use the keyboard of an external MIDI instrument to play arpeggios.

1. **Use a MIDI cable to connect the V-Synth's MIDI IN connector to your external MIDI keyboard's MIDI OUT connector.**
2. **Press [MODE].**
   The V-SYNTH MODE MENU window will appear.



3. **Touch <System>.**
4. **At the bottom of the screen, touch <Controller>.**
5. **In the left side of the screen, touch the <KBD> tab.**
   The SYSTEM Ctrl KBD screen appears.



6. **In the "Remote KBD Sw" field, touch the on/off switch to turn it "ON."**
7. **Play your external MIDI keyboard.**

Making Arpeggiator Settings

1. **Access the PATCH PLAY screen (p. 58).**
2. **At the bottom of the screen, touch <Com>.**
3. **In the left side of the screen, touch the <Arpeggio> tab.**
   The PATCH Edit Com Arpeggio screen appears.

In this screen you can set the following arpeggiator parameters.

Arpeggio Switch: Switches the Arpeggiator on/off.

Hold: Switch between Hold On/Hold Off for the Arpeggiator performance.

Patch Tempo: Specify the tempo of an arpeggio.

Octave Range: Specify the range of the arpeggio performance, in octave units.

KBD Velo: Specify the note strength of the keys you play.

Duration: Vary the strength and note length of the accents to modify the rhythmic feel (groove) of the performance.

Motif: Specifies how the arpeggio will be sounded.

Shuffle Rate: Create shuffle rhythms by modifying the timing at which notes are sounded.

Shuffle Resolution: Specify the timing of the notes in terms of note value.

For details regarding each parameter, refer to **"Arpeggio"** (p. 81).

HINT

Arpeggiator settings can be saved with each patch as part of the patch settings. This means that you can create patches that contain the most effective settings.

Creating an Original Arpeggio Pattern (Pattern Edit)

You can create your own **arpeggio pattern** that specifies how an arpeggio will be sounded. This gives you even more interesting ways to use arpeggios.

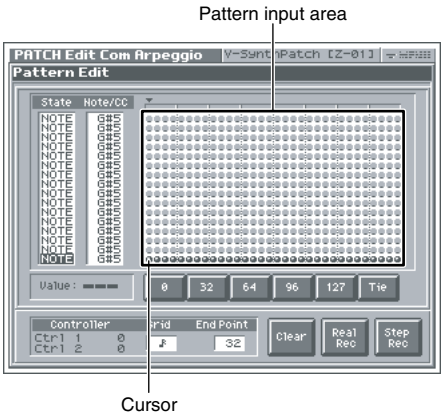
An arpeggio pattern is a set of data that can be up to 32 steps (horizontally) x 16 lines (vertically).

HINT

An arpeggio pattern can be saved for an individual patch as part of the patch settings. This means that you can create a patch designed specifically for that arpeggio pattern.

About the Pattern Edit Window

1. **Access the PATCH Edit Com Arpeggio screen (p. 63).**
2. **Touch <Pattern Edit>.**
   The Pattern Edit window will appear.



State

Specifies the status of each line.

NOTE: Note pitch

CTRL: Control change

Note/CC (Note/Control Change)

Specifies the note number or control change number assigned to each line. If Status is "NOTE," this will be a note number (C-1–G9). If Status is "CTRL," this will be a control change number (0–127).

Pattern Input Area

This area is where you input or edit notes or control changes. The symbols have the following meaning:

●: Note

=: Tie

❍: Control change

Value

Shows the velocity of the note or the value of the control change selected in the pattern input area.

0, 32, 64, 96, 127, Tie/Clr

When inputting notes: When you touch one of these buttons, a note with the velocity shown on that button will be input at the cursor location within the pattern input area. When you touch <Tie>, a tie will be input at the cursor location.

When inputting control changes: A control change with the value shown on that button will be input at the cursor location within the pattern input area. When you touch <Clr>, the selected control change will be erased.

When you are editing, these buttons modify the velocity of the note that is selected in the pattern input area, or the value of the control change.

HINT

You can also input the note velocity or control change value by using the VALUE dial or [INC/+][DEC/-].

Controller

When you operate the Time Trip pad (TTPadX/Y), D Beam controller (DBeamL/R), or assignable controllers (Ctrl_1/2), the value is shown here.

Grid

Specifies the note value that will correspond to "one step" of the arpeggio pattern.

♩ (Quarter note), ♪ (Eighth note), ♪. (Dotted eighth note),
♪ (Sixteenth note), ♪. (Dotted sixteenth note), 𝅘𝅥𝅯 (Thirty-second note)

End Point

Specifies the pattern length as a number of steps (1–32).

Clear

Erases the pattern data (p. 65).

Real Rec (Realtime Recording)

Use realtime recording to create a pattern (p. 64).

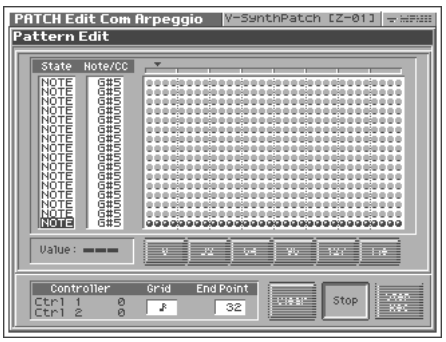
Step Rec (Step Recording)

Use step recording to create a pattern (p. 65).

Creating a Pattern by Playing in Real Time (Real Rec)

This method lets you create a pattern in a way similar to realtime recording on a sequencer. Your playing on the V-Synth's keyboard and your controller operations will be recorded "as is."

1. **Specify the Grid and End Point of the arpeggio pattern that you will be creating.**
   Move the cursor to each value box and set the value.
2. **Touch <Real Rec>.**
   The V-Synth will be in realtime-input standby mode, and the metronome will sound a guide rhythm.



3. **If you want to adjust the tempo, turn ARPEGGIO [TEMPO].**
   Turn the knob toward the right to make the tempo faster, or toward the left to make it slower.
4. **In time with the guide rhythm sounded by the metronome, play the V-Synth's keyboard and operate the controllers.**
   You can repeatedly record over the pattern length (number of steps) you specified in step 1. On each pass, you can add new notes and control changes to build up the pattern.

NOTE

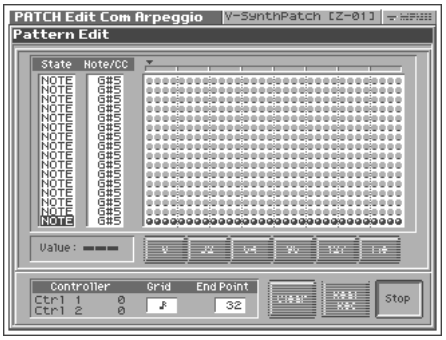
The notes (specified pitches) and control changes in a single pattern cannot exceed a total of 16. All further (seventeenth and later) notes having a new pitch or control changes will not be recorded.

5. **When you are finished with realtime input, touch <Stop>.**
   The metronome guide will stop sounding.
6. **Press ARPEGGIO [ON/OFF] to turn on the arpeggiator, and play the keyboard to hear your realtime-recorded pattern.**

Creating a Pattern by Inputting One Step at a Time (Step Rec)

This method lets you create a pattern in a way similar to step-recording on a sequencer. You can record notes and control changes by inputting them one by one.

1. **Specify the End Point of the arpeggio pattern that you want to create.**
   Move the cursor to the End Point value box and make the setting.
2. **Touch <Step Rec>.**
   The V-Synth will be in step-input standby mode.



3. **Play the V-Synth's keyboard or operate a controller to input the first step.**
   You can repeatedly record over the pattern length (number of steps) you specified in step 1. On each pass, you can add new notes and control changes to build up the pattern.

HINT

- To input a tie, hold down the key of the note that you want to tie and press [►]. You will advance as many steps as the number of times you press [►].
- Step input records the strength (velocity) with which you press the key, and this will be reflected in the level or dynamics of the arpeggiated notes.
- Control changes will be input with the value that was in effect when you pressed [►].

NOTE

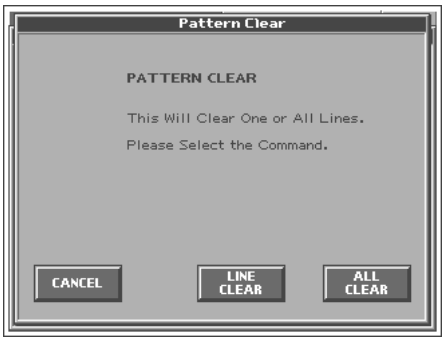
- The notes (specified pitches) and control changes in a single pattern cannot exceed a total maximum of 16. A newly pitched note or a control change that would exceed this total will not be recorded.
- Be aware that if you input another note while still holding down the key for the previously input note, these notes will be input as a chord located at the same step.

4. **When you are finished with step input, touch <Stop>.**
5. **Press ARPEGGIO [ON/OFF] to turn on the arpeggiator, and play the keyboard to hear your step-recorded pattern.**

Erasing a Pattern (Clear)

Here's how to erase data from the pattern. You can erase a specific line or the entire pattern.

1. **To specify a line that you want to erase, move the cursor to that line.**
2. **Touch <Clear>.**
   A window like the following will appear.

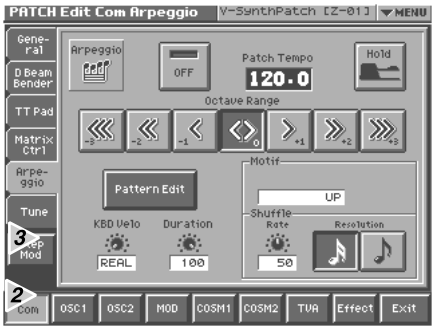


3. **To erase a line of data, touch <LINE CLEAR>. To erase the entire pattern, touch <ALL CLEAR>. If you decide you don't want to clear anything, touch <CANCEL>.**

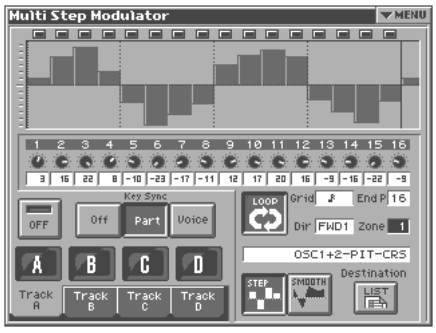
Using steps to vary the sound (Multi Step Modulator)

The Multi Step Modulator is a function that modulates the value of various parameters according to a sixteen-step sequence. On the V-Synth, the patterns of this sequence are managed as "tracks." You can simultaneously use up to four tracks, with each track containing a different sequence. You can use the panel knobs to freely modify the sequence pattern.

1. **Access the PATCH PLAY screen (p. 58).**
2. **At the bottom of the screen, touch <Com>.**
3. **In the left side of the screen, touch <Step Mod>.**

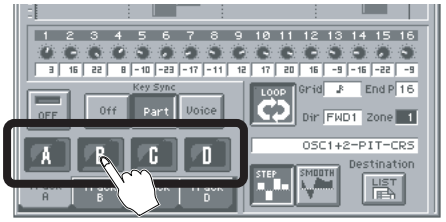


The Multi Step Modulator screen will appear.

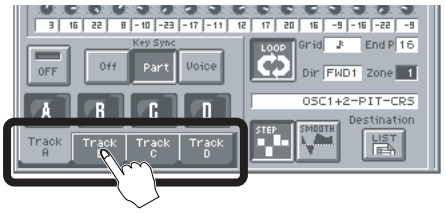


4. **In the screen, turn < Step Switch > ON.**
   The Multi Step Modulator will be applied to the currently selected patch.
5. **Press < A >–< D > to turn tracks on/off as desired.**

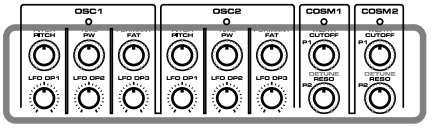
* *If you turn all of the tracks off, there will be no effect even if < Step Switch > is ON.*



6. **Make settings for the track.**
   Touch one of the tabs for a track name you turned ON in step 5.

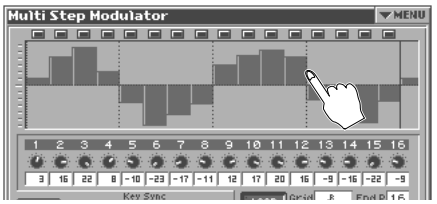


7. **While playing the keyboard to hear the sound, input steps 1–16.**
   The V-Synth's knobs, shown below, correspond to knobs 1–16.



HINT

If you touch <▼ MENU > and select Hand Draw, you'll be able to draw the graph directly with your finger.



HINT

If you touch < SMOOTH >, the graph will be smoothed. This will make the change in the sound occur gradually, producing a more LFO-like result.

HINT

The step bar shown at the far right (number 17) is the same as the one that appears at the far left (number 1). This is helpful when you're setting up a looping sequence.

HINT

The parameter that is modulated by each track will depend on the patch. In the screen, you can touch Destination < List > to change the assigned parameter.

8. **In the same way, make settings for other tracks you turned on in step 5.**
9. **If you want to stop using the step sequence, turn < StepSwitch > OFF in the screen.**

For details regarding each parameter, refer to **"Multi Step Modulator"** (p. 82).

Applying Various Effects to the Sound

The V-Synth provides numerous ways in which you can make your performance more expressive, such as the Time Trip pad, D Beam controller, and assignable controllers.

Applying an Effect by Touching Your Finger to the Pad (Time Trip Pad)

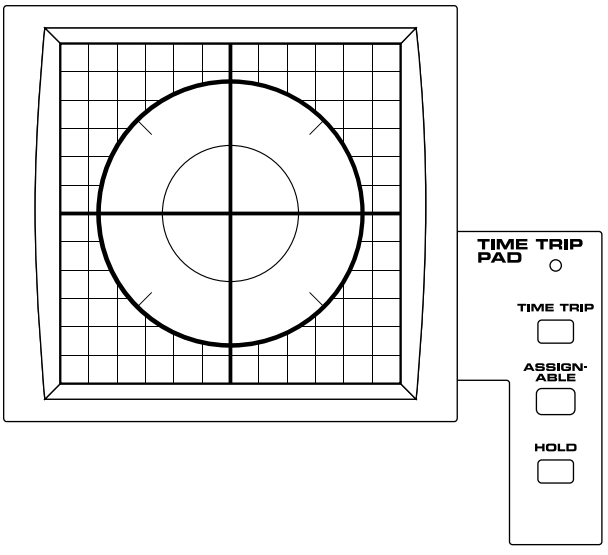
You can apply a variety of effects by touching your fingertip to the Time Trip pad located at the left side of the V-Synth's panel.

What is the Time Trip function?

One of the advantages of VariPhrase is that the playback location and speed of the wave can be changed in real time. The Time Trip function takes advantage of this ability to manually control the playback location and speed of the wave. In patches that use VariPhrase, switch the Time Trip Pad function to "TIME TRIP" to use this function. While playing the keyboard, touch the Time Trip pad and the currently sounding wave will stop at the current playback location. Then as you move your finger from that point in a circle, the wave playback will advance in the direction of conventional playback (clockwise), or the reverse (counterclockwise). Unlike "scratching" on a turntable, this lets you control the playback without affecting the pitch, so you can play the sound at the pitch you specify from the keyboard.

You can use the D Beam controller to produce similar results.

1. **Access the PATCH PLAY screen (p. 58).**
2. **Choose the function that you want to control from the Time Trip pad, and press the TIME TRIP PAD button for that function.**



[TIME TRIP]: Apply the Time Trip effect.

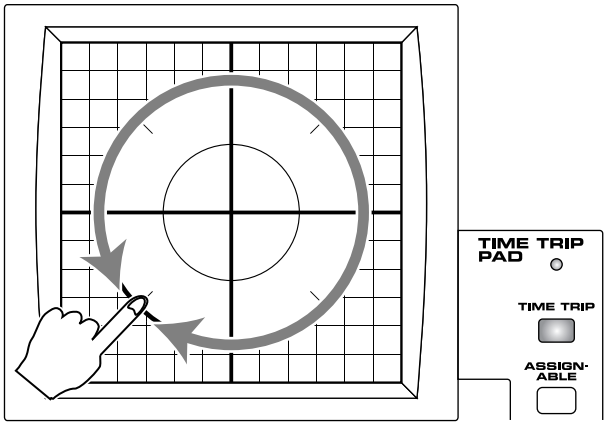
[ASSIGNABLE]: Apply the effect that is specified by each patch. If [ASSIGNABLE] is on, the effect is applied via matrix control. This means that matrix control settings must be made separately. Set the matrix control **Source** to "PAD-X" or "PAD-Y," and specify the parameter to be controlled in **Destination**. For details on these settings, refer to **"Matrix Ctrl"** (p. 80).

By setting matrix control **Source** to "TRIP-R," you can apply the Time Trip effect and the matrix control effect simultaneously. In this case, turn [TIME TRIP] on.

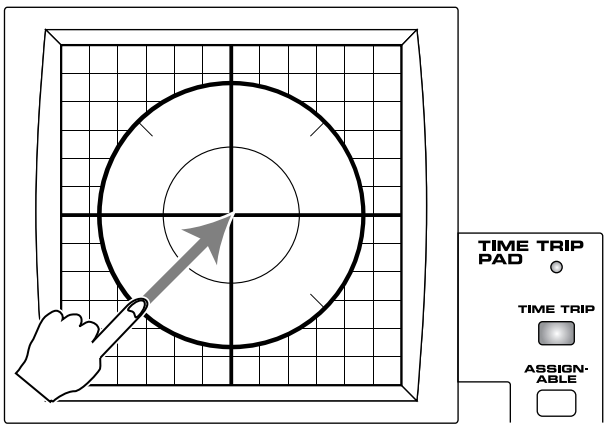
3. **While you play the keyboard to produce sound, place your fingertip on the Time Trip pad and move your finger in the following way.**

If [TIME TRIP] is on

The effect will be applied when you move your finger in a circle on the Time Trip pad.

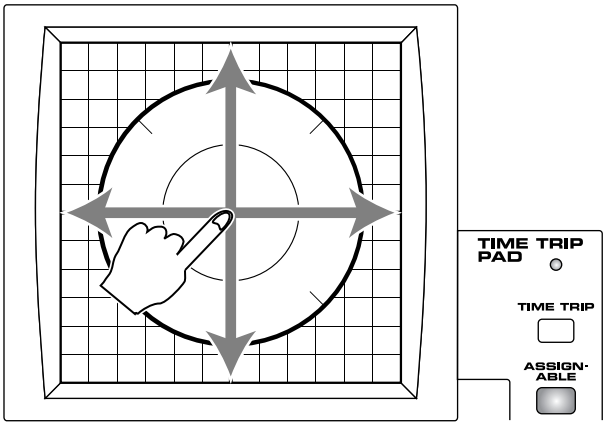


If you are using matrix control as well, the effect will be applied when you move your finger from the circumference of the Time Trip pad toward the center.



If [ASSIGNABLE] is on

The effect will be applied when you move your finger up/down/left/right on the Time Trip pad.



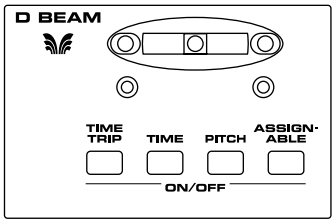
HINT

- By pressing TIME TRIP PAD [HOLD], you can cause the effect to be held even after you take your finger off the Time Trip pad.
- The Time Trip Pad settings are saved with each patch. This means that you can create patches that contain Time Trip Pad settings you like.

Applying an Effect by Passing Your Hand Over the D Beam (D Beam Controller)

The **D Beam controller** can be used simply by waving your hand over it. It can be used to apply various effects, depending on the function that is assigned to it. You can also create effects in which the sound changes instantaneously, in a way that would not be possible by operating a knob or the bender lever.

1. **Access the PATCH PLAY screen (p. 58).**
2. **Choose the function that you want to control from the D Beam controller, and press the D BEAM button for that function to turn on the D Beam controller.**



[TIME TRIP]: Apply the Time Trip effect.

[TIME]: Apply the time control effect.

[PITCH]: Apply the pitch control effect.

[ASSIGNABLE]: Apply the effect that is specified by each patch. By turning [ASSIGNABLE] on, you can apply the effect that is specified by each patch. In this case, however, unlike the other three functions, simply pressing the button to turn it on will not apply an effect. You will also need to make matrix control settings. Set the matrix control **Source** to "BEAM-L" or "BEAM-R," and specify the parameter to be controlled in **Destination**. For details on these settings, refer to **"Matrix Ctrl"** (p. 80).

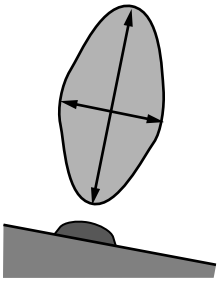
3. **While playing the keyboard to produce sound, place your hand over the D Beam, and slowly move it up and down.**
   Effects will be applied to the sound according to the button you pressed in step 2.
4. **To turn off the D Beam controller, once again press the button that you pressed in step 2, so its indicator goes out.**

HINT

- The D Beam controller settings are saved with each patch. This means that you can create patches that contain D Beam settings you like.
- By assigning a MIDI controller number to the D Beam controller, you can use the D Beam to control an external MIDI device that is connected. For details, refer to **"Beam"** (p. 127).

The usable range of the D Beam controller

The following diagram shows the usable range of the D Beam controller. Waving your hand outside this range will produce no effect.
The D BEAM indicator will light when the D Beam controller is responding.
The D BEAM indicator will not light if you are outside the valid range of the D Beam controller.



NOTE

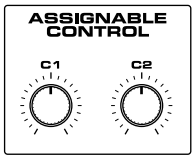
The usable range of the D Beam controller will become extremely small when used under strong direct sunlight. Please be aware of this when using the D Beam controller outside.

Applying an Effect by Turning a Knob (Assignable Controller)

You can turn the ASSIGNABLE CONTROL knobs to modify the sound in real time.

The assignable controllers use matrix control to apply effects to the sound. This means that you will need to make matrix control settings separately. Set the matrix control **Source** to "KNOB1" or "KNOB2," and specify the parameter to be controlled in **Destination**. For details on this setting, refer to **"Matrix Ctrl"** (p. 80).

1. **Access the PATCH PLAY screen (p. 58).**
2. **While playing the keyboard to produce sound, turn the ASSIGNABLE CONTROL knobs ([C1], [C2]).**
   The sound will change according to the function assigned to each knob.

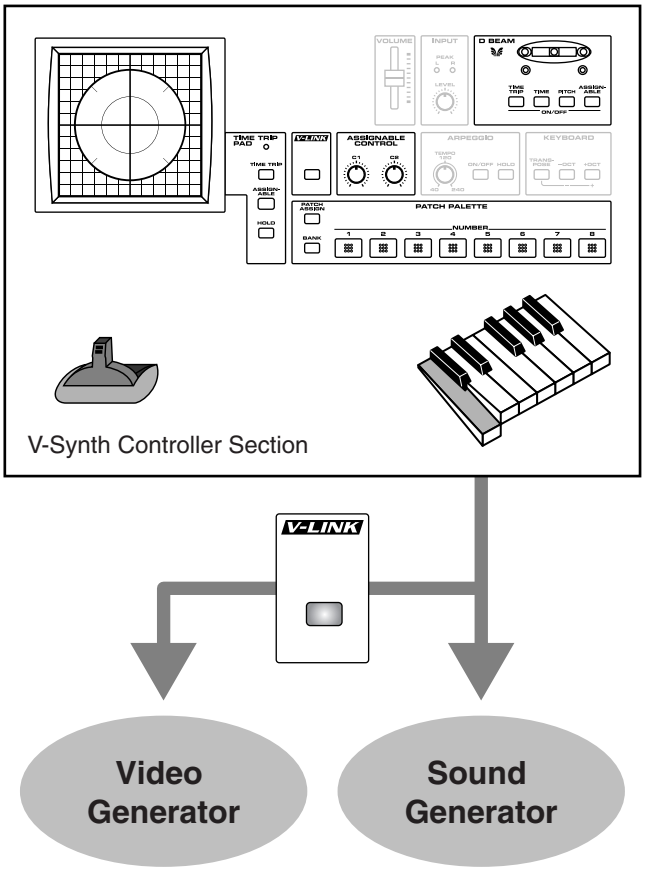


HINT

- The assignable controller settings are saved with each patch. This means that you can create patches that contain assignable controller settings you like.
- By assigning MIDI controller numbers to the assignable controllers, you can turn [C1] or [C2] to control an external MIDI device that is connected. For details, refer to **"Knob 1, 2 Assign (V-LINK Knob1, 2 Assign)"** (p. 129).

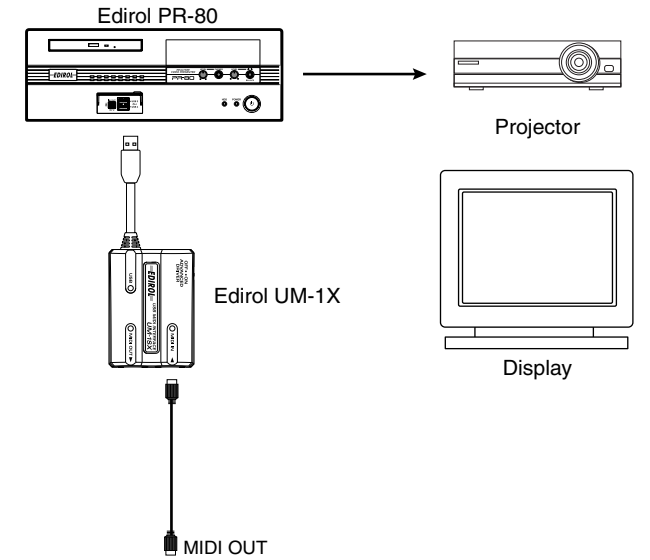
Synchronizing Music and Video While You Play the V-Synth (V-LINK)

The V-Synth lets you use the pitch bend/modulation lever, Time Trip pad, D Beam controller, and C1/C2 knobs to control an externally connected video device that supports V-LINK. This means that your performance on the V-Synth can control not only sound but also images, producing sound and video effects that are linked to your playing.



V-LINK (V-LINK) is a function that allows music and images to be performed together. By using MIDI to connect two or more V-LINK compatible devices, you can easily enjoy performing a wide range of visual effects that are linked to the expressive elements of a music performance.

Example Connections



V-Synth

Enter V-LINK Mode

1. Press [V-LINK] so the indicator lights.

A PATCH PLAY screen like the one shown below appears, and the V-Synth will enter V-LINK mode.

In this screen you can view the V-LINK functions that are assigned to the various controllers.

For details on how to assign V-LINK functions to the controllers, refer to **"V-LINK Settings (V-LINK)"** (p. 128).

2. To exit V-LINK mode, press [V-LINK] once again so the indicator goes out.

V-LINK Functions that the V-Synth Can Control and MIDI Messages

You can assign the following functions to the V-Synth's controllers to control a V-LINK compatible video device.

V-LINK function	Transmitted MIDI message
Playback Speed	CC 10 (Panpot)
Dissolve Time (amount time the video clips overlap)	CC 5 (Portamento Time)
Audio (Volume of audio playback)	CC 7 (Volume)
Color Cb (color-difference signal)	CC 72 (Release)
Color Cr (color-difference signal)	CC 71 (Resonance)
Brightness	CC 74 (Cutoff)
VFX1 (Visual Effects 1)	CC 1 (Modulation)
VFX2 (Visual Effects 2)	CC 91 (Reverb)
VFX3 (Visual Effects 3)	CC 94 (Celeste)
VFX4 (Visual Effects 4)	CC 95 (Phaser)
Output Fade	CC 73 (Attack)
T Bar	CC 11 (Expression)
Dual Stream	CC 64 (Hold 1)
Time Trip	CC 92 (Tremolo) CC 93 (Chorus)
Palette1–8 (Selecting a palette)	CC 0 (Bank Select): 00H–07H
Clip1–8 (Selecting a video clip)	Program Change: 00H–07H

Creating a Patch

With the V-Synth, you have total control over a wide variety of settings. Each item that can be set is known as a **parameter**. When you change the values of parameters, you are doing what is referred to as **Editing**. This chapter explains the procedures used in creating patches, and the functions of the patch parameters.

How to Make the Patch Settings

Start with an existing patch and edit it to create a new patch. The sound of a patch is created by six sections of parameters (p. 41). When editing a patch, you need to be aware of how each section affects the overall sound.

Five Tips for Editing Patches

● Use the Sound Shaper function (p. 76**)**

The Sound Shaper function makes it easy to design sounds intuitively. Simply choose the appropriate group and template for the type of sound you want to create, and turn the knobs to edit the relevant parameters just like a professional sound designer.

● Select a patch that is similar to the sound you wish to create.

It's hard to create a new sound that's exactly what you want if you just select a patch and modify its parameters at random. It makes sense to start with a patch whose sound is related to what you have in mind.

● Check the Structure setting.

The structure type is an important parameter which determines how the six sections are combined. Before you actually begin editing, you should understand how the sections are related to each other (p. 41).

● Decide which section(s) you will use.

When creating a patch, it is very important to decide which section(s) you will use. In the Edit screen of each section, use the on/off switch to specify whether that section will be used (on) or not used (off). You can also use the on/off buttons located in the STRUCTURE section of the V-Synth's panel.

● Turn Effects off.

Since the V-Synth effects have such a profound impact on its sounds, turn them off to listen to the sound itself so you can better evaluate the changes you're making. Since you will hear the original sound of the patch itself when the effects are turned off, the results of your modifications will be easier to hear. Actually, sometimes just changing effects settings can give you the sound you want.

1. Access the PATCH PLAY screen, and select the patch whose settings you wish to modify (p. 58).

HINT

If you want to create all your patches from the ground up, rather than the patches that have already been prepared, carry out the **Initialize** operation (p. 72).

2. The parameters are organized into several editing groups. Touch one of the buttons at the bottom of the screen to select the edit group containing the parameters you want to set.

HINT

In the PATCH PLAY screen, you can touch the display area for each section to jump to the setting screen for that section.

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

☞ For details on how the parameters are grouped, refer to **"Patch Parameters"** (p. 152).

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

☞ For details on how to use the touch screen, refer to **"Basic Touch Screen Operation"** (p. 23).

5. 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.

6. Repeat steps 2–5 to complete a patch.

7. If you wish to save the changes you've made, perform the Save operation (p. 73). If you do not wish to save changes, press [EXIT] to return to the PATCH PLAY screen.

If you return to the PATCH PLAY screen without saving, the display will indicate "EDITED," reminding you that the patch settings have been modified.

NOTE

If you turn off the power or select a different patch while the display indicates "EDITED," your edited patch will be lost.

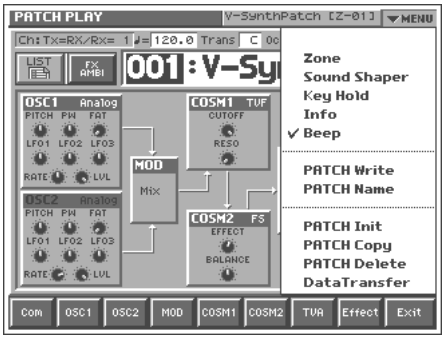
Initializing Patch Settings (PATCH Init)

"Initialize" means to return the settings of the currently selected patch to a standard set of values.

NOTE

The Initialize operation will affect only the currently selected patch in temporary area; the patches that are stored in internal memory and work area will not be affected. If you wish to restore all of the V-Synth's settings to their factory values, perform a Factory Reset (p. 147).

1. **Access the PATCH PLAY screen, and select the patch that you wish to initialize (p. 58).**
2. **Touch <▼ MENU> in the upper right of the screen.**
   A pulldown menu appears.



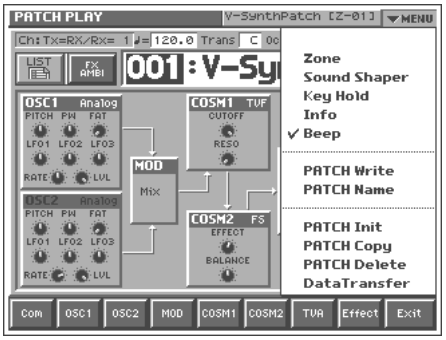
3. **In the pulldown menu, touch <PATCH Init>.**
   A window like the following appears.

4. **Touch <EXECUTE>.**
   The initialization will be carried out, and you'll be returned to the Patch Edit screen.

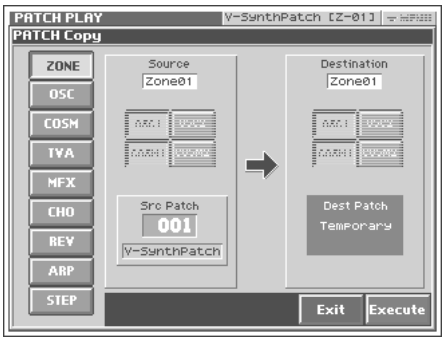
Copying Patch Settings (PATCH Copy)

This operation copies the settings of any desired patch to the currently selected patch. You can use this feature to make the editing process faster and easier.

1. **Access the PATCH PLAY screen, and select the copy-destination patch (Dest Patch) (p. 58).**
2. **Touch <▼ MENU> in the upper right of the screen.**
   A pulldown menu appears.



3. **In the pulldown menu, touch <PATCH Copy>.**
   The PATCH Copy window appears.



4. **Touch a button in the left side of the screen to select the object you want to copy.**
   <ZONE>: Copy patch settings for one zone.
   <OSC>: Copy oscillator parameter settings. Specify the copy-source (Source) and copy-destination (Destination) oscillator (OSC1/OSC2).
   <COSM>: Copy COSM parameter settings. Specify the copy-source (Source) and copy-destination (Destination) COSM section (COSM1/COSM2).
   <TVA>: Copy TVA parameter settings.
   <MFX>: Copy MFX settings.
   <CHO>: Copy chorus settings.
   <REV>: Copy reverb settings.
   <ARP>: Copy arpeggiator settings.
   <STEP>: Copy Multi Step Modulator settings.
5. **Specify the zone (Zone 01–Zone 16) for the copy source (Source) and copy destination (Destination). Move the cursor to "Zone**" and make your selection.**
6. **Move the cursor to "Src Patch" and select the copy-source patch number.**

HINT

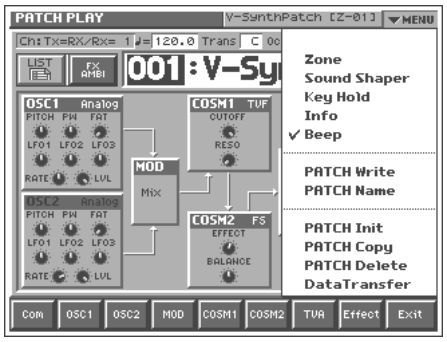
For the Zone Copy, Oscillator Copy, COSM Copy, and TVA Copy operations, you can specify the currently selected patch as the copy source by setting "SrcPatch" to "TEMP."

7. **Touch <Execute> to execute the copy operation.**

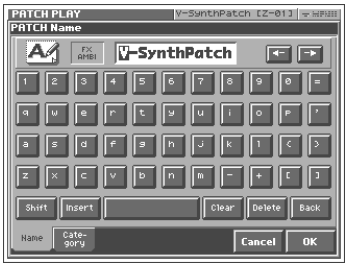
Naming a Patch (PATCH Name)

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.**

* *You will lose your edited patch settings if you switch to another patch or turn off the power. If you want to keep a patch whose settings you have edited, then perform the Save operation (p. 74).*

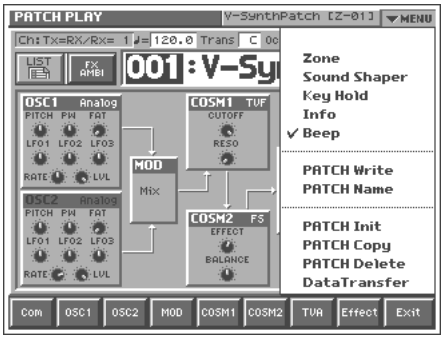
Assigning the Category of a Patch

If you assign a category to your patches, you'll be able to search for them by category in the PATCH List window.

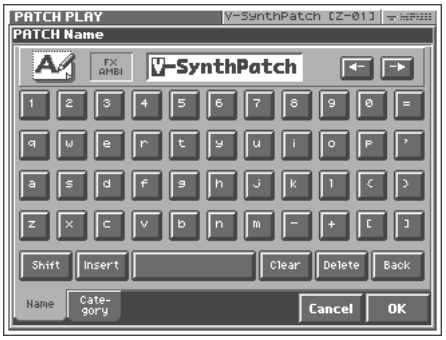
MEMO

If no category is assigned to a patch, its category name will be "No Assign."

1. **Make sure that the patch that you want to category 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.

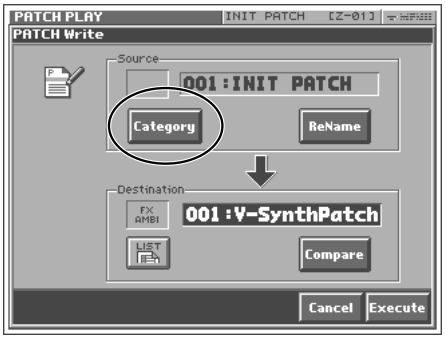


4. **Touch <Category> tab in the lower area of the display.**

5. **Select a category from the list.**
6. **Touch <OK> to finalize the category.**

MEMO

You can also assign a category by touching <Category> in the Patch Write window.



*1 *You will lose your edited patch settings if you switch to another patch or turn off the power. If you want to keep a patch whose settings you have edited, then perform the Save operation (p. 74).*

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 internal (internal memory).

When you modify the settings of a patch, the PATCH PLAY screen will indicate "EDITED." Once you save the patch into internal memory, the "EDITED" indication goes away.

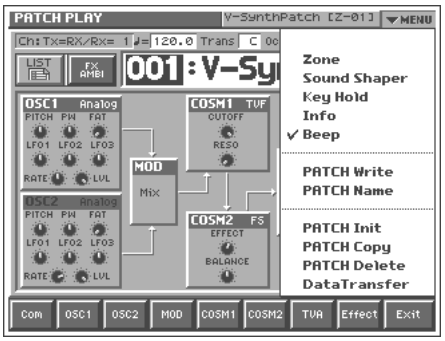
NOTE

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 Factory Reset (p. 147).

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

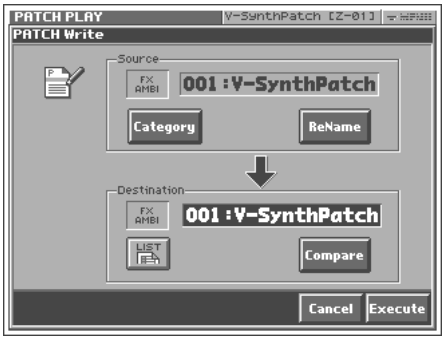
2. Touch <▼ MENU> in the upper right of the screen.

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.

HINT

- By touching <Compare> you can check the save-destination patch (Compare function).
- When you touch <List>, the PATCH List window will appear, allowing you to select the save-destination patch from the list.

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

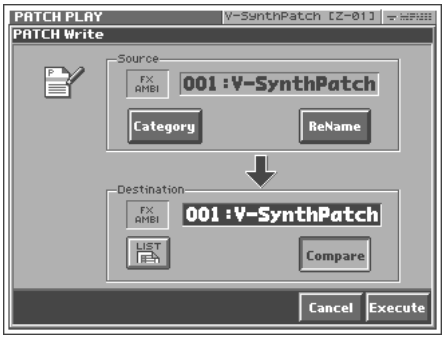
Auditioning the Save-Destination Patch (Compare)

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 keyboard to sound the save destination patch, then check whether you really want to overwrite it.

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.

Registering a Favorite Patch (Patch Palette)

You can bring together your favorite and most frequently used patches in one place by registering them into the patch palette. By using this function you can rapidly select favorite patches from internal memory. You can register a total of 64 sounds (8 sounds x 8 banks) as favorite sounds.

For details on how to select patches that are registered in the patch palette, refer to **"Selecting Favorite Patches (Patch Palette)"** (p. 59).

1. Access the PATCH PLAY screen, and select the patch that you wish to register (p. 58).

2. Hold down [BANK] and press a NUMBER [1]–[8] to select the bank in which you wish to register the sound.

When you press [BANK], the indicator of the currently selected bank button (NUMBER [1]–[8]) will blink.

HINT

If you continue pressing [PATCH ASSIGN] or [BANK], the PATCH PALETTE window will appear. In this window you can view the patches that are registered in the currently selected bank.

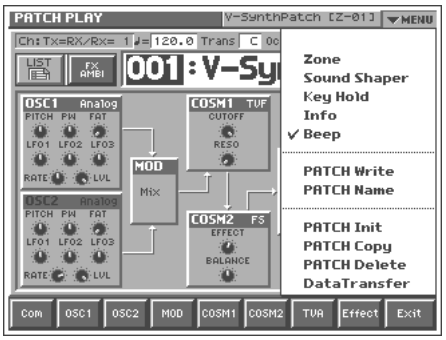
3. Hold down [PATCH ASSIGN] and press a NUMBER [1]–[8] to select the button at which you wish to register the sound.

When the display indicates "Completed!," registration has been completed.

Deleting Patches (PATCH Delete)

Delete unneeded patches from the internal memory.

1. **Touch <▼ MENU> in the upper right of the screen.**
   A pulldown menu appears.



2. **In the pulldown menu, touch <PATCH Delete>.**
   The PATCH Delete List window appears.

3. **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.

HINT

Each screen in the PATCH Delete List window shows a group of 16 patches. To view other patches, touch <017-032>–<241-256>, located at either side of the screen. To view higher-numbered patches, touch <257-512>, located at the bottom of the screen.

4. **Touch <Execute>.**
   The selected patch will be deleted.

5. **If you want to continue deleting other patches, repeat steps 3 and 4.**

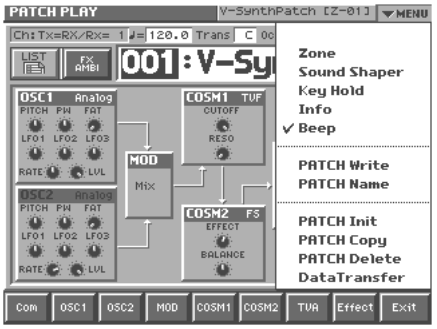
6. **Press [EXIT].**
   The PATCH Delete List window closes.

Creating a patch intuitively (Sound Shaper)

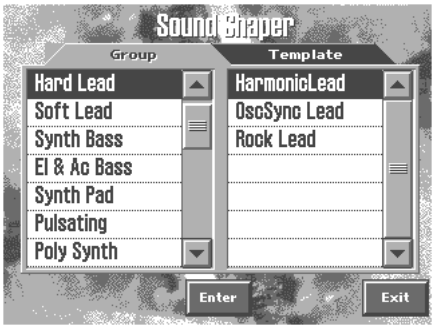
The Sound Shaper function lets you create a sound simply by choosing the appropriate group and template for the type of sound you want to create, and using the knobs and buttons to edit the relevant parameters just like a professional sound designer.

1. **Make sure that the PATCH PLAY screen is displayed.**

2. **In the upper right of the screen, touch <▼ MENU >.**
   A pulldown menu appears.



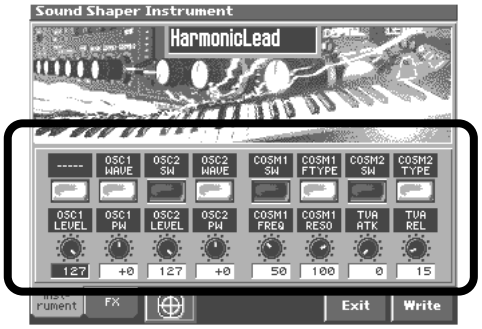
3. **In the pulldown menu, touch < Sound Shaper >.**
   A window like the following appears.



Choose the "group" and "template" that are closest to the type of sound you want to create.

Choose the group from the list at left, choose the template from the list at right, then touch < Enter >.

4. A window like the following will appear.
While playing the keyboard to hear the sound, use the eight switches and knobs to make changes.

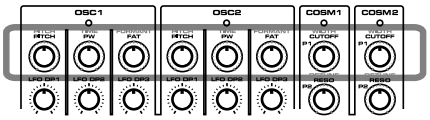


MEMO

The eight switches and knobs are automatically assigned to the most appropriate parameters for each template.

MEMO

The V-Synth knobs shown below correspond to the knobs in the screen.

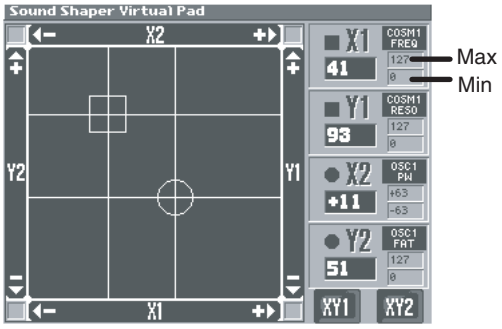


MEMO

Some buttons act as on/off switches, while others choose items from a list.

MEMO

You can press the pad ( ) button located in the bottom of the screen to open the Virtual Pad screen.

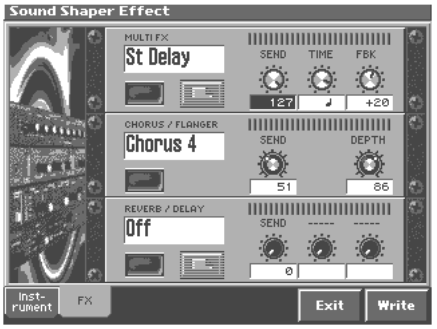


- In this screen you can simultaneously edit the four parameters X1, Y1, X2, and Y2. (The most appropriate parameters for each template are automatically selected for X1, Y1, X2, and Y2.)
- By turning on the < XY1 > and <XY2 > buttons located in the lower right of the screen, and rubbing your finger over the virtual pad, you can edit these parameters in real time.
- Even if each < XY > button is off, you can edit the four parameters individually by touching the X1, Y1, X2, and Y2 areas at the four corners of the pad.
- To exit the Virtual Pad screen, press the [EXIT] button located on the front panel.

MEMO

If the value of each parameter is outside its upper limit or lower limit, an arrow icon pointing in that direction will appear.

5. At the bottom of the screen, touch the < FX > tab to make effect settings.



- From the top, the effects are MFX (multi-effect), chorus, and reverb.
- Use the button for each effect to turn it on/off.
- To change the type of each effect, touch the effect name to highlight it, then turn the VALUE dial or use [INC/+][DEC/-].
- The Sound Shaper function lets you edit only the most important parameters of each effect using the on-screen knobs.

For details on each effect, refer to **"Effects List"** (p. 166).

6. When you touch < Write > in the lower right of the screen, the "Patch Write" screen will appear, where you can save the patch you created.

Save your patch as described in **"Saving Patches (PATCH Write)"** (p. 74) and **"Saving Project on Disk (Save Project)"** (p. 132).

NOTE

If you want to save a patch you created in the Sound Shaper, you must also execute "Save Project" (p. 132) in addition to "PATCH Write" (p. 74). If you don't execute "Save Project," the PCM oscillator of the patch you created in Sound Shaper will no longer sound the next time you turn on the power.

Functions of Patch Parameters

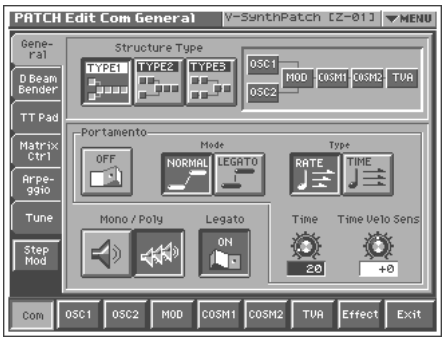
This section explains the functions the different patch parameters have, as well as the composition of these parameters.

MEMO

Parameters marked by "★" can be controlled by specific MIDI messages (Matrix Control). In the PATCH Edit Com Matrix Ctrl screen you can specify how the parameter will be controlled (p. 80). Parameters marked by "◆" can be controlled by panel buttons or knobs.

Settings Common to the Entire Patch (Common)

General



Structure Type ◆

Specifies how the various sound-creating elements will be combined.

Value

TYPE1: This is the most conventional structure. Different sounds from OSC1 and OSC2 are mixed by MOD, processed by COSM1 to create the tonal character (e.g., using SBF (Side Band Filter)), and then processed by COSM2 to adjust the tone (e.g., using TVF).

TYPE2: This structure connects OSC1 and OSC2 asymmetrically. This is effective when using a modulation that has the modulator set to anything other than "MIX." Typically, you will use OSC1 and COSM1 to create the basic sound, then select the OSC2 sound and MOD settings to add variation, and finally select TVF in COSM2 to adjust the tone.

TYPE3: In this structure, OSC1 is paired with COSM1, and OSC2 is paired with COSM2. You can use a controller such as the Time Trip Pad to morph between the sound created by OSC1 and COSM1 and the sound created by OSC2 and COSM2.

Portamento (Portamento Switch)

Specifies whether the portamento effect will be applied (ON) or not (OFF).

Value: OFF, ON

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.

Mode (Portamento Mode)

Specifies the performance conditions for which portamento will be applied.

Value

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 (Portamento Type)

Specifies the type of portamento effect.

Value

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 (Portamento Time)

When portamento is used, this specifies the time over which the pitch will change. Higher settings will cause the pitch change to the next note to take more time.

Value: 0–127

Time Velo Sens (Portamento Time Velocity Sensitivity)

This allows keyboard dynamics to affect the portamento Time. If you want portamento 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.

Value: -63– +63

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.

Value

: Only the last-played note will sound.

: Two or more notes can be played simultaneously.

Legato (Legato Switch)

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).

Value: OFF, ON

HINT

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.

D Beam/Bender

Octave Shift

Adjusts the pitch of the patch's sound up or down in units of an octave (+/-3 octaves).

Value: -3– +3

D Beam (D Beam Type) ◆

Specifies the effect that will be controlled by the D Beam controller.

Value

OFF: The D Beam controller will not be used.

Time Trip: The D Beam controller will control the Time Trip effect.

Time: The D Beam controller will control the Time Control effect.

Pitch: The D Beam controller will control the Pitch Control effect.

Assignable: The D Beam controller will control the effect specified for each patch.

For details on how to specify the effect that will be controlled when "Assignable" is selected, refer to **"Matrix Ctrl"** (p. 80).

MEMO

The level meters at both sides of "D Beam" in the screen show the state of response as you move your hand closer to the D Beam controller.

Bend Range Up (Pitch Bend Range Up)

Specifies the degree of pitch change in semitones when the Pitch Bend lever is all the way right. For example, 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.

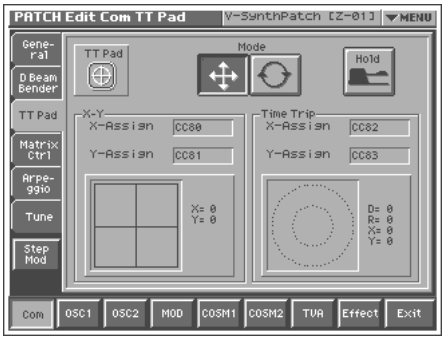
Value: 0–48

Bend Range Down (Pitch Bend Range Down)

Specifies the degree of pitch change in semitones when the Pitch Bend lever is all the way left. 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.

Value: 0–48

TT Pad



Mode (Time Trip Pad Mode)

Specifies the operating mode of the Time Trip pad.

Value

: XY mode. The effect will be applied when you move your finger up/down/left/right on the Time Trip pad.

: Time Trip mode. The effect will be applied when you move your finger in a circle over the Time Trip pad.

Hold (Time Trip Pad Hold Switch) ◆

Specifies whether the current value will be maintained (ON) when you remove your finger from the Time Trip pad, or not maintained (OFF).

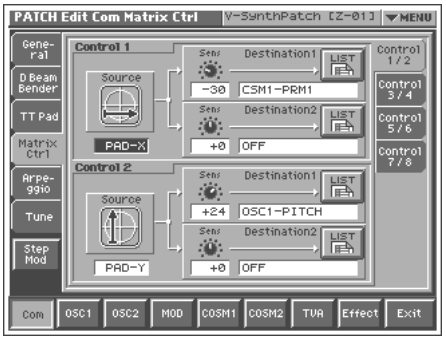
Value: OFF, ON

For details on settings for the Time Trip effect, refer to **"Matrix Ctrl"** (p. 80) and **"TT Pad/Knob"** (p. 128).

MEMO

In the screen, "X-Y" and "Time Trip" indicate the effect that is assigned and the location of the pad that your finger touched.

Matrix Ctrl



Matrix Control

Ordinarily, if you wanted to change tone parameters using an external MIDI device, you would need to send System Exclusive messages—MIDI messages designed exclusively for the V-Synth. However, System Exclusive messages tend to be complicated, and the amount of data that needs to be transmitted can get quite large.

For that reason, a number of the more typical of the V-Synth's patch parameters have been designed so they accept the use of Control Change (or other) MIDI messages for the purpose of making changes in their values. This provides you with a variety of means of changing the way patches are played. For example, you can use the Pitch Bend lever to change the LFO cycle rate, or use the keyboard's touch to open and close a filter.

The function which allows you use MIDI messages to make these changes in realtime to the tone parameters is called the **Matrix Control**.

To use the Matrix Control, specify which MIDI message (Source parameter) will be used to control which parameter (Destination parameter), and how greatly (Sns parameter).

Up to eight Matrix Controls can be used in a single patch. In the right side of the screen, touch the "Control 1/2"–"Control 7/8" tabs to select the matrix control that you want to use.

Source (Matrix Control Source)

Sets the MIDI message used to change the patch parameter with the Matrix Control.

Value

OFF: Matrix control will not be used.

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

BEND: Pitch Bend

AFT: Aftertouch

+PAD-X: Time Trip pad (horizontal direction from the center)

+PAD-Y: Time Trip pad (vertical direction from the center)

PAD-X: Time Trip pad (horizontal direction)

PAD-Y: Time Trip pad (vertical direction)

TRIP-R: Time Trip pad (center from the circumference)

BEAM-L: D Beam controller (left)

BEAM-R: D Beam controller (right)

KNOB1: Assignable Controller ([C1])

KNOB2: Assignable Controller ([C2])

VELO: Velocity (pressure you press a key with)

KEYF: Note Number

Sens (Matrix Control Sens)

Sets the amount of the Matrix Control's effect that is applied. If you wish to modify the selected parameter in a positive (+) direction – i.e., a higher value, toward the right, or faster etc. – from its current setting, select a positive (+) value. If you wish to modify the selected parameter in a negative (-) direction – i.e., a lower value, toward the left, or slower etc. – from its current setting, select a negative (-) value. When both positive and negative are selected, the changes are greater as the value increases. Set it to "0" if you don't want this effect.

Value: -63– +63

Destination 1, 2 (Matrix Control Destination 1, 2)

Specifies the parameters that will be controlled by the matrix controllers. When not controlling parameters with the Matrix Control, set this to "OFF." Up to two parameters can be specified for each Matrix Control, and controlled simultaneously.

Value

You can control the following parameters. For details on each parameter, refer to the corresponding reference page.

MEMO

In this manual, Parameters that can be controlled using the Matrix Control are marked with a "★."

OSC1/2-PITCH: Oscillator Pitch (p. 87)

OSC1/2-TIME/PW: Time/Pulse Width (p. 90)

OSC1/2-FORMA/FAT: Formant/Fat (p. 88, p. 91)

OSC1/2-LVL: Level (p. 91)

OSC1/2-PENV-ATK: Pitch Envelope Attack Time (p. 94)

OSC1/2-PENV-DCY: Pitch Envelope Decay Time (p. 94)

OSC1/2-PENV-REL: Pitch Envelope Release Time (p. 94)

OSC1/2-TENV-ATK: Time Envelope Attack Time (p. 94)

OSC1/2-TENV-DCY: Time Envelope Decay Time (p. 94)

OSC1/2-TENV-REL: Time Envelope Release Time (p. 94)

OSC1/2-FENV-ATK: Formant Envelope Attack Time (p. 94)

OSC1/2-FENV-DCY: Formant Envelope Decay Time (p. 94)

OSC1/2-FENV-REL: Formant Envelope Release Time (p. 94)

OSC1/2-AENV-ATK: Oscillator TVA Envelope Attack Time (p. 94)

OSC1/2-AENV-DCY: Oscillator TVA Envelope Decay Time (p. 94)

OSC1/2-AENV-REL: Oscillator TVA Envelope Release Time (p. 94)

OSC1/2-LFO-RATE: Oscillator LFO Rate (p. 95)

OSC1/2-LFO-PCH: Oscillator Pitch LFO Depth (p. 87)

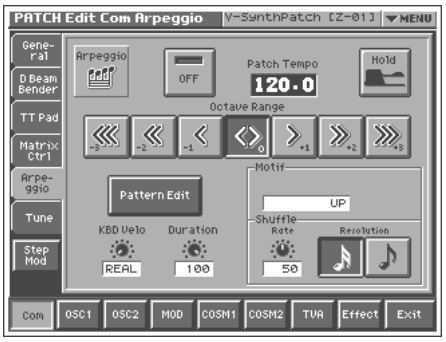
OSC1/2-LFO-TM/PW: Time/Pulse Width LFO Depth (p. 87, p. 90)

OSC1/2-LFO-FR/FT: Formant/Fat LFO Depth (p. 88, p. 91)
OSC1/2-LFO-LVL: Oscillator Level LFO Depth (p. 91)
CSM1/2-PRM1: (p. 161)
CSM1/2-PRM2: (p. 161)
CSM1/2-ENV1-ATK: COSM Envelope Attack Time (p. 94)
CSM1/2-ENV1-DCY: COSM Envelope Decay Time (p. 94)
CSM1/2-ENV1-REL: COSM Envelope Release Time (p. 94)
CSM1/2-ENV2-ATK: COSM Envelope Attack Time (p. 94)
CSM1/2-ENV2-DCY: COSM Envelope Decay Time (p. 94)
CSM1/2-ENV2-REL: COSM Envelope Release Time (p. 94)
CSM1/2-LFO-RATE: COSM LFO Rate (p. 95)
CSM1/2-LFO-PRM1: (p. 161)
CSM1/2-LFO-PRM2: (p. 161)
TVA-LVL: Level (p. 93)
TVA-ENV-ATK: TVA Envelope Attack Time (p. 94)
TVA-ENV-DCY: TVA Envelope Decay Time (p. 94)
TVA-ENV-REL: TVA Envelope Release Time (p. 94)
TVA-LFO-RATE: TVA LFO Rate (p. 95)
TVA-LFO-LVL: Level LFO Depth (p. 93)
TVA-LFO-PAN: Pan LFO Depth (p. 93)
MFX-SEND: MFX Send Level (p. 96)
CHO-SEND: Chorus Send Level (p. 96)
REV-SEND: Reverb Send Level (p. 96)
MFX1–3: (p. 166)
TVA-PAN: Pan (p. 93)

HINT

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

Arpeggio



Arpeggio Switch ◆

Switches the Arpeggiator on/off.
Value: OFF, ON

Patch Tempo ◆

Specify the tempo of an arpeggio. When Clock Source parameter (p. 123) is set to "INTERNAL," this setting value is effective.
Value: 20.0–250.0

Hold (Arpeggio Hold Switch) ◆

Switch between Hold On/Hold Off for the Arpeggiator performance.
Value: OFF, ON

Octave Range (Arpeggio Octave Range)

Sets the key range in octaves over which arpeggio will take place. If you want the arpeggio to sound using only the notes that you actually play, set this parameter to "0." To have the arpeggio sound using the notes you play and notes 1 octave higher, set this parameter to "+1." A setting of "-1" will make the arpeggio sound using the notes you play and notes 1 octave lower.
Value: -3– +3

Pattern Edit

Press this when you want to create an original arpeggio pattern.

For details on creating an arpeggio pattern, refer to **"Creating an Original Arpeggio Pattern (Pattern Edit)"** (p. 63).

KBD Velo (Arpeggio Keyboard Velocity)

Specifies the loudness of the notes that you play.
If you want the velocity value of each note to depend on how strongly you play the keyboard, set this parameter to "REAL." If you want each note to have a fixed velocity regardless of how strongly you play the keyboard, set this parameter to the desired value (1–127).
Value: REAL, 1–127

Duration (Arpeggio Duration)

Modifies the length of the notes to adjust the "groove" feel of the arpeggio. A setting of "100%" will produce the most pronounced groove feel.

Value: 0–100%

Motif (Arpeggio Motif)

Sets the order in which notes of the chord will sound.

Value

UP: Notes you press will be sounded, beginning from low to high.

DOWN: Notes you press will be sounded, from high to low.

UP&DOWN: Notes you press will be sounded, from low to high, and then back down from high to low.

RANDOM: Notes you press will be sounded, in random order.

NOTE ORDER: Notes you press will be sounded in the order in which you pressed them. By pressing the notes in the appropriate order you can produce melody lines. Up to 128 notes will be remembered.

RHYTHM: Unlike a conventional arpeggio, the notes that you specified when inputting the pattern will always sound. The keys that you press while performing will not affect the result; the specified pattern will play regardless of the pitch of the keys you play. This is suitable for playing a drum patch (p. 100).

PHRASE: Pressing a single key will sound the phrase based on the pitch of that key. If multiple keys are pressed, the last-pressed key will be valid.

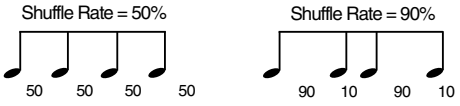
AUTO: The timing at which the keys are sounded is assigned automatically, starting at the lowest key that you pressed.

Shuffle Rate (Arpeggio Shuffle Rate)

This setting lets you modify the note timing to create shuffle rhythms.

With a setting of "50%" the notes will be spaced evenly. As the value is increased, the note timing will have more of a "dotted" (shuffle) feel.

Value: 0–100%

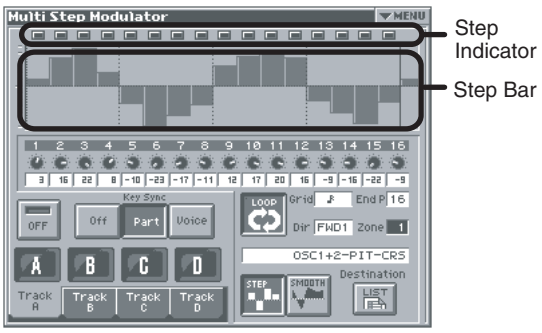


Shuffle Resolution (Arpeggio Shuffle Resolution)

Specify the timing resolution in terms of a note value. The note value can be specified as either an 16th note or a eighth note.

Value:

Multi Step Modulator



Step Indicator

This indicates the current location within the step sequence.

Step Bar

This graphically shows the sixteen steps. The step bar shown at the far right (number 17) is the same as the one that appears at the far left (number 1). This is helpful when you're setting up a looping sequence.

HINT

If you touch <▼ MENU > and select Hand Draw, you'll be able to draw the changes by directly touching the graph.

HINT

If you touch < SMOOTH >, the graph will become a (smooth) line graph.

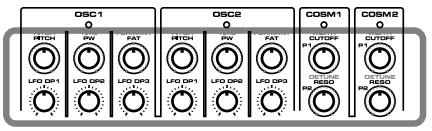
If you touch < STEP >, the graph will become a bar graph.

Step knobs ◆

Use these knobs to input the sixteen steps.

HINT

The following knobs of the V-Synth correspond to knobs 1–16.



Step Switch (Step modulator switch)

This turns the multi step modulator on/off.

Value: OFF, ON

* *This setting applies to all tracks (Track A–D).*

Key Sync (Step modulator key sync)

This specifies whether the step sequence will be reset (i.e., will play from the beginning) when a note-on occurs.

Value

Off: The step sequence will not be reset when a note-on occurs.

Part: The step sequence will be reset when a note-on occurs, but will not be reset if the key was played legato.

Voice: The step sequence will be reset each time a note-on occurs.

* *This setting applies to all tracks (Track A–D).*

Track Button A–D (Step modulator track buttons A–D)

These turn the multi step modulator on/off for the four tracks (A–D).

Value: OFF, ON

Track TAB A–D (Step modulator track tabs A–D)

These access the editing screens for the four multi step modulator tracks (A–D).

Loop (Step modulator loop switch)

This turns looping on/off for the step sequence.

Value: OFF, ON

Grid (Step grid)

This specifies the note value of each step.

Value:

♩ (Quarter note), ♪ (Eighth note), ♪. (Dotted eighth note),
𝅘𝅥𝅯 (Sixteenth note), 𝅘𝅥𝅯. (Dotted sixteenth note), 𝅘𝅥𝅰 (Thirty-second note)

End P (Step modulator end point)

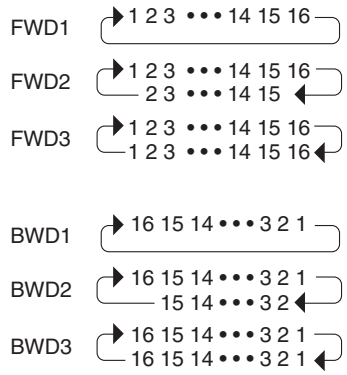
This specifies the sequence length as a number of steps.

Value: 1–16

Dir (Step modulator direction)

This specifies the direction in which the step sequence will play.

Value:



Zone (Step modulator zone)

This specifies the zone to which the step modulator will be applied.

Value: 1–16

Destination (Step modulator destination)

The parameter that is controlled by the step sequence will depend on the patch. Touch < List > to change the parameter that is controlled.

STEP/SMOOTH (Step/Smooth switch)

Touch < SMOOTH > to select a line graph (smooth change), or touch <STEP > to select a bar graph (stepped change).

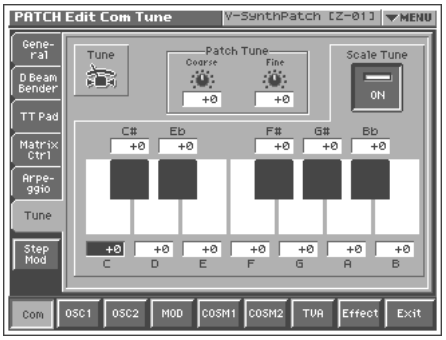
Value: STEP, SMOOTH

Multi Step Modulator menu

In the Multi Step Modulator screen you can touch <▼ MENU > to access the following menu.

Reset Value	Resets the step bar
Invert Value	Inverts the step bar in the vertical direction
Reverse Value	Inverts the step bar in the left/right direction
Shift Value R	Moves the step bar one step toward the right
Shift Value L	Moves the step bar one step toward the left
Preset...	Recalls a preset graph
Copy Graph...	Copies the step bar graph. You can copy a graph between patches or tracks (A–D).
Hand Draw	If this is checked, you can draw the graph by directly touching the step bars with your finger.

Tune



Patch Coarse Tune

Adjusts the pitch of the patch's sound up or down in semitone steps (+/-4 octaves).

Value: -48– +48

Patch Fine Tune

Adjusts the pitch of the patch's sound up or down in 1-cent steps (+/-50 cents).

Value: -50– +50

MEMO

One cent is 1/100th of a semitone.

Scale Tune (Scale Tune Switch)

Turn this on when you wish to use a tuning scale other than equal temperament.

Value: OFF, ON

The V-Synth 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.

MEMO

- One-cent is 1/100th of a semitone.
- The selected scale applies to MIDI messages received from an external MIDI device.

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

Scale Tune C–B

Make scale tune settings.

Value: -100– +100

Modifying Waveforms (OSC1/OSC2)

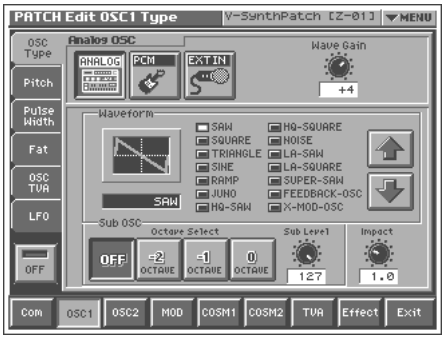
Oscillator Switch ◆

Switches the oscillator on/off.

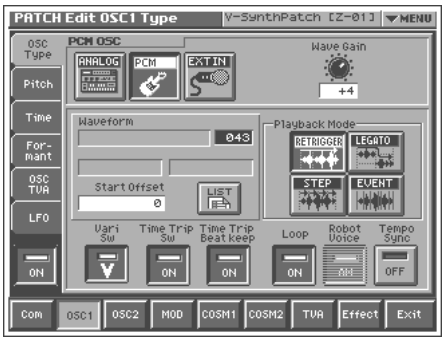
Value: OFF, ON

OSC Type

Analog Oscillator



PCM Oscillator



Oscillator Type

Selects the type of oscillator.

By selecting "EXT IN," the signal that is input through the rear panel INPUT jack can be used as an oscillator. This lets you play the externally input signal from the keyboard.

Value

ANALOG: Analog Oscillator

PCM: PCM Oscillator

EXT IN: External Input Oscillator

Wave Gain

Sets the gain (amplification) of the waveform.

Value: -12– +12 dB

ANALOG OSC

Waveform (Analog Oscillator Waveform)

Selects the wave upon which the sound is to be based when using an analog oscillator.

Value

Waveform	Third tab	Fourth tab
SAW: Sawtooth wave	Pulse Width (p. 87)	Fat (p. 88) / Detune (p. 88) *1
SQUARE: Square wave	Pulse Width (p. 87)	Fat (p. 88) / Detune (p. 88) *1
TRI: Triangle wave	Pulse Width (p. 87)	Fat (p. 88) / Detune (p. 88) *1
SINE: Sine wave	Pulse Width (p. 87)	Fat (p. 88) / Detune (p. 88) *1
RAMP: Ramp wave	Pulse Width (p. 87)	Fat (p. 88) / Detune (p. 88) *1
JUNO: Modulated sawtooth wave	Pulse Width (p. 87)	Fat (p. 88) / Detune (p. 88) *1
HQ-SAW: High quality sawtooth wave	Pulse Width (p. 87)	Fat (p. 88)
HQ-SQUARE: High quality square wave	Pulse Width (p. 87)	Fat (p. 88)
NOISE: Noise wave	Pulse Width (p. 87)	Fat (p. 88)
LA-SAW: LA sawtooth wave *2	Pulse Width (p. 87)	Fat (p. 88) / Detune (p. 88) *1
LA-SQUARE: LA square wave *2	Pulse Width (p. 87)	Fat (p. 88) / Detune (p. 88) *1
SUPER-SAW: Super Saw *3	Detune (p. 88)	Mix (p. 89)
FEEDBACK-OSC: Feedback Oscillator *3	Harmonics (p. 89)	FBK Amount (p. 89)
X-MOD-OSC: Cross Modulation Oscillator *3	X-MOD (p. 90)	Fat (p. 88)

**1 If you use the sub-oscillator (p. 86), the Fat will change to the Detune.*

**2 "LA-SAW" and "LA-SQR" simulate waveforms used in the LA (Linear Arithmetic) sound generator of the Roland D-50. These produce a more mild and fat sound than the conventional "SAW" and "SQR."*

**3 "SUPER-SAW," "FEEDBACK-OSC," and "X-MOD-OSC" simulate waveforms used in the Roland JP-8000/JP-8080. The V-Synth significantly enhances this functionality by letting you control these parameters by an envelope and by applying COSM.*

SUPER-SAW (Super Saw)

This sounds like seven sawtooth waveforms sounding simultaneously. Pitch-shifted sounds are added to a central sound. It is especially suitable for creating thick string-type sounds.

FEEDBACK OSC (Feedback Oscillator)

This sound is similar to electric guitar feedback. It is suitable for creating hard and aggressive sounds that stand out.

X-MOD-OSC (Cross Modulation Oscillator)

Cross Modulation is when OSC2 modify the frequency of OSC1.

Sub-Oscillator (ANALOG)

The sub-oscillator adds a low pitch to create a thicker sound. You can use the Detune parameter to add a detune effect.

MEMO

Detune is the effect or technique of adding (layering) a sound at a slightly different pitch. When using the sub-oscillator, you can apply a detune effect by setting Detune to a value other than "0."

Octave Select (Sub Oscillator Octave Select)

When using the sub-oscillator, this specifies the number of octaves below the basic pitch at which it will be sounded.

Value

OFF: The sub-oscillator will not be used.

-2: The sub-oscillator will be added two octaves below the basic pitch.

-1: The sub-oscillator will be added one octave below the basic pitch.

0: The sub-oscillator will be added at the same pitch as the basic pitch.

NOTE

If you use the sub-oscillator (i.e., when the value is -2, -1, or 0), the Fat parameter will be ignored.

Sub Level (Sub Oscillator Level)

Specifies the volume of the sub oscillator.

Value: 0–127

Impact (Analog Oscillator Impact)

Specifies the sharpness of the attack of the analog oscillator. Higher settings will produce a sharper attack.

Value: 0.0–4.0

PCM OSC

Waveform (PCM Oscillator Waveform)

Selects the wave upon which the sound is to be based when using a PCM oscillator.

Value: 1–999 (wave number)

HINT

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

MEMO

When you select a wave, the wave name, encoding type, and stereo/mono will also be displayed.

Start Offset (PCM Oscillator Start Offset)

Specifies the starting address of the wave.

Value: 0–**

Playback Mode (PCM Oscillator Playback Mode)

Specifies how the wave will be assigned to each key.

Value

RETRIGGER: The sample will play back from the beginning each time you play a key.

LEGATO: When you play legato, the playback point will be synchronized with the currently playing sound.

STEP: Each time you play a key, the sample will play back to the next event (p. 119) and then stop.

EVENT: The sample will be divided at each event and assigned to separate keys. Each time you press a key, the sample will play from the beginning of the corresponding event.

Vari Sw (PCM Oscillator Vari Switch)

Switches whether the sound will be produced using Vari Phrase (ON) or linearly (OFF).

Value: OFF, ON

Time Trip Sw (Time Trip Switch)

Selects whether Time Trip will operate (ON) or not (OFF).

Value: OFF, ON

Beat Keep (Time Trip Beat Keep)

After Time Trip is operated, this selects whether you will "chase" to the beat location where you otherwise would have been if Time Trip had not been operated (ON), or whether this "chase" will not occur (OFF).

Value: OFF, ON

Loop (PCM Oscillator Loop Switch)

Specifies whether the wave will be played as a loop (ON) or not (OFF).

Value: OFF, ON

Robot Voice (PCM Oscillator Robot Voice Switch)

Specifies whether the pitch of the wave will be held steady (ON) or not (OFF).

Value: OFF, ON

Tempo Sync (PCM Oscillator Tempo Sync Switch)

Specifies whether the wave will be sounded in sync with the tempo clock (ON) or not (OFF).

Value: OFF, ON

Pitch

Pitch (Oscillator Pitch) ★◆

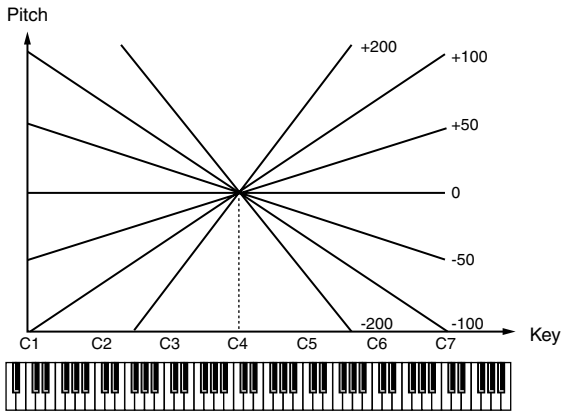
Adjusts the pitch of the oscillator.

Value: -63– +63

Pitch KF (Oscillator Pitch Key Follow)

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.

Value: -200– +200



Coarse (Oscillator Coarse Tune)

Adjusts the pitch of the oscillator up or down in semitone steps (+/-4 octaves).

Value: -48– +48

Fine (Oscillator Fine Tune)

Adjusts the pitch of the oscillator up or down in 1-cent steps (+/-50 cents).

Value: -50– +50

MEMO

One cent is 1/100th of a semitone.

Random (Oscillator Random Pitch Depth)

This specifies the width of random pitch deviation that will occur each time a key is pressed. If you do not want the pitch to change randomly, set this to "0." These values are in units of cents (1/100th of a semitone).

Value: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000, 1100, 1200

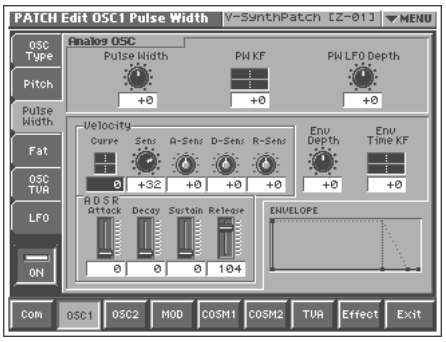
Pit LFO Dp (Oscillator Pitch LFO Depth) ★◆

Specifies how deeply the LFO will affect pitch.

Value: -63– +63

☞ In this screen you can make settings for the envelope that affects the pitch. For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).

Pulse Width (ANALOG)



Pulse Width ★◆

Specifies the amount by which the wave shape will be modified.

Value: -63– +63

PW KF (Pulse Width Key Follow)

Specifies the amount by which the pulse width value will be affected by the key you play.

Value: -200– +200

PW LFO Depth (Pulse Width LFO Depth) ★◆

Specifies how deeply the LFO will affect pulse width.

Value: -63– +63

☞ In this screen you can make settings for the envelope that affects the pulse width. For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).

Fat (ANALOG)

Fat ★◆

Emphasizes the low-frequency region of the sound.

Value: 0–127

Fat KF (Fat Key Follow)

Specifies the amount by which the fat value will be affected by the key you play.

Value: -200– +200

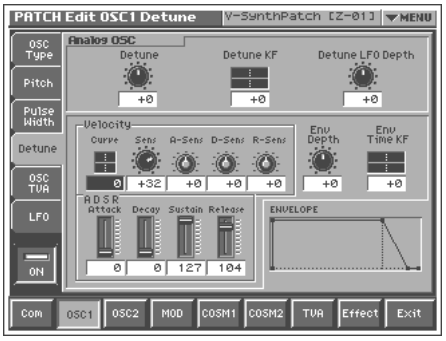
Fat LFO Depth ★◆

Specifies how deeply the LFO will affect fat.

Value: -63– +63

☞ In this screen you can make settings for the envelope that affects the fat. For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).

Detune (ANALOG, when using Sub OSC)



Detune ★◆

Specifies the detuning (pitch difference) of the sub-oscillator. This setting is valid if the Sub-Oscillator Octave Select is set to "-2, -1, or 0."

Value: -63–+63

Detune KF (Detune Key Follow)

Specifies the amount by which the detune value will be affected by the key you play.

Value: -200- +200

Detune LFO Depth ★◆

Specifies how deeply the LFO will affect detune.

Value: -63- +63

☞ In this screen you can make settings for the envelope that affects the detune. For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).

Detune (ANALOG, when SUPER-SAW is selected)

Detune ★◆

Adjust the degree of pitch detuning. As the knob is rotated to the right, the pitch will be detuned more greatly, making the sound more spacious.

Value: -63–+63

Detune KF (Detune Key Follow)

Specifies the amount by which the detune value will be affected by the key you play.

Value: -200- +200

Detune LFO Depth ★◆

Specifies how deeply the LFO will affect detune.

Value: -63- +63

☞ In this screen you can make settings for the envelope that affects the detune. For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).

Mix (ANALOG, when SUPER-SAW is selected)

Mix ★◆

Adjust the volume of the detuned sounds relative to the central sound. As the knob is rotated to the right, the detuned sounds will become louder, making the sound thicker.

Value: -63–+63

Mix KF (Mix Key Follow)

Specifies the amount by which the Mix value will be affected by the key you play.

Value: -200- +200

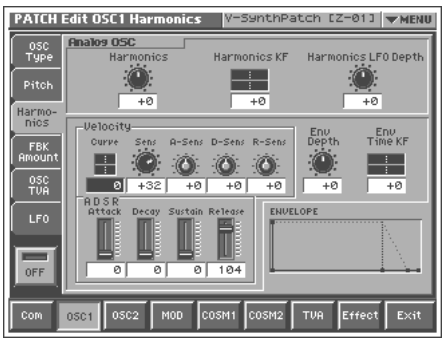
Mix LFO Depth ★◆

Specifies how deeply the LFO will affect Mix.

Value: -63- +63

☞ In this screen you can make settings for the envelope that affects the Mix. For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).

Harmonics (ANALOG, when FEEDBACK-OSC is selected)



Harmonics ★◆

Vary the sound of the harmonics.

Value: -63–+63

Harmonics KF (Harmonics Key Follow)

Specifies the amount by which the Harmonics value will be affected by the key you play.

Value: -200- +200

Harmonics LFO Depth ★◆

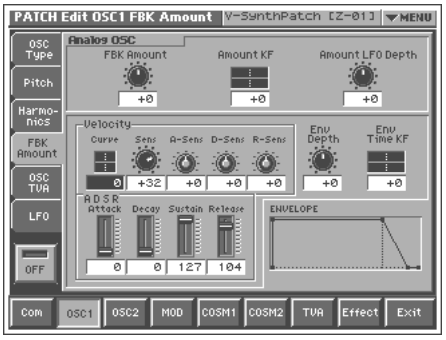
Specifies how deeply the LFO will affect Harmonics.

Value: -63- +63

☞ In this screen you can make settings for the envelope that affects the Harmonics. For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).

HINT You can create distinctive effects by applying an LFO or envelope to HARMONICS or FBK AMOUNT.

FBK Amount (ANALOG, when FEEDBACK-OSC is selected)



FBK Amount (Feedback Amount) ★◆

Adjust the amount of feedback to adjust the level of the harmonics.

Value: -63–+63

Amount KF (Amount Key Follow)

Specifies the amount by which the feedback value will be affected by the key you play.

Value: -200- +200

Amount LFO Depth ★◆

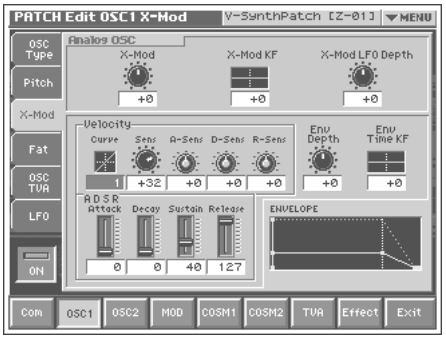
Specifies how deeply the LFO will affect feedback.

Value: -63- +63

☞ In this screen you can make settings for the envelope that affects the feedback. For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).

HINT You can create distinctive effects by applying an LFO or envelope to HARMONICS or FBK AMOUNT.

X-MOD (ANALOG, when X-MOD-OSC is selected)



X-MOD (Cross Modulation Depth) ★◆

Cross Modulation is when OSC2 modify the frequency of OSC1. [X-MOD] adjusts the depth of this Cross Modulation. As the knob is rotated toward the right, the sound of OSC1 will become more complex, with more overtones, and will be suitable for creating metallic sounds and sound effects.

Value: -63–+63

NOTE

"Cross Modulation Depth" can be selected only for OSC1.

NOTE

"Cross Modulation Depth" does nothing if OSC2 is off.

X-MOD KF (X-MOD Key Follow)

Specifies the amount by which the Cross Modulation value will be affected by the key you play.

Value: -200- +200

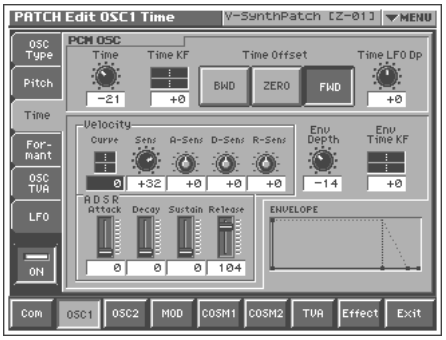
X-MOD LFO Depth ★◆

Specifies how deeply the LFO will affect Cross Modulation.

Value: -63- +63

☞ In this screen you can make settings for the envelope that affects the Cross Modulation. For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).

Time (PCM)



Time ★◆

This sets the range of change in playback speed (time).

Value: -63– +63

<How the Time parameter is related to playback speed>

Time	-40	-20	0	20	40
FWD	Reverse playback	Stop	Normal speed	2x speed	4x speed
ZERO	-2x speed	Reverse playback	Stop	Normal speed	2x speed
BWD	4x speed	-2x speed	Reverse playback	Stop	Normal speed

Time KF (Time Key Follow)

Specifies the amount by which the time value will be affected by the key you play.

Value: -200– +200

Time Offset

Specifies the basic speed for a time value of "0".

Value

BWD: Specifies a backward direction.

ZERO: Specifies a pause.

FWD: Specifies a forward direction.

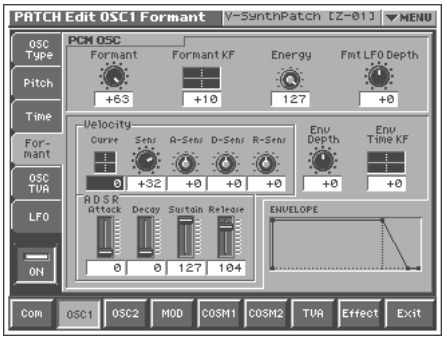
Time LFO Depth ★◆

Specifies how deeply the LFO will affect time.

Value: -63– +63

☞ In this screen you can make settings for the envelope that affects the time. For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).

Formant (PCM)



NOTE

The parameters of this screen are ignored when the Vari switch (p. 86) is off and when the Encode Type (p. 118) is "BACKING" or "ENSEMBLE."

Formant ★◆

This sets the range of change in vocal quality (formant).

Value: -63– +63

Formant KF (Formant Key Follow)

Specifies the amount by which the formant value will be affected by the key you play.

Value: -200– +200

Energy

Specifies how much the fundamental pitch will be emphasized in order to make the sound more well-defined. Set this to "OFF" if you do not want to use the Energy parameter.

Value: OFF, 1–127

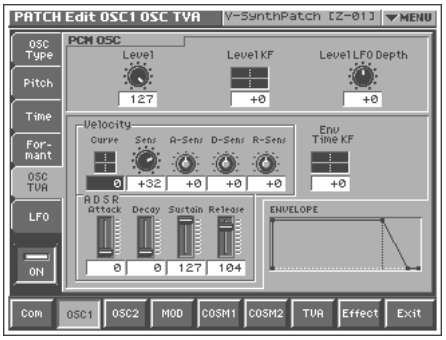
Fmt LFO Depth (Formant LFO Depth) ★◆

Specifies how deeply the LFO will affect formant.

Value: -63– +63

☞ In this screen you can make settings for the envelope that affects the formant. For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).

OSC TVA



Level ★◆

Specifies the volume of the oscillator.

Value: 0–127

Level KF (Level Key Follow)

Use this parameter if you want the volume of the oscillator to change according to the key that is pressed. Relative to the volume at the C4 key (center C), positive (+) settings will cause the volume to rise for notes higher than C4, and negative (-) settings will cause the volume to fall for notes higher than C4. Larger settings will produce greater change.

Value: -200– +200

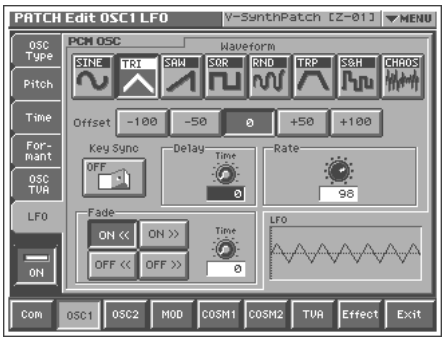
Level LFO Dp (Level LFO Depth) ★

Specifies how deeply the LFO will affect the volume of the oscillator.

Value: -63– +63

☞ In this screen you can make settings for the envelope that affects the sub TVA. For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).

LFO



☞ In this screen you can make settings for the LFO that affects the oscillator. For details on LFO settings, refer to **"Making LFO Settings"** (p. 95).

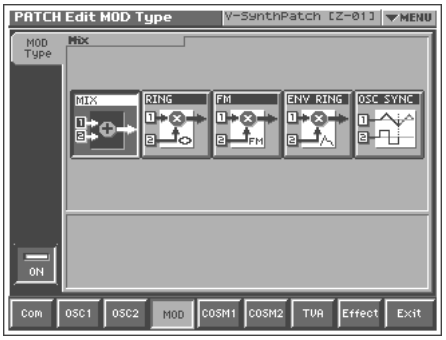
Mixing/Modulating Two Sounds (MOD)

Modulator Switch ◆

Switches the modulator on/off.

Value: OFF, ON

Mod Type



Modulator Type

Selects the type of modulator.

Value

MIX: Add OSC1 and OSC2.

RING: Use OSC2 to apply ring modulation to OSC1.

FM: Use OSC2 to apply FM (frequency modulation) to OSC1.

ENV RING: Use the envelope of OSC2 to control the volume of OSC1.

OSC SYNC: Synchronize the output waveform of OSC1 to the output waveform of OSC2.

NOTE

OSC SYNC is valid only when OSC2 is an analog oscillator.

Original Level (Modulator Original Level)

Specifies the volume for the original sound of OSC1.

Value: 0–127

MEMO

This can be set if Modulator Type is set to "RING" or "FM."

Attack (Modulator Attack Time)

Specifies the attack time of the OSC2 envelope.

Value: 0–127

MEMO

This can be set if Modulator Type is set to "ENV RING."

Release (Modulator Release Time)

Specifies the release time of the OSC2 envelope.

Value: 0–127

MEMO

This can be set if Modulator Type is set to "ENV RING."

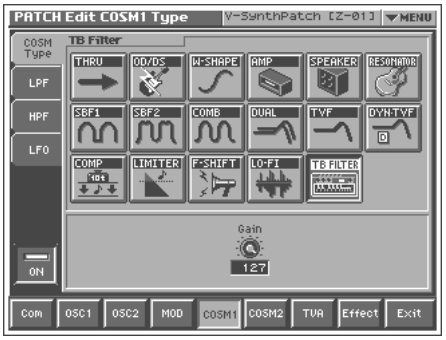
Applying Various Effects to Each Note You Play (COSM1/COSM2)

COSM Switch ◆

Switches the COSM on/off.

Value: OFF, ON

COSM Type



CO SM Type

Use this parameter to select from among the 16 available COSMs. For details on COSM parameters, refer to **"COSM Parameters"** (p. 161).

Value: THRU, OD/DS, W-SHAPE, AMP, SPEAKER, RESONATOR, SBF1/2, COMB, DUAL, TVF, DYN-TVF, COMP, LIMITER, F-SHIFT, LO-FI, TB FILTER

LFO

For some COSM selections that you choose in COSM Type, you can make LFO settings. For details on LFO settings, refer to **"Making LFO Settings"** (p. 95).

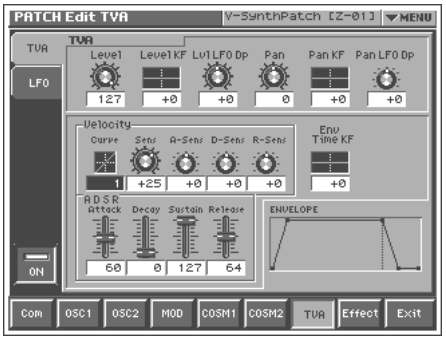
Adjusting the Volume and Pan (TVA)

TVA Switch ◆

Switches the TVA on/off.

Value: OFF, ON

TVA



Level ★

Specifies the volume of the patch.

Value: 0–127

Level KF (Level Key Follow)

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 C4 key (center C), positive (+) settings will cause the volume to rise for notes higher than C4, and negative (-) settings will cause the volume to fall for notes higher than C4. Larger settings will produce greater change.

Value: -200– +200

Lvl LFO Dp (Level LFO Depth) ★

Specifies how deeply the LFO will affect the volume of the patch.

Value: -63– +63

Pan

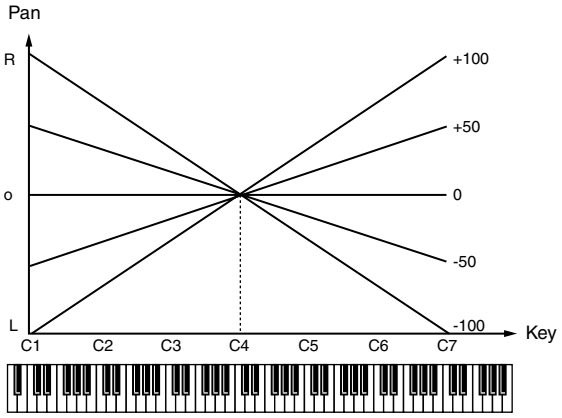
Specifies the pan of the patch. "L64" is far left, "0" is center, and "63R" is far right.

Value: L64–0–63R

Pan KF (Pan Key Follow)

Use this parameter if you want key position to affect panning. Positive (+) settings will cause notes higher than C4 key (center C) to be panned increasingly further toward the right, and negative (-) settings will cause notes higher than C4 key (center C) to be panned toward the left. Larger settings will produce greater change.

Value: -200– +200



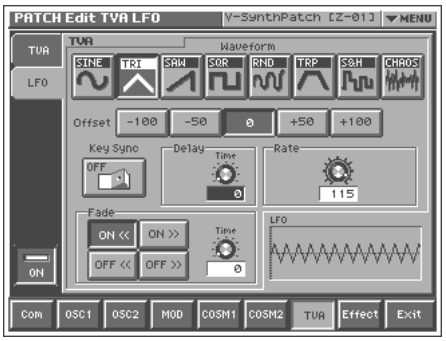
Pan LFO Dp (Pan LFO Depth) ★

Specifies how deeply the LFO will affect the pan.

Value: -63– +63

☞ In this screen you can make settings for the envelope that affects the TVA. For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).

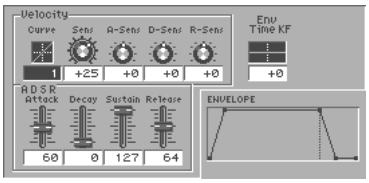
LFO



☞ In this screen you can make settings for the LFO that affects the TVA. For details on LFO settings, refer to **"Making LFO Settings"** (p. 95).

Making Envelope Settings

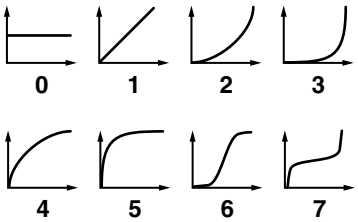
This section explains the envelope setting screens.



Velocity Curve (Envelope Velocity Curve)

Choose from the following seven curves to specify how your keyboard playing strength will affect the envelope depth. If you don't want your keyboard playing strength to affect the envelope depth, set this to "0".

Value: 0–7



Velocity Sens (Envelope Velocity Sensitivity)

Keyboard playing dynamics can be used to control the depth of the envelope. If you want the envelope to have more effect for strongly played notes, set this parameter to a positive (+) value. If you want the pitch envelope to have less effect for strongly played notes, set this to a negative (-) value.

Value: -63– +63

Velocity A-Sens (Envelope Attack Time Velocity Sensitivity)

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.

Value: -63– +63

Velocity D-Sens (Envelope Decay Time Velocity Sensitivity)

This allows keyboard dynamics to affect the decay time of the envelope. If you want decay 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.

Value: -63– +63

Velocity R-Sens (Envelope Release Time Velocity Sensitivity)

The parameter to use when you want key release speed to control the release time value of the envelope. If you want release time to be speeded up for quickly released notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value.

Value: -63– +63

ADSR Attack (Envelope Attack Time) ★◆

Specifies the attack time of the envelope (the time from when you press a key until the envelope level reaches the maximum value).

Value: 0–127, Note

ADSR Decay (Envelope Decay Time) ★◆

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).

Value: 0–127, Note

ADSR Sustain (Envelope Sustain Level) ★

Specifies the sustain level of the envelope (the level at which the envelope remains constant).

Value: 0–127

ADSR Release (Envelope Release Time) ★◆

Specifies the release time of the envelope (the time from when you release a key until the envelope level reaches 0).

Value: 0–127, Note

MEMO

"ENVELOPE" in the lower right of the screen shows a graphical representation of the envelope produced by the current settings.

Env Depth (Envelope Depth)

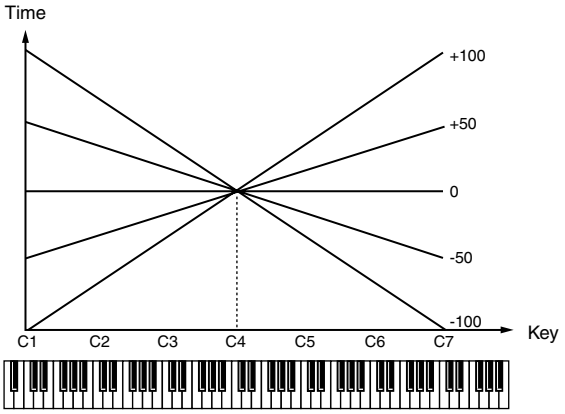
Specifies the depth of the envelope. Higher settings will cause the envelope to produce greater change. Negative (-) settings will invert the shape of the envelope.

Value: -63– +63

Env Time KF (Envelope Time Key Follow)

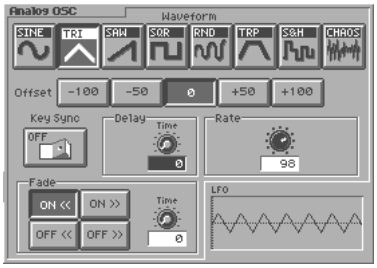
Make this setting when you want the decay time and subsequent times of the envelope to be affected by the location of the key you play. Based on the envelope times for the C4 key (center C), positive (+) settings will cause notes higher than C4 to have increasingly shorter times, and negative (-) settings will cause them to have increasingly longer times. Larger settings will produce greater change.

Value: -200– +200



Making LFO Settings

This section explains the LFO setting screens.



Waveform (LFO Waveform)

Selects the waveform of the LFO.

Value

SIN: Sine wave

TRI: Triangle wave

SAW: Sawtooth wave

SQR: Square wave

RND: Random wave

TRP: Trapezoidal wave

S&H: Sample & Hold wave (one time per cycle, LFO value is changed)

CHAOS: Chaos wave

MEMO

"LFO" in the lower right of the screen shows a wave graphic that corresponds to the current settings.

Offset (LFO Offset)

Raises or lowers the LFO waveform relative to the central value. Positive (+) settings will move the waveform so that modulation will occur from the central value upward. Negative (-) settings will move the waveform so that modulation will occur from the central value downward.

Value: -100, -50, 0, +50, +100

Key Sync (LFO Key Sync Switch)

This specifies whether the LFO cycle will be synchronized to begin when the key is pressed (ON) or not (OFF).

Value: OFF, ON

Delay Time (LFO Delay Time)

Delay Time (LFO Delay Time) specifies the time elapsed before the LFO effect is applied (the effect continues) after the key is pressed (or released).

Value: 0–127

☞ After referring to **"How to Apply the LFO"** (p. 96), change the setting until the desired effect is achieved.

Rate (LFO Rate) ★◆

Adjusts the modulation rate, or speed, of the LFO.

Value: 0–127, Note

LFO Rate sets the beat length for the synchronized tempo when the tempo that specifies the LFO cycle (Patch Tempo) is synchronized with the tempo set in a external sequencer.

(Example)

For a tempo of 120 (120 quarter notes occur in 1 minute (60 seconds))

Setting	Delay time
𝅗𝅥 (half note)	1 second (60 / 60 =1 (second))
♩ (quarter note)	0.5 seconds (60 / 120= 0.5 (seconds))
♪ (eighth note)	0.25 seconds (60 / 240= 0.25 (seconds))

NOTE

This setting will be ignored if the Waveform parameter is set to "CHAOS."

MEMO

"LFO" in the lower right of the screen shows a diagram of the wave cycle that corresponds to the current settings.

Fade Mode (LFO Fade Mode)

Specifies how the LFO will be applied.

Value: ON <<, ON >>, OFF <<, OFF >>

☞ After referring to **"How to Apply the LFO"** (p. 96), change the setting until the desired effect is achieved.

Fade Time (LFO Fade Time)

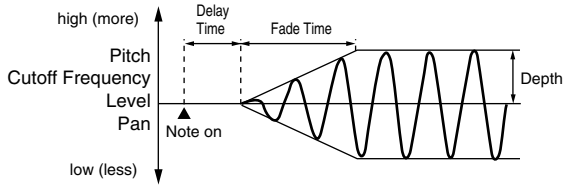
Specifies the time over which the LFO amplitude will reach the maximum (minimum).

Value: 0–127

☞ After referring to **"How to Apply the LFO"** (p. 96), change the setting until the desired effect is achieved.

How to Apply the LFO

● Apply the LFO gradually after the key is pressed

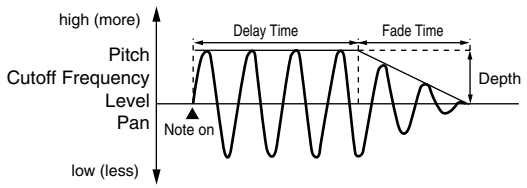


Fade Mode: ON <<

Fade Time: The time over which the LFO amplitude will reach the maximum after the Delay Time has elapsed.

Delay Time: The time from when the keyboard is played until the LFO begins to be applied.

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

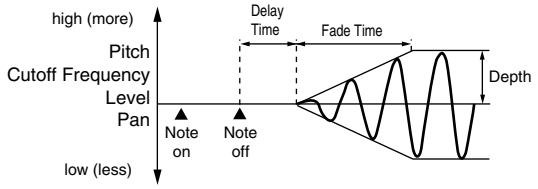


Fade Mode: ON >>

Fade Time: The time over which the LFO amplitude will reach the minimum after the Delay Time has elapsed.

Delay Time: The time that the LFO will continue after the keyboard is played.

● Apply the LFO gradually after the key is released

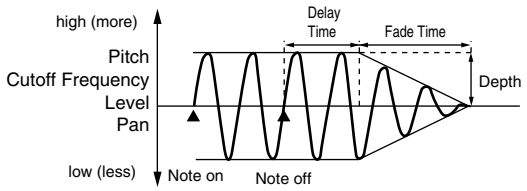


Fade Mode: OFF <<

Fade Time: The time over which the LFO amplitude will reach the maximum after the Delay Time has elapsed.

Delay Time: The time from when the keyboard is released until the LFO begins to be applied.

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



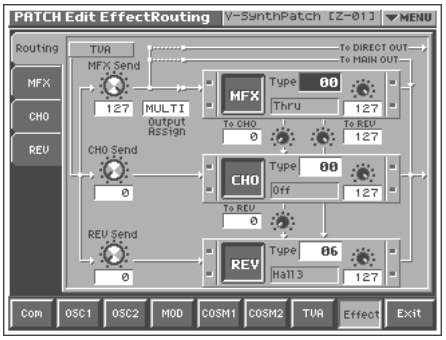
Fade Mode: OFF >>

Fade Time: The time over which the LFO amplitude will reach the minimum after the Delay Time has elapsed.

Delay Time: The time that the LFO will continue after the keyboard is released.

Setting Effects for a Patch (Effect)

Routing



MFX Send (MFX Send Level) ★

Sets the level of the signal sent to MFX.

Value: 0–127

CHO Send (Chorus Send Level) ★

Sets the level of the signal sent to chorus.

Value: 0–127

REV Send (Reverb Send Level) ★

Sets the level of the signal sent to reverb.

Value: 0–127

Output Assign

Sets the direct sound's output method.

Value

MULTI: Output in stereo through MFX. You can also apply chorus or reverb to the sound that passes through MFX.

MAIN: Output to the MAIN OUT jacks in stereo without passing through MFX.

DIR: Output to the DIRECT OUTjacks in stereo without passing through MFX. Make this setting when you want to use external effects.

MFX (MFX On/Off Switch) ◆

Switches MFX on and off.

Value: MFX (OFF), MFX (ON)

MFX Type

Use this parameter to select from among the 41 available MFX. For details on MFX parameters, refer to **"MFX Parameters"** (p. 166).

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: CHO (OFF), CHO (ON)

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. 188).

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: REV (OFF), REV (ON)

REV Type (Reverb Type)

Use this parameter to select from among the 10 available reverb. For details on reverb parameters, refer to **"Reverb Parameters"** (p. 188).

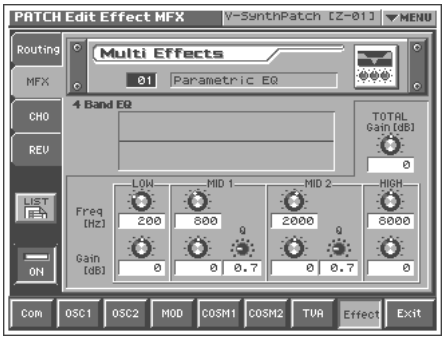
Value: 00 (Off)–10

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. 166).

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. 166).

HINT

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

MFX Switch

Switches the MFX on/off.

Value: OFF, ON

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. 188).

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. 188).

HINT

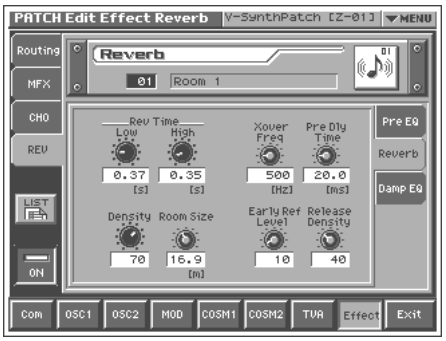
When you touch <List>, the Chorus List window will appear, allowing you to select the chorus from the list.

Chorus Switch

Switches the Chorus on/off.

Value: OFF, ON

REV



REV Type (Reverb Type)

Use this parameter to select from among the 10 available reverb. For details on reverb parameters, refer to **"Reverb Parameters"** (p. 188).

Value: 00 (Off)–10

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. 188).

HINT

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

Reverb Switch

Switches the Reverb on/off.

Value: OFF, ON

Zone Settings (Zone)

V-Synth lets you divide the keyboard into as many as sixteen zones, with each zone playing a different sound.

MEMO

The zone is shown in the upper right of the PATCH PLAY screen or EDIT screen. To move between zones, hold down [SHIFT] and use the left/right cursor ([◄], [►]) keys.

MEMO

By holding down [SHIFT] and playing the keyboard, you can switch to the zone that includes that note-on.

* *You can't switch zones by playing more than one key while you hold down [SHIFT]. You'll need to release [SHIFT] and press it again each time you play the keyboard.*

* *This function will not operate if the arpeggiator is on.*

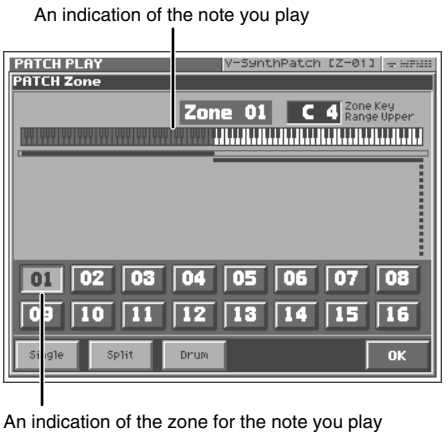
MEMO

The following patch settings are applied in common to each of the individual sounds that are divided by zone.

- Common group settings (except for Structure Type)
- Effect group settings for MFX, Chorus, and Reverb type, and effect settings

Splitting the Keyboard to Play Different Sounds (Split)

A patch that contains settings to play different patches in each keyboard zone is called a **split patch**. Here's how to create a split patch.



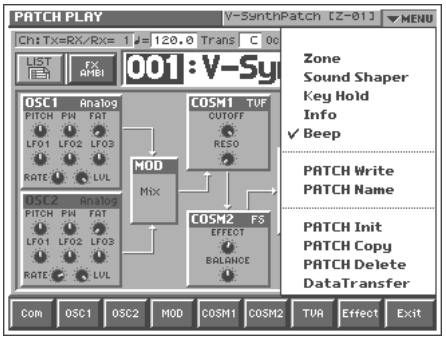
1. **Access the PATCH PLAY screen, and select the patch whose settings you wish to modify (p. 58).**

HINT

If you want to create all your patches from the ground up, rather than the patches that have already been prepared, carry out the **Initialize** operation (p. 72).

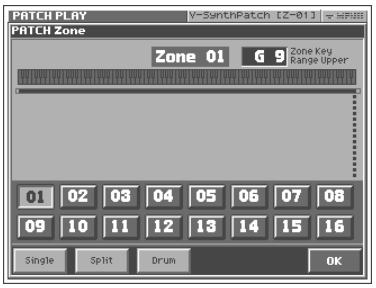
2. Touch <▼ MENU> in the upper right of the screen.

A pulldown menu appears.



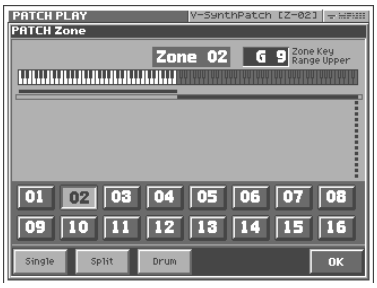
3. In the pulldown menu, touch <Zone>.

The PATCH Zone window appears.



4. In the lower part of the screen, touch <Split>.

A window like the following appears.



5. Touch <01>.

Zone 01 will be selected, and the top note number of zone 01 will be displayed in the upper right of the screen.

6. Specify the split point between zones 01 and 02. Either turn the VALUE dial or use [INC/+][DEC/-] to specify the note number.

HINT

If you want to divide the keyboard into three zones, lower the top note of zone 02, and specify the split point between zones 02 and 03. By lowering the top note of the highest zone in this way, you can add more zones. You can specify a maximum of sixteen zones.

7. Touch <OK>.

The zones will be established, and you will return to the PATCH PLAY screen.

8. In this state, zone 01 is selected. Specify the sound that you want to play in zone 01.

9. After you have specified the sound that you want to play in zone 02, next specify the sound for zone 02.

The zone is shown in the upper right of the PATCH PLAY screen or EDIT screen. To move between zones, hold down [SHIFT] and use the left/right cursor ([◄], [►]) keys.

MEMO

By holding down [SHIFT] and playing the keyboard, you can switch to the zone that includes that note-on.

* *You can't switch zones by playing more than one key while you hold down [SHIFT]. You'll need to release [SHIFT] and press it again each time you play the keyboard.*

* *This function will not operate if the arpeggiator is on.*

10. Specify the sound that you want to play in zone 02.

In this way you can create a patch that plays different sounds on either side of the split point you specified in step 6.

MEMO

Each zone works just like a single patch. You can create the sound for a zone from scratch in the same way as for a patch, as described in the procedure "Creating a patch" (p. 71). If you want to assign a different patch sound to a zone, use Patch Copy (p. 72) to copy the patch settings to the desired zone.

MEMO

The following patch settings are applied in common to each of the individual sounds that are divided by zone.

- Common group settings (except for Structure Type)
- Effect group settings for MFX, Chorus, and Reverb type, and effect settings

11. To save the patch you created, perform the Write operation (p. 73).

Creating a Drum Patch (Drum)

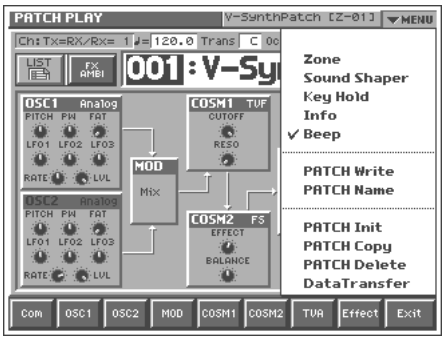
By dividing the keyboard into sixteen zones and assigning a percussion instrument sound to each zone, you can create a patch that lets you play drums. Such a patch is called a **drum patch**.
You can think of a drum patch as a group containing various percussion instrument sounds. Since percussion instrument sounds are not usually used to play melodies, you do not need to be able to use the keyboard to play a scale.

1. **Access the PATCH PLAY screen, and select the patch whose settings you wish to modify (p. 58).**

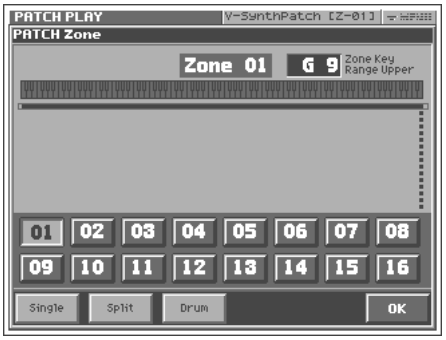
HINT

If you want to create all your patches from the ground up, rather than the patches that have already been prepared, carry out the **Initialize** operation (p. 72).

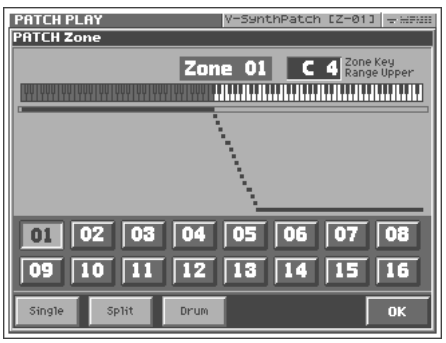
2. **Touch <▼ MENU> in the upper right of the screen.**
   A pulldown menu appears.



3. **In the pulldown menu, touch <Zone>.**
   The PATCH Zone window appears.



4. **In the lower part of the screen, touch <Drum>.**
   A window like the following appears.



5. **To change the split point of each zone, refer to the procedure described in the preceding section, "Splitting the Keyboard to Play Different Sounds (Split)."**

6. **Specify the sounds (percussion instrument sounds) that you want to play in each zone. For the procedure, refer to the procedure described in the preceding section, "Splitting the Keyboard to Play Different Sounds (Split)."**
   In this way you can create a patch that plays various percussion instrument sounds when you press different notes of the keyboard.

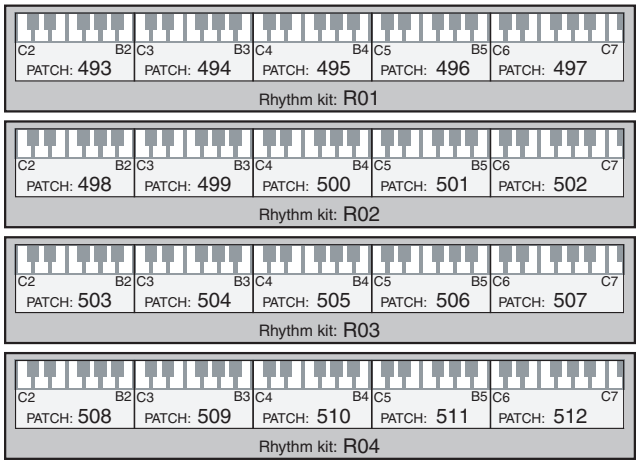
7. **To save the patch you created, perform the Write operation (p. 73).**

Creating a Rhythm Kit (Rhythm Mode)

Rhythm mode lets you assign a different V-Synth sound to each note of the keyboard. This means that you can play numerous different sounds from the keyboard, just as when using a rhythm kit like those often provided by synthesizer sound generators. Since the sound assigned to each key is a fully editable V-Synth sound, you can have a variety of sounds ranging from analog-style kicks to VariPhrase drum loops all standing by for immediate play.

The concept of a Rhythm Kit

The rhythm kits you play in Rhythm mode let you assign different sounds to each of the 61 notes. Each rhythm kit consists of up to five Drum Patches (p. 100).



* *As shown in the illustration, rhythm kits use patches number 493 and follows. Refer to the above illustration for the patch numbers used by each rhythm kit.*

MEMO

A drum patch (p. 100) lets you specify up to sixteen zones of rhythm instrument sounds. To play these in Rhythm mode, you will use one octave of notes (12 notes) for each drum patch. However, as shown in the above illustration, the C6–C7 patch uses thirteen notes as an exception.

MEMO

The following patch settings are shared by the sounds you specify for each note.

- Arpeggiator settings
- MFX, chorus, and reverb types and effect parameter settings in the Effect group

These settings are saved in the first drum patch of the rhythm kit.

NOTE

In Rhythm mode, you can use eleven parts (non-rhythm parts) simultaneously. For this reason, the **"Part MIDI"** (p. 125) setting functions as follows.

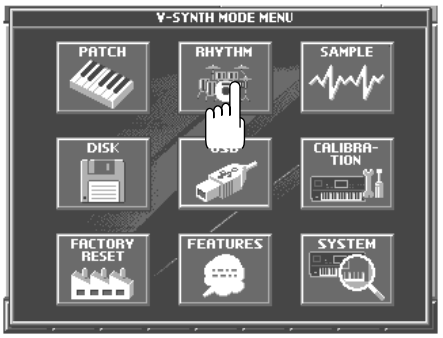
- Part 1: The MIDI receive channel of the Rhythm part
- Part 2–12: Other parts (non-rhythm parts)
- Part 13–16: Not used

NOTE

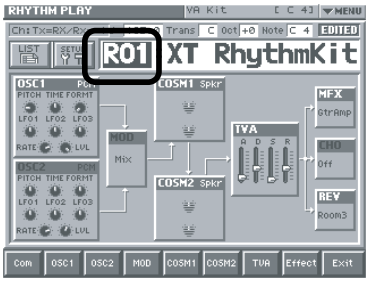
When you're using Rhythm mode, the effect you specify for the Rhythm part will also be applied to the other parts (non-rhythm parts) you're using.

Playing in Rhythm mode

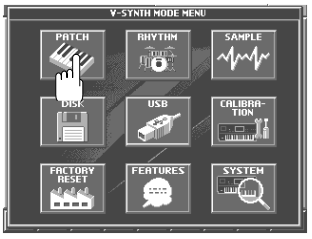
1. **Press [MODE].**
2. **In the V-SYNTH MODE MENU window that appears, touch < RHYTHM >.**



3. **Use the keyboard or an external MIDI device to play the rhythm kit.**
4. **To switch rhythm kits, touch the area where the patch number is displayed to highlight it, then turn the VALUE dial or use [INC/+][DEC/-].**



5. **To exit RHYTHM mode, press [MODE], and then touch < PATCH > in the V-SYNTH MODE MENU window that appears.**

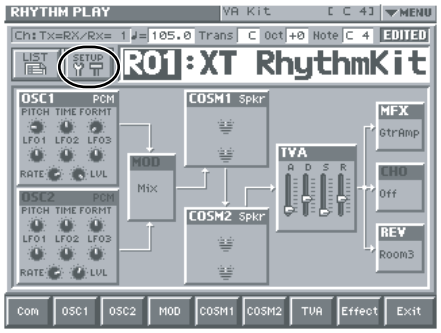


Creating a Rhythm Kit

In Rhythm mode, the level, panpot, and MFX (multi-effect)/chorus/reverb send levels for each note can all be edited conveniently in the Setup screen.

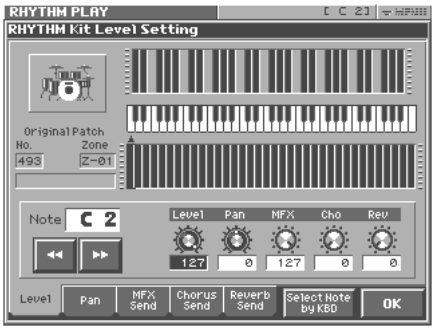
1. Access the RHYTHM PLAY screen, and select the rhythm kit whose settings you want to edit.

2. Touch < SETUP >



MEMO

Or, in the upper right of the RHYTHM PLAY screen, touch <▼ MENU >, and then touch < SETUP > in the pulldown menu.
The Setting window will appear.

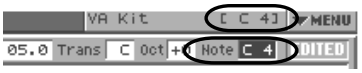


In this screen, the level, panpot, and MFX (multi-effect)/chorus/reverb send levels for each note can be conveniently edited together.

- [◂◂ ▸▸] buttons: move between notes.
- Level, Pan, MFX, Cho, Rev knobs:
  Edit the level, panpot, and MFX (multi-effect)/chorus/reverb send levels of each note.
- Level, Pan, MFX, Cho, Rev tabs:
  Switch the on-screen graph between level, panpot, or MFX (multi-effect)/chorus/reverb send levels.
- If you turn on the < Select Note by KBD > located at the bottom of the screen, the note you play on the keyboard will be selected.

3. Touch < OK >.

The note is determined, and you're returned to the RHYTHM PLAY screen.
In Rhythm mode, the current note is shown in the upper right of the RHYTHM PLAY screen.



MEMO

You can also switch between notes by holding down [SHIFT] and using the left/right cursor ([◄], [►]) keys.

MEMO

You can also switch notes by holding down [SHIFT] and playing the keyboard.

* *You can't switch notes by playing more than one key while you hold down [SHIFT]. You'll need to release [SHIFT] and press it again each time you play the keyboard.*

* *This function will not operate if the arpeggiator is on.*

4. In this state, the note C4 is selected. Specify the sound that you want the C4 note to play.

5. When you've specified a sound for the C4 note, you can then specify the sound for another note.

6. In this way, make settings for all of the notes you want to use.

7. If you want to save the rhythm kit you created, perform the same Save procedure as for a patch (p. 74).

Creating and Editing Samples (Sample Mode)

In this chapter, we will explain the procedures for:

- Sampling (p. 103)
- Editing samples (p. 112)
- Converting samples so the VariPhrase function can be used (Encoding) (p. 117)

☞ For details on loading samples, refer to p. 133.

Sampling

Settings Before You Sample (What Is a Template?)

A sampling template is something that holds a collection of settings for sampling (the setup settings, pre-effect settings, and metronome settings described below).

You can store eight different sampling templates. When you sample, you will always select one of these eight templates.

With the factory settings, eight sampling templates are preset.

☞ For details on modifying the settings, refer to **"Sampling Procedure"** (p. 104).

MEMO Sampling templates are system settings (with the exception of some metronome parameters). They are remembered even when you turn off the power. If you wish to restore all eight sampling templates to the factory settings, perform the Factory Reset operation (p. 147).

Applications of Each Template

The preset templates cover different input settings and pre-effect types.

Mic	Sample in mono from a mic. Connect a mic to the rear panel INPUT jack, and set GAIN switch to "MIC."
Line	Sample in stereo from a CD. Connect your CD player to the rear panel INPUT jacks, and set GAIN switch to "LINE."
Coaxial	Sample a digital signal. Connect your audio device to the rear panel COAXIAL IN connector.
Resampl	Play a sample on the V-Synth and sample the result. This is called "resampling." For details on resampling, refer to p. 108.
Comp	Use the compressor pre-effect. The sample will be re-corded from the rear panel INPUT jacks.
Limiter	Use the limiter pre-effect. The sample will be recorded from the rear panel INPUT jacks.
MIDI	Start sampling when a sequencer start (system realtime message: FA) is received. The sample will be recorded from the rear panel INPUT jacks.
USB (XT)	Sampling from a PC USB Audio. * *This template is the same as that on the "V-Synth XT," which has USB Audio capability. Since the V-Synth does not have USB Audio capability, the analog input will automatically be selected as the source if you choose "USB (XT)."*

Factory Settings of Each Template

Setup	Mic	Line	Coaxial	Resampl
SamplingType	1 (MIX)	0 (Stereo)	0 (Stereo)	0 (Stereo)
InputSource	0 (Analog)	0 (Analog)	2 (Coaxial)	3 (Resam-pling)
TriggerMode	0 (Manual)	2 (Level)	2 (Level)	3 (Note)
TriggerLevel	-12 (dB)	-12 (dB)	-24 (dB)	-12 (dB)
PreTrigger	0 (0msec)	0 (0msec)	0 (0msec)	0 (0msec)
PreGain	0 (0dB)	0 (0dB)	0 (0dB)	0 (0dB)
PreFxType	0 (off)	0 (off)	0 (off)	0 (off)
PreFxCS-Sus	0	0	0	0
PreFxCS-Atk	0	0	0	0
PreFxCS-Tone	0	0	0	0
PreFxCS-Lvl	0	0	0	0
PreFxLM-Thr	-48	-48	-48	-48
PreFxLM-Rel	0	0	0	0
PreFxLM-Rati	0	0	0	0
PreFxLM-Tone	0	0	0	0
PreFxLM-Lvl	0	0	0	0
PreFxNS-Thr	-60	-60	-60	-60
PreFxNS-Rel	0	0	0	0
CountIN	1 (1MES)	0 (0MES)	0 (0MES)	1 (1MES)
MetroType	1 (REC)	1 (REC)	1 (REC)	1 (REC)

Setup	Comp	Limiter	MIDI	USB (XT)
SamplingType	0 (Stereo)	0 (Stereo)	0 (Stereo)	0 (Stereo)
InputSource	0 (Analog)	0 (Analog)	0 (Analog)	4 (USB) *
TriggerMode	0 (Manual)	0 (Manual)	1 (MIDI)	2 (Level)
TriggerLevel	-12 (dB)	-12 (dB)	-12 (dB)	-24 (dB)
PreTrigger	0 (0msec)	0 (0msec)	0 (0msec)	0 (0msec)
PreGain	0 (0dB)	0 (0dB)	0 (0dB)	0 (0dB)
PreFxType	1 (COMP)	2 (LIMIT)	0 (off)	0 (off)
PreFxCS-Sus	64	0	0	0
PreFxCS-Atk	12	0	0	0
PreFxCS-Tone	0	0	0	0
PreFxCS-Lvl	0	0	0	0
PreFxLM-Thr	-48	-36	-48	-48
PreFxLM-Rel	0	80	0	0
PreFxLM-Rati	0	2	0	0
PreFxLM-Tone	0	0	0	0
PreFxLM-Lvl	0	0	0	0
PreFxNS-Thr	-60	-60	-60	-60
PreFxNS-Rel	0	0	0	0
CountIN	1 (1MES)	1 (1MES)	0 (0MES)	0 (0MES)
MetroType	1 (REC)	1 (REC)	1 (REC)	1 (REC)

* *This template is the same as that on the "V-Synth XT," which has USB Audio capability. Since the V-Synth does not have USB Audio capability, the analog input will automatically be selected as the source if you choose "USB (XT)."*

Sampling Procedure

Here's how to input a sound from the input jacks and sample it. For resampling, refer to the following section.

The V-Synth has the following input jacks.

- INPUT L, R (GAIN: MIC/LINE)
- DIGITAL AUDIO INTERFACE
  - OPTICAL IN
  - COAXIAL IN

Use the input jack that is appropriate for your situation.

- Monaural sampling from a mic → INPUT L, R (GAIN: MIC)
- Sampling from an analog source → INPUT L, R (GAIN: LINE)
- Sampling from a digital source → OPTICAL IN or COAXIAL IN

NOTE

Howling could be produced depending on the location of microphones relative to speakers. This can be remedied by:

1. Changing the orientation of the microphone(s).
2. Relocating microphone(s) at a greater distance from speakers.
3. Lowering volume levels.

When sampling, you must make sure that the following two items are set correctly. If these two settings are incorrect, the sample will not be recorded as you intend.

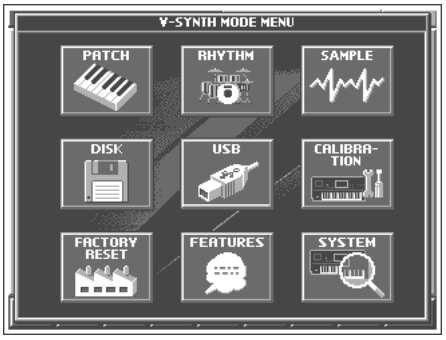
- What type of sample are you recording? (stereo or mono)
  → In the SAMPLING General screen, set Sampling Type.
- Which input are you sampling from? (select the input jack)
  → In the SAMPLING General screen, set Input Source.

MEMO

If you have set the metronome (p. 110), the metronome sound will be output from the DIRECT OUT jack during sampling. However, the sound that is assigned to the DIRECT OUT jack (p. 96) will not be output.

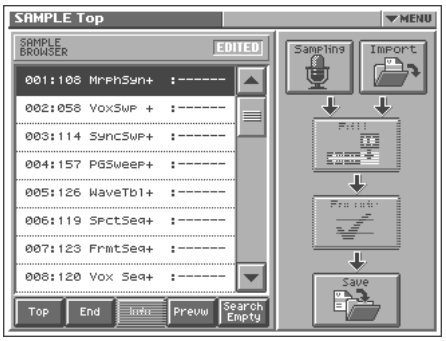
1. Press [MODE].

The V-SYNTH MODE MENU window appears.



2. Touch <SAMPLE>.

The SAMPLE Top screen appears.



3. Select the location (sample number) that you wish to sample.

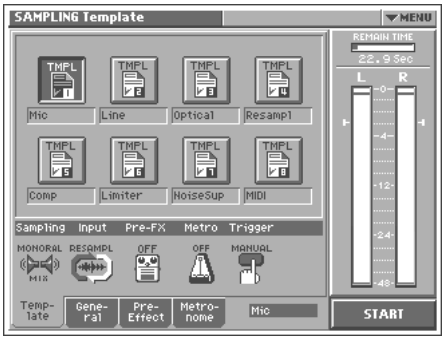
Move the cursor to the desired sample. Normally, you will select a sample that has no wave; i.e., a sample number whose name is "NO SAMPLE."

In this screen you can use the following functions.

- Select a sample by directly touching it.
- Change the number in steps of eight by pressing [◄][►].
- Change the number in steps of one by touching <▲><▼> located beside the sample list, by pressing [▲][▼][INC/+][DEC/-], or by turning the VALUE dial.
- Scroll the sample list by dragging the scroll bar located beside the sample list up or down.
- Move to the number 001 sample by touching <Top>.
- Move to the number 999 sample by touching <End>.
- Display information on the currently selected sample by touching <Info> (p. 111). However, this information will not be displayed for the factory-set waves.
- Audition the currently selected sample by touching <Prevw>.
- When you touch <Search Empty>, you will jump to the "NO SAMPLE" sample number that follows the current sample number.

4. Touch <Sampling>.

The SAMPLING Template screen appears.



5. Touch <TMPL 1>–<TMPL 8> to select a sampling template.

If you want to modify the settings of the selected sampling template, perform the following steps 6–8.

6. Touch one of the tabs displayed at the bottom of the screen to access the corresponding setting screen.

<General>: Setup settings (p. 108)

<Pre-Effect>: Pre-effect settings (p. 109)

<Metronome>: Metronome settings (p. 110)

☞ For details on each parameter, refer to the page references given.

7. In each setting screen, touch the touch panel to set the parameters.

☞ For details on operations in the touch panel, refer to **"Basic Touch Screen Operation"** (p. 23).

8. To set the value of a parameter, move the cursor to the value box of the parameter that you want to edit. Then adjust the value by turning the VALUE dial or by using [INC/+] [DEC/-]. You can also adjust the value by dragging on the touch screen.

9. Adjust the sampling level.

Adjust the volume of the device that is producing the sound.

When sampling from the INPUT jacks, adjust the level by turning the front panel INPUT knob or setting the rear panel GAIN switch.

If you are sampling from the DIGITAL AUDIO INTERFACE IN connector, use the setup Pre-gain (p. 109) or the pre-effect Output Level (p. 109, p. 110) settings to adjust the level.

10. Touch <START> to start sampling.

The way in which sampling will start depends on the Trigger Mode setting in the SAMPLING General screen, as follows.

If "MANUAL" is selected, sampling will start after a count of the number of measures specified by the metronome Count-In setting.

If "MIDI" is selected, sampling will wait for the sequencer to start (system realtime message: FA). Sampling will begin when the sequencer start message is received.

If "LEVEL" is selected, sampling will wait for an input signal. Sampling will begin when the input signal exceeds the level specified by Trigger Level (p. 109).

If "NOTE" is selected, Sampling will begin when you play the keyboard or note message is received.

HINT

If you have selected "MIDI" or "LEVEL," you can touch <START> once again to begin sampling without waiting for the sequencer to start or the input signal to be received.

MEMO

In the SAMPLING window, "Remain Time" indicates the remaining time (in seconds) available for sampling.

NOTE

If memory becomes full, sampling will be halted. If this occurs, delete unneeded samples from memory (p. 108).

11. When you are finished sampling, touch <STOP>.

The display will indicate "COMPLETED!" Touch <PREVIEW> to hear the sound that you sampled, and check whether the sample was recorded as you wish.

12. Operations from this point will depend on what you want to do.

<Cancel>: Discard the sample that you just recorded, and return to the SAMPLING Template screen.

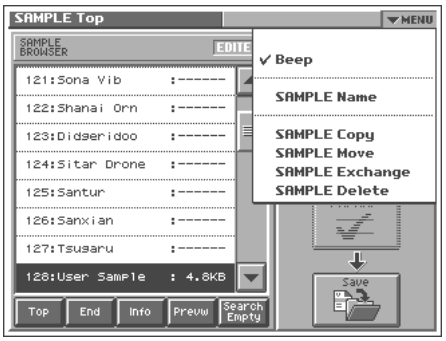
<OK>: Finalize the sample that you just recorded, and register it in the sample list.

<RETRY>: Discard the sample that you just recorded, and sample once again.

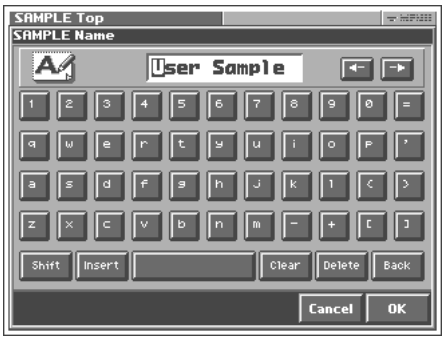
Naming a Sample (SAMPLE Name)

Assign a new name to the sample. You can assign a name consisting of up to twelve characters.

1. **Access the SAMPLE Top screen, and select the sample that you want to name (p. 104).**
2. **Touch <▼ MENU> in the upper right of the screen.**
   A pulldown menu appears.



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

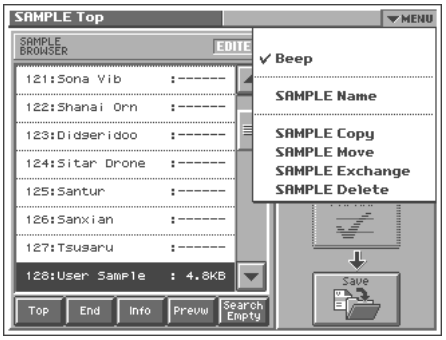
HINT

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.

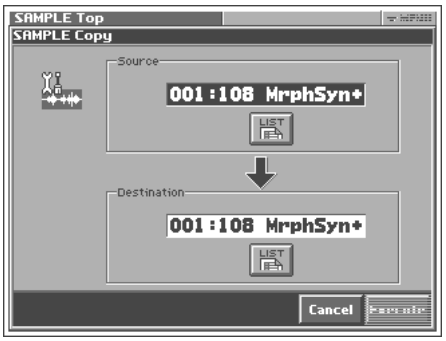
5. **When you have finished inputting, touch <OK> to finalize the sample name.**

Copying a Sample (SAMPLE Copy)

1. **Access the SAMPLE Top screen (p. 104).**
2. **Touch <▼ MENU> in the upper right of the screen.**
   A pulldown menu appears.



3. **In the pulldown menu, touch <SAMPLE Copy>.**
   The SAMPLE Copy window appears.



4. **Move the cursor to "Source" and select the copy-source sample.**
5. **Move the cursor to "Destination" and select the copy-destination sample.**

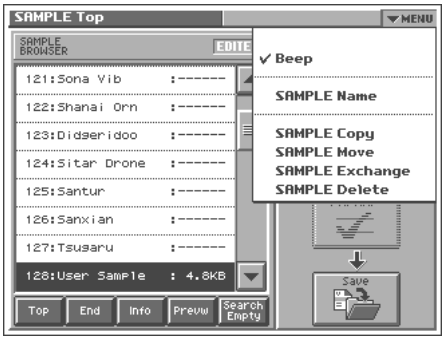
HINT

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

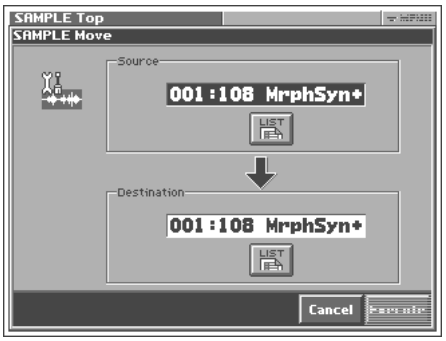
6. **Touch <Execute> to execute the copy operation.**
7. **Press [EXIT].**
   The SAMPLE Copy window closes.

Moving a Sample (SAMPLE Move)

1. **Access the SAMPLE Top screen (p. 104).**
2. **Touch <▼ MENU> in the upper right of the screen.**
   A pulldown menu appears.



3. **In the pulldown menu, touch <SAMPLE Move>.**
   The SAMPLE Move window appears.



4. **Move the cursor to "Source" and select the move-source sample.**
5. **Move the cursor to "Destination" and select the move-destination sample.**

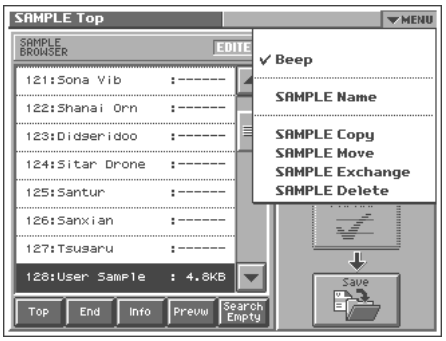
HINT

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

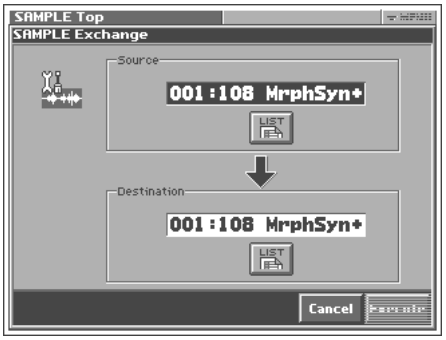
6. **Touch <Execute> to execute the move operation.**

Exchanging a Sample (SAMPLE Exchange)

1. **Access the SAMPLE Top screen (p. 104).**
2. **Touch <▼ MENU> in the upper right of the screen.**
   A pulldown menu appears.



3. **In the pulldown menu, touch <SAMPLE Exchange>.**
   The SAMPLE Exchange window appears.



4. **Move the cursor to "Source" and select the exchange-source sample.**
5. **Move the cursor to "Destination" and select the exchange-destination sample.**

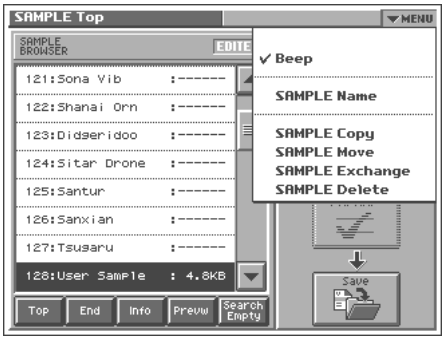
HINT

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

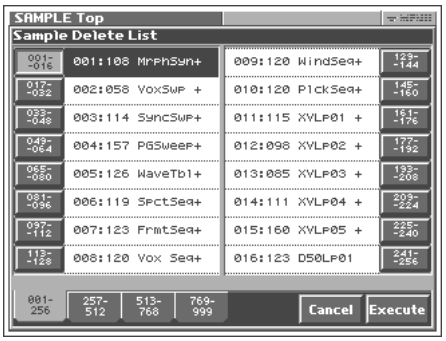
6. **Touch <Execute> to execute the exchange operation.**

Deleting a Sample (SAMPLE Delete)

1. **Access the SAMPLE Top screen (p. 104).**
2. **Touch <▼ MENU> in the upper right of the screen.**
   A pulldown menu appears.



3. **In the pulldown menu, touch <SAMPLE Delete>.**
   The SAMPLE Delete List window appears.



4. **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.

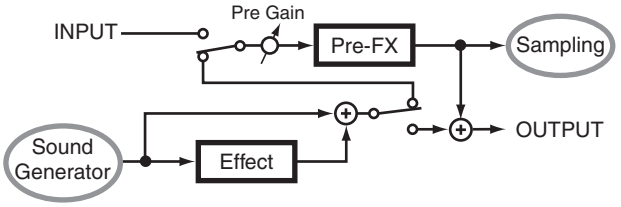
HINT

Each screen in the SAMPLE Delete List window shows a group of 16 samples. To view other samples, touch <017-032>–<241-256>, located at either side of the screen. To view higher-numbered samples, touch <257-512>–<769-999>, located at the bottom of the screen.

5. **Touch <Execute>.**
   The selected sample will be deleted.
6. **If you want to continue deleting other samples, repeat steps 4 and 5.**
7. **Press [EXIT].**
   The SAMPLE Delete List window closes.

Resampling

The V-Synth is able to resample samples from its internal memory. This is called **resampling**. In actuality, the sounds that are output from the rear panel MAIN OUT L(MONO), R jacks are sampled. For example, you could sample multiple samples played simultaneously, and record them as a single sample. You can conserve voices in this way.



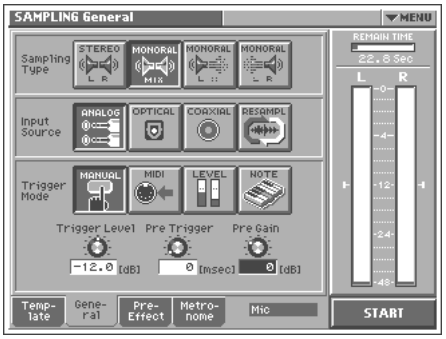
Before you enter Resampling mode, make settings so that you can play the sample(s) you wish to resample.

The resampling procedure is essentially the same as the "Sampling Procedure" described in the preceding section. However, please be aware of the following points.

- You must set the Input Source in the SAMPLING General screen to "RESAMPL."
- To adjust the sampling level, adjust the setup Pre-gain (p. 109) and the pre-effect Output Level (p. 109, p. 110).

Setup Settings

SAMPLING General



Sampling Type

Select the type of sampling.

Value

STEREO L R: Sample in stereo.

MONO MIX: Mix the signals input to L and R, and sample in monaural.

MONO L: Sample the L input signal in monaural.

MONO R: Sample the R input signal in monaural.

Input Source

Select the input from which the sound will be sampled.

Value

ANALOG: INPUT jacks

OPTICAL: OPTICAL IN connector

COAXIAL: COAXIAL IN connector

RESAMPL: Select this when you wish to resample. The sound that is output to MAIN OUT L(MONO) and R will be sampled.

Trigger Mode

Specifies how sampling will be started.

Value

MANUAL: Sampling will begin when you touch <START>.

MIDI: Sampling will begin when an external sequencer start message (system realtime message: FA) is received.

LEVEL: Sampling will start when the input signal exceeds the level specified by the Trigger Level setting.

NOTE: Sampling will begin when you play the keyboard or note message is received.

Trigger Level

Specifies the input level at which sampling will begin when the Trigger Mode is set to "LEVEL." The trigger level is shown by the " ▮ " and " ▮ " in the level meter located at the right of the screen.

Value: -∞–00 dB

NOTE

If Trigger Mode is set to other than "LEVEL," this parameter has no effect.

Pre Trigger

After the selected trigger to start sampling has been received, previously received data for the length of time specified here will be included in the sampled data. When the Trigger Mode is set to "LEVEL" and the early portion of the sample is being lost, you can use this setting to include the early portion.

Value: 0–1000 msec

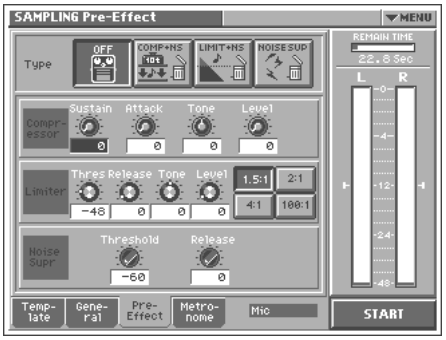
Pre Gain

Adjusts the input gain. This will apply to the sound that is received from all input jacks. It will also be applied to the sound being resampled. With positive (+) values, the gain will be higher than originally, and with negative (-) values the gain will be lower than originally.

Value: -12– +36 dB

Pre-Effect Settings

SAMPLING Pre-Effect



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

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.

Noise suppressor:

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

Type (Pre-Effect Type)

Value

OFF: No pre-effect will be used.

COMP+NS: Compressor and noise suppressor settings can be made.

LMT+NS: Limiter and noise suppressor settings can be made.

NS: Noise suppressor settings can be made.

■ Compressor

Sustain

Specifies the time over which a low-level signal is raised until it reaches a fixed volume.

Value: 0–127

Attack (Attack Time)

Specifies the attack time of the input sound.

Value: 0–127

Tone

Adjusts the tone quality of the compressor.

Value: -50– +50

Level (Out put Level)

Adjusts the output volume.

Value: 0– +24 dB

■ Limiter

Thres (Threshold Level)

Specifies the level (threshold level) at which the limiter will begin to function.

Value: -60–0 dB

Release (Release Time)

Specifies the time from when the input level drops below the threshold level until the limiter turns off.

Value: 0–127

Tone

Adjusts the tonal quality of the limiter.

Value: -50– +50

Level (Output Level)

Adjusts the output volume.

Value: 0– +24 dB

Ratio

Specifies the compression ratio.

Value: 1.5:1, 2:1, 4:1, 100:1

■ Noise Suppressor

Threshold (Threshold Level)

Specifies the level at which the noise suppressor will begin to operate. When the signal falls below the specified level, it will be muted.

Value: -60–0 dB

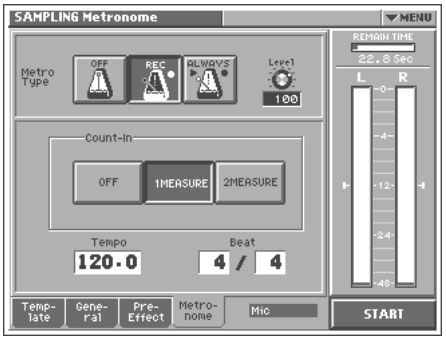
Release (Release Time)

Specifies the time from when the noise suppressor begins to operate until the volume reaches 0.

Value: 0–127

Metronome Settings

Metronome



Metro Type (Metronome Type)

Specifies when you want the metronome to sound.

Value

OFF: The metronome will not sound.

REC: The metronome will sound only during sampling.

ALWAYS: The metronome will sound whenever you sample (including while you are making settings in preparation for sampling).

Level (Metronome Level)

Specifies the volume of the metronome.

Value: 0–127

Count In

Specifies the number of measures for the count-in that will occur before sampling.

Value

OFF: A count will not be sounded.

1MEASURE: A one-measure count will be sounded.

2MEASURE: A two-measure count will be sounded.

NOTE

If Trigger Mode is set to other than "MANUAL," this parameter has no effect.

Tempo

Specifies the tempo of the metronome.

Value: 20.0–250.0

Beat

Specifies the time signature of the metronome.

Value

Numerator: 0–31

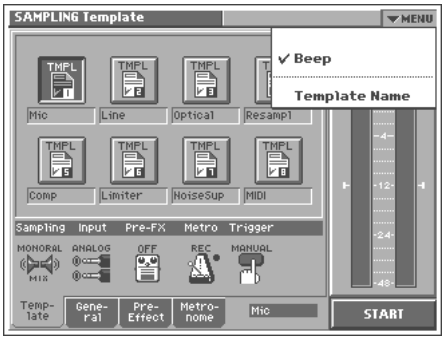
* *If you set this to 0, no time signature accent note will be sounded.*

Denominator: 2, 4, 8, 16, 32

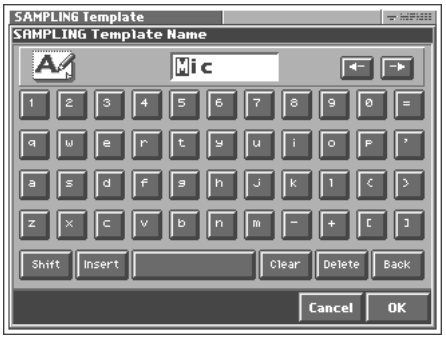
Naming a Template (Template Name)

A template can be given a name of up to eight characters.

1. **Access the SAMPLE Top screen, and select the sample that you want to name (p. 104).**
2. **Touch <▼ MENU> in the upper right of the screen.**
   A pulldown menu appears.



3. **In the pulldown menu, touch <Template Name>.**
   The SAMPLING Template 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.

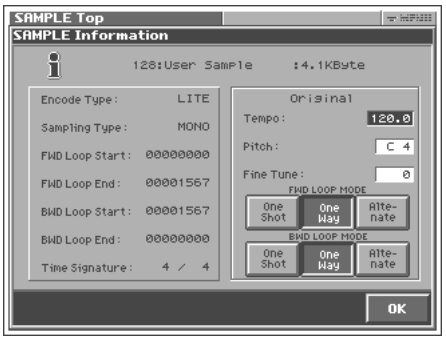
HINT

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 template name.**

Checking Sample Information

1. **Access the SAMPLE Top screen (p. 104).**
2. **Touch <Info>.**
   The SAMPLE Information screen appears.



In the SAMPLE Information screen you can check the following information for the sample.

- Encode type (p. 118)
- Sampling type (p. 108)
- Loop point location (Loop Start, Loop End) (p. 116)
- Time signature (p. 117)
- Original tempo (p. 117)
- Original pitch
- Original fine tune

MEMO

Original Tempo, Original Pitch, and Original Fine Tune can be modified in this screen.

NOTE

If you want to set an accurate original tempo, make settings in the sample editing screen (p. 117).

Original Pitch

Specifies the key that will play the sample at the pitch at which it was sampled.

Value: C-1 (0)-G9 (127)

Original Fine Tune

Adjusts the current pitch in one-cent steps (1/100 of a semitone) over a range of 1/2 semitone upward or downward.

Value: -50-+50

LOOP MODE

One Shot: The sample will not loop, regardless of the Loop Switch (p. 86) setting of the patch.

One Way: If the Loop Switch (p. 86) of the patch is on, the sample will loop in the forward direction between "LOOP START" and "LOOP END."

Alternate: If the Loop Switch (p. 86) of the patch is on, the sample will loop alternately backward and forward between the "LOOP START" and "LOOP END."

3. **When you have finished viewing the information, touch <OK> to close the window.**

Importing a Sample

To import samples you will use the Disk Save Project screen of Disk mode.

1. **Access the SAMPLE Top screen (p. 104).**
2. **Touch <Import>.**
   Jump to the DISK Import Files screen in the Disk mode.

☞ For details on operations in this screen, refer to **"Importing Individual Patch or Wave Files (Import Files)"** (p. 133).

Editing a Sample

When you have finished sampling, you can edit the sample data. You can also edit samples that you loaded (p. 133).

When editing a sample, touching <PREVIEW> will play the sample so you can check whether it was edited as you expect.

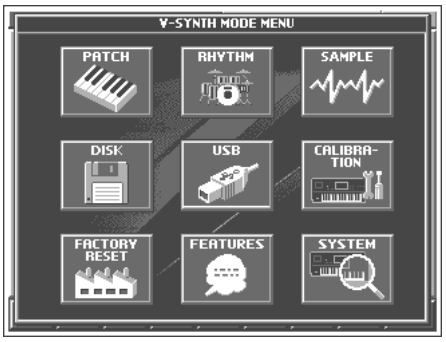
NOTE

- When the editing screens are displayed, playing the keyboard will not produce sound.
- It is not possible to edit two or more samples simultaneously.
- With some exceptions, editing a sample that has been encoded will cause the encoding data to be discarded. In this case, you must encode the data once again (p. 117).
- The factory-set waves (preset waves) cannot be edited.

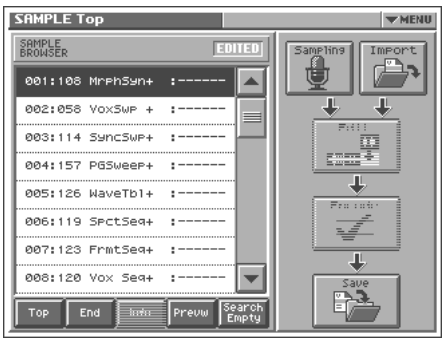
Common Procedure for Editing

Displaying the Sample Edit Screen

1. **Press [MODE].**
   The V-SYNTH MODE MENU window appears.



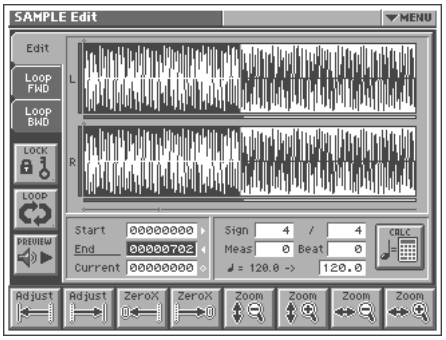
2. **Touch <SAMPLE>.**
   The SAMPLE Top screen appears.



3. **Select the sample that you wish to edit.**
   For details on making this selection, refer to **"Sampling Procedure"** (p. 104).

4. Touch <Edit>.

The SAMPLE Loop FWD screen appears.



5. Touch one of the tabs in the left side of the screen to access the desired editing screen.

<Edit>: Edit the sample of the specified region (p. 114)

<Loop FWD>: Specify the loop region for forward playback (p. 116)

<Loop BWD>: Specify the loop region for backward playback (p. 116)

☞ For details on each editing operation, refer to the corresponding page.

6. When you have finished making settings, press [EXIT] to return to the SAMPLE Top screen.

Functions Common to All Editing Screens

"Start," "End," and "Current" Settings

The V-Synth uses seven terms to indicate locations within a sample.

Sample Start: Beginning of the sample

Sample End: End of the sample

Loop Start, **Loop End:** When the Loop Play is ON, the region between these two points will be played repeatedly.

Edit Start, **Edit End:** Editing will affect the region between these two points.

Current: This is the currently selected location of the sample.

Move the cursor to "Start," "End," or "Current" to select the point that you want to specify. Then specify the location by turning the VALUE dial, by using [INC/+][DEC/-], or by dragging your finger over the sample in the screen.

MEMO

- The region of the sample between Edit Start and Edit End is displayed with the color inverted.
- When Current = Loop/Edit Start, moving Loop/Edit Start will cause Current to change as well.

NOTE

It is not possible to move Loop/Edit Start to the right of Loop/Edit End.

(LENGTH LOCK)

This locks the length of the region between the start point (Start) and end point (End) of the sample. It is convenient to use this when you already know the length of the sample that you need, and want to find the right region to use.

After the length has been locked, you can turn the VALUE dial, use [INC/+] [DEC/-], or drag your finger over the sample in the screen to adjust the Start and End locations while maintaining the distance between these two points.

HINT

You can also use Adjust (p. 113) or Zero Cross Search (p. 114) while the length of the sample is locked.

(LOOP)

This switches loop playback on/off. Turn this on if you want the loop region specified in the Loop FWD/BWD screen to play repeatedly.

(PREVIEW)

This plays the sample. During playback, you can touch this once again to stop playback.

(Adjust)

In the Loop FWD/BWD screen, the Adjust function moves the Loop Start, Loop End, or Current locations to the nearest of the following locations 1–5.

In edit screens, the Adjust function moves the Edit Start, Edit End, or Current locations to the nearest of the following locations 1–7.

1 Sample Start location
2 Sample End location
3 Loop Start location
4 Loop End location
5 Current location
6 Edit Start location
7 Edit End location

Move the cursor to the point that you want to adjust ("Start," "End," or "Current"), and touch Adjust or Adjust.

Touching Adjust will move the point toward the left, and touching Adjust will move it toward the right.

MEMO

In the SAMPLE Encode screen (p. 117), this will move the Current location to the closest event.

HINT

For example, if you wish to touch <PREVIEW> to check whether the results of your editing were satisfactory, you can jump the current location.

NOTE

In some cases nothing may happen, due to the relation between points or the Length Lock setting.

(Zero Cross Search)

This function searches for locations where the sample has a value of zero. When setting loop points or when cutting the sample, you should search for locations where the sample value is zero so that noise is not heard when you play the sample.

Move the cursor to the point ("Start," "End," or "Current") for which you want to find a zero-cross point, and then touch or . Touching will search toward the left, and touching will search toward the right.

(Zoom)

This expands or shrinks the displayed sample.

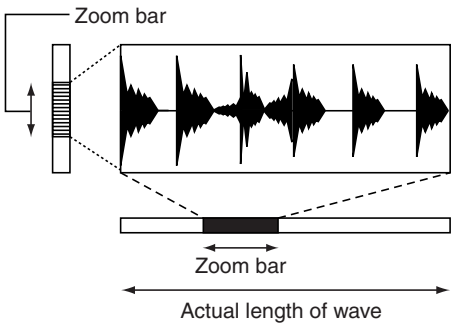
In any screen that displays the sample, you can touch the following buttons to expand or shrink the displayed sample.

: Shrink vertically

: Expand vertically

: Shrink horizontally

: Expand horizontally



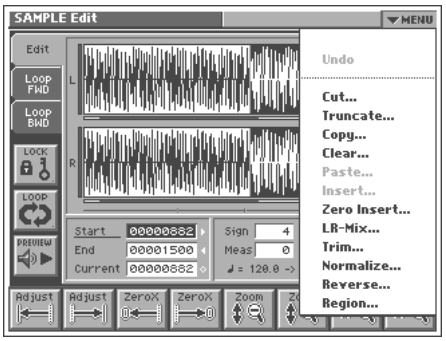
The vertical zoom bar indicates the magnification of the sample in the vertical direction. The horizontal zoom bar indicates the magnification of the sample in the horizontal direction, and shows the current location. As the display is magnified, the zoom bar will become narrower.

Editing the Specified Region of the Sample

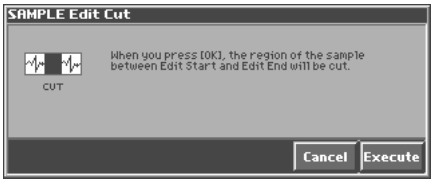
You can specify a region of the sample, and edit the region by cutting or copying.

Basic Operation

1. **Access the SAMPLE Edit screen (p. 112).**
2. **Specify the region that you want to edit (Edit Start–Edit End), or the Current location (p. 113).**
3. **Touch <▼ MENU> in the upper right of the screen.**
   A pulldown menu appears.



4. **In the pulldown menu, touch the editing function that you want to execute.**
   A window appears, asking you to confirm the operation.



MEMO

Some editing functions require you to input a numerical value. For details, refer to the following explanations of each editing function.

5. **Touch <EXECUTE> to execute the editing function.**

HINT

- If you want to cancel without executing, touch <Cancel>.
- By touching "Undo" in the pulldown menu, you can return to the state prior to executing the operation (Undo). Depending on the type of edit function you execute, or on the state of the work area, there may be cases in which the Undo function cannot be executed. In such cases, you will not be able to select <Undo>.

6. **If you want to save the edited result, perform the Save operation (p. 120).**

Sample Editing Functions

Cut

The region of the sample between Edit Start and Edit End will be cut.

Truncate

The region of the sample between Edit Start and Edit End will be kept, and the remainder of the sample will be deleted.

Copy

The sample between Edit Start and Edit End will be copied.

Clear

The sample between Edit Start and Edit End will be set to values of zero.

Paste

The copied data will be overwritten, beginning at the current location.

NOTE

If there is any sample data following the current location, it will be lost as far as the pasted portion extends.

Insert

The copied data will be inserted at the current location.

HINT

You can cut, paste, and insert between different samples. After copying, press [EXIT] to return to the SAMPLE Top screen. Select a different sample, access the SAMPLE Edit screen, and then paste or insert.

Zero Insert

This operation inserts silent space at the current location. It can also be used to lengthen a sample to a precise number of measures and beats.

In the SAMPLE Edit Zero Insert window, specify the length of the silent region that you want to insert. This setting is made in terms of a number of samples. Data in the V-Synth is handled as 44.1 kHz data, meaning that one second contains 44,100 data samples.

HINT

For example, if you wish to insert one second of silence, you would specify "44100" and execute Zero Insert.

NOTE

If the amount of remaining memory is small, it may not be possible to execute Copy, Paste, Insert, or Zero Insert. In such cases, delete unneeded samples from memory (p. 108).

LR-Mix

The stereo sample will be mixed to L, converting it into a monaural sample. If this is set to monaural, less wave memory will be used. This will also decrease the number of voices.

Trim (Trimming)

If the beginning and end of the sample are values other than zero, noise will be heard when you play the sample. Trim sets the values at the beginning and end of the sample to zero.

In the SAMPLE Edit Trim window, specify the length that you want to trim. This setting is made in terms of a number of samples. Data in the V-Synth is handled as 44.1 kHz data, meaning that one second contains 44,100 data samples.

HINT

For example, trimming at 100 samples. This will connect the first data sample and the one hundredth data sample by a smooth line of one hundred points. Similarly, the last data sample and the data sample one hundred samples before it will be connected by a smooth line of one hundred points.

Normalize

The Normalize operation is used to uniformly increase or decrease the level of the entire sample without allowing it to distort. This is used when you wish to make the volume consistent with other samples.

In the SAMPLE Edit Normalize window, specify the degree of normalization that you want to use. The value is specified in terms of a percentage.

HINT

For example, let's suppose that 100 is the maximum volume at which the volume does not distort. Executing the Normal operation at a setting of 90% will make the maximum value of the sample be 90.

NOTE

If you normalize at a low setting and then normalize at a high setting, the audio quality will deteriorate. This means that if you intend to normalize several times, you should start from the higher value and work downward.

Reverse

The sample will be reversed between Edit Start and Edit End. If you want the sample to play backwards, execute Reverse to reverse the sample from the beginning.

Region

The region of the sample between Edit Start and Edit End can be stored in internal memory as a separate sample. The original sample will remain unchanged.

Perform the following procedure.

1. **Select the region that you want to extract as a separate sample, and execute Region.**
2. **In the SAMPLE Edit Region window, select the sample number to which you want to paste the extracted region of the sample, and touch <OK>.**
3. **Assign a name to the new sample, and touch <OK>.**

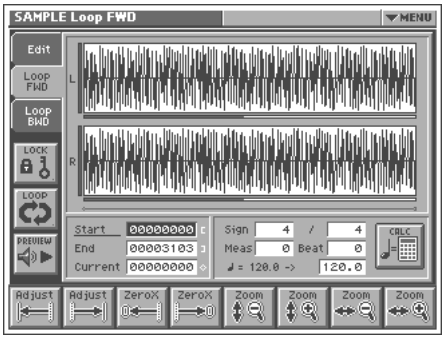
MEMO

If in step 2 you select a sample number that already has a sample, the sample data between Edit Start and Edit End will be added to the end of the selected sample.

Loop Region Settings

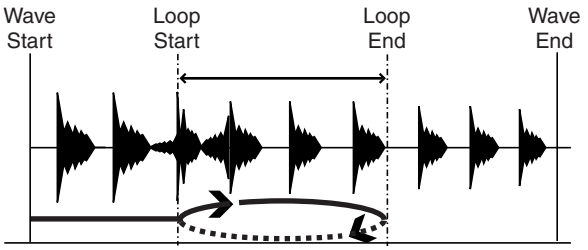
When the loop switch (p. 113) is ON, you can specify the region that will be played back as a loop. The region of the sample between Loop Start and Loop End will be played back repeatedly.

In the SAMPLE Loop FWD screen that appears when you touch <Loop FWD>, specify the loop region for forward playback. In the SAMPLE Loop BWD screen that appears when you touch <Loop BWD>, specify the loop region for backward playback.



Immediately after sampling or loading a sample, Loop Start will be set to the beginning of the sample and Loop End to the end of the sample.

If you set Loop Start and Loop End to locations within the sample, the sample will play back from the beginning, and then the region between Loop Start and Loop End will play back repeatedly.



MEMO

The data in the V-Synth is handled as 44.1 kHz data, which means there are 44,100 data samples per second. The shortest possible loop that can be set is 16 data samples.

NOTE

Loop range settings are ignored when the Playback Mode (p. 86) is set to "STEP" or "EVENT."

Original Tempo Setting

The Original Tempo is the reference tempo of the sample used when synchronizing it to the master tempo.

Example: A sample whose original tempo is 100

If the master tempo is set to 200 and the sample is synchronized, the sample will play back at double the speed at which it was recorded. If you set the master tempo to 50 and synchronize the sample, it will play back at half the speed at which it was

recorded. If you set the master tempo to 150 and synchronize the sample, it will play back at 1.5 times the speed at which it was recorded.

The exact original tempo can be calculated from the time signature, number of measures, and number of beats for the sample length between Loop Start and Loop End. This means that you must first specify the loop region, and then set the original tempo.

NOTE

If you wish to play back a loop while simultaneously synchronizing another sample, you must specify the correct original tempo. If you fail to do this, the sounds will drift out of synchronization.

1. **Move the cursor to the item that you wish to set.**
2. **Either turn the VALUE dial or press [INC/+][DEC/-] to set the "Sign" (time signature), "Meas" (measure), and Beat values.**
3. **Touch** **.**

The precise tempo will be displayed at the right of the "->." The tempo displayed here is the original tempo.

HINT

You can also move the cursor to the original tempo, and set it by rotating the VALUE dial or by using [INC/+][DEC/-].

Converting the Sample to V-Synth Data (Encode)

After you have finished editing the sample, you should encode it. By using the encoding that is appropriate for the sample, you'll be able to maintain a higher quality of audio while controlling the pitch, time, and formant.

NOTE

The factory-set waves (preset waves) cannot be encoded.

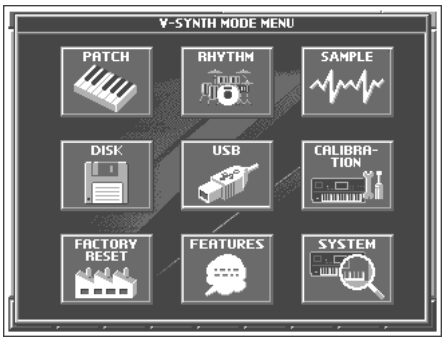
Displaying the Encode Screen

NOTE

Samples whose wave is too short (0.1 sec or less) cannot be encoded, and the SAMPLE Encode screen cannot be accessed for such samples.

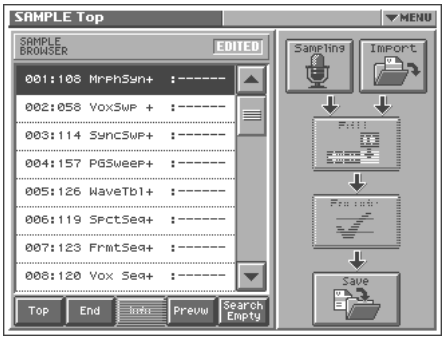
1. **Press [MODE].**

   The V-SYNTH MODE MENU window appears.



2. **Touch <SAMPLE>.**

   The SAMPLE Top screen appears.

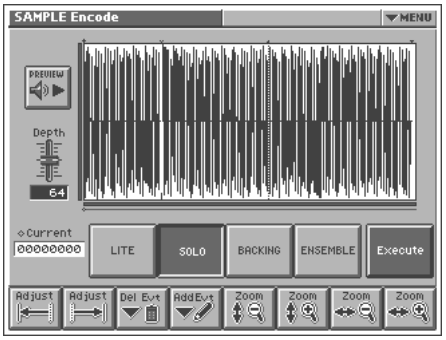


3. **Select the sample number that you wish to encode.**

   For details on how to select a sample, refer to **"Sampling Procedure"** (p. 104).

4. Touch <Encode>.

The SAMPLE Encode screen appears.



To Execute the Encode Operation

In the SAMPLE Encode screen, select the encode type, set the encode depth, and delete or add events. Then touch <Execute>.

If you wish to stop the encode during the operation, touch <Abort>.

When encoding is completed, you will return to the SAMPLE Top screen.

☞ For details on these settings, refer to the following sections.

MEMO

The amount of time required by the encoding process will depend on the sample. You may need to wait a certain amount of time for encoding to be completed.

Selecting the Encoding Type

You can choose from the following four types of encoding. Touch the appropriate button to select a type.

LITE

This is the simplest encoding type. When you sample on the V-Synth, this type is selected by default. This type can be used with a variety of sounds, but to obtain the highest quality we recommend that you encode using one of the other types.

SOLO

This is suitable for monophonic vocals or monophonic wind instruments (such as sax, trumpet, or flute). If you encode the sample using this type, you will be able to control the formant (p. 91) and use the robot voice function (p. 86). Even if you encode using SOLO, you can still play the sample polyphonically.

BACKING

This is suitable for decay-type instruments. It is particularly suitable for phrases that include instruments with a clear attack (such as drums, percussion, and guitar chords).

ENSEMBLE

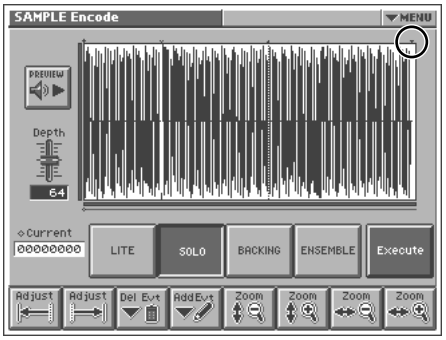
This is suitable for sustain-type instruments. It is particularly suitable when there are smooth changes in tone (such as choir or strings).

NOTE

- If the data is encoded using “BACKING” or “ENSEMBLE,” it will not be possible to use the formant control or robot voice functions.
- Once a sample has been encoded, editing that sample (except for some operations) will cause the encoded data to be discarded. If you then access the SAMPLE Encode screen in this state, “LITE” will always be selected as the encoding type. Select the appropriate encoding type, and then re-encode the sample.
- Depending on the sample, encoding with “SOLO” may cause the sound to be different than you expect, such as changes in pitch being incorrect by one octave. If this occurs, re-encode the sample using “BACKING” or “ENSEMBLE.”
- If a sample that contains large amounts of reverb or delay is encoded using “SOLO,” it may not sound as you expect. If this occurs, re-encode the sample using “BACKING” or “ENSEMBLE.”

Automatically Detecting Events

By specifying the Depth, you can automatically detect and "▼"mark locations where there is a strong attack (i.e., locations where the volume changes abruptly). Such marked locations are called **events**.



Depth (Encode Depth)

In the SAMPLE Encode screen, move the cursor to "Depth" and set the value. The higher the value you set, the more events will be assigned.

Value: 0–127

MEMO

If the Playback Mode (p. 86) is "STEP," the sample will play to the next event, and then stop each time you play the key. When the Playback Mode is set to "EVENT," the sample will be divided at event locations, and assigned to each key.

NOTE

- If you set Depth to a high value, a large number of events may be detected. If you encode in such a state, the interval between events will be too short, and the expected result will not be obtained when you play back in event units.
- If you change the location of an event after encoding, you must re-encode the sample. When you encode, the newly detected event locations will take effect.

Deleting and Adding Events

Setting the Encode Depth and automatically detecting events does not guarantee that the events will be added at the locations that you expect. If necessary, you can delete or add events as you like.
In the SAMPLE Encode screen, you can touch <PREVIEW> to play the sample from the current location until the next event. By touching <PREVIEW>, you can play the sample to see whether events have been assigned to the locations that you expect.

NOTE

- Be aware that if you change the encode depth after deleting or adding events, the events that were modified manually will be discarded, and the events that were detected by depth will be displayed.
- If you modify the location of events after encoding, you must re-encode. The modified location of the events will take effect when you encode.

Deleting an Event

1. **Move the cursor to "Current."**
2. **By turning the VALUE dial, pressing [INC/+][DEC/-], or dragging your finger over the sample in the screen, set Current to the location of the event that you want to delete.**
3. **Touch either or .**
   The Current location will move to the location of the next event toward the left or right.
4. **Repeat step 3 to move Current to the location of the event that you wish to delete.**
5. **Touch to delete the event.**

NOTE

The events at the beginning and end of a sample cannot be deleted.

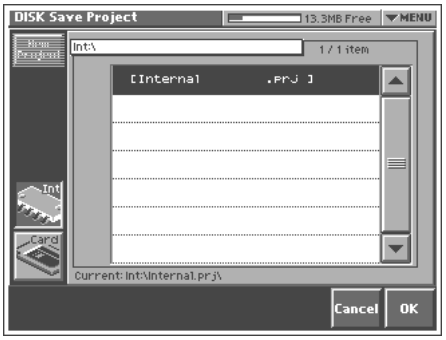
Adding an Event

1. **Move the cursor to "Current."**
2. **By turning the VALUE dial, pressing [INC/+][DEC/-], or dragging your finger over the sample in the screen, move Current to the location at which you want to add the event.**
3. **Touch to add the event.**

Saving a Sample

Samples that you sample or encode will be lost when you turn off the power. If you want to keep these samples, use the Disk Save Project screen in the Disk mode.

1. **Access the SAMPLE Top screen (p. 104).**
2. **Touch <Save>.**
   Jump to the DISK Save Project screen in the Disk mode.



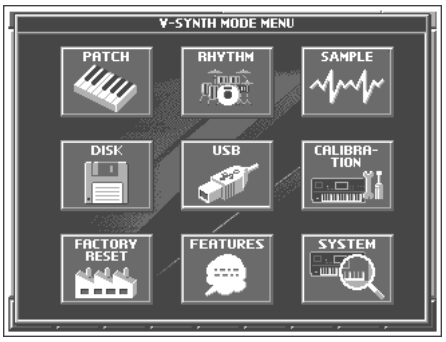
☞ For details on operations in this screen, refer to **"Saving Project on Disk (Save Project)"** (p. 132).

Settings Common to All Modes (System Mode)

Settings that affect the entire operating environment of the V-Synth, 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 V-SYNTH MODE MENU window appears.



2. **Touch <SYSTEM>.**
   The SYSTEM Com Master screen appears.

3. **The parameters are organized into several editing groups. 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.**

☞ For details on how the parameters are grouped, refer to **"System Parameters"** (p. 158).

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

☞ For details on how to use the touch screen, refer to **"Basic Touch Screen Operation"** (p. 23).

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 internal memory.

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 a set of standard settings, or to the factory settings.

1. **Access the System Edit screen.**

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

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

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

Master Tune

Adjusts the overall tuning of the V-Synth. The display shows the frequency of the A4 note (center A).

Value: 415.3–466.2 Hz

Master Key Shift

Shifts the overall pitch of the V-Synth in semitone steps.

Value: -24– +24

Master Level

Adjusts the volume of the entire V-Synth.

Value: 0–127

Patch Remain (Patch Remain Switch)

Specifies whether currently sounding notes will continue sounding when another patch is selected (ON), or not (OFF).

* *This function is valid only when the effect is turned off.*

Also, when this is "ON," changes produced by incoming MIDI messages such as Volume (CC 7) or Pan (CC 10), as well as tonal quality and volume changes produced by the various controllers will be inherited.

Value: OFF, ON

NOTE

Effects settings change as soon as you switch to a new patch, without being influenced by the Patch Remain setting. Because of this, certain effects settings can cause notes that were until then sounding to no longer be heard, even though Patch Remain has been set to on.

Powerup Mode

Specifies the condition that the V-Synth will be in when the power is turned on.

Value

LAST SET: Reinstates the patch selected at the time the V-Synth was last turned off.

DEFAULT: The V-Synth will be ready to play Patch "001."

IO

External Input Type

Selects the type of external input used when Oscillator Type (p. 85) is set to "EXT IN."

Value

STEREO L R: Input in stereo.

MONO MIX: Mix the L and R input signals and input in monaural.

MONO L: Input the L signal in monaural.

MONO R: Input the R signal in monaural.

Mix/Parallel

Specifies how the sound of the entire V-Synth will be output.

Value

Mix: Set this to have the collective output of all sounds output from the OUTPUT A (MIX) jacks. When you want to check the final overall sound being output, set to MIX.

HINT

Sounds output from the PHONES jack are the same as those output from the MIX OUT jacks. Therefore, any sounds set with Output Assign to be output from the DIRECT OUT jacks is not output from the PHONES jack. Be sure to have any sound you want to hear through the headphones set to "MIX."

Parallel: Output according to each Output Assign settings.

Output Gain

This adjusts the output gain from the V-Synth'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.

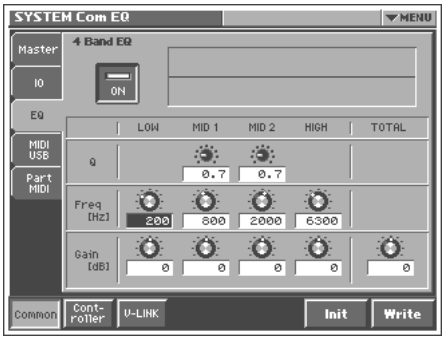
Value: -12–+12 dB

Digital Output Freq (Digital Output Frequency)

Sets the sampling frequency of the digital output.

Value: 44.1, 48, 96 KHz

EQ



4 Band EQ (4-Band Equalizer Switch)

Switch the 4-Band equalizer on/off.

Value: OFF, ON

LOW Freq (Low Frequency)

Selects the frequency of the low range.

Value: 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000 Hz

LOW Gain

Adjusts the gain of the low frequency. Positive (+) settings will emphasize the low-frequency range.

Value: -15– +15 dB

MID 1 Q

Adjusts the width of the middle range 1. Set a higher value for Q to narrow the range to be affected.

Value: 0.5, 0.7, 1.0, 2.0, 4.0, 8.0

MID 1 Freq (Mid 1 Frequency)

Selects the frequency of the middle range 1.

Value: 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

MID 1 Gain

Adjusts the gain of the middle range 1. Positive (+) settings will emphasize the middle range 1.

Value: -15–+15 dB

MID 2 Q

Adjusts the width of the middle range 2. Set a higher value for Q to narrow the range to be affected.

Value: 0.5, 0.7, 1.0, 2.0, 4.0, 8.0

MID 2 Freq (Mid 2 Frequency)

Selects the frequency of the middle range 2.

Value: 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

MID 2 Gain

Adjusts the gain of the middle range 1. Positive (+) settings will emphasize the middle range 2.

Value: -15–+15 dB

High Freq (High Frequency)

Selects the frequency of the high range.

Value: 2000, 4000, 5000, 6300, 8000, 10000, 12500, 16000, 20000 Hz

HIGH Gain

Adjusts the gain of the high frequency. Positive (+) settings will emphasize the high-frequency range.

Value: -15– +15 dB

TOTAL Gain

Adjusts the total gain.

Value: -15– +15 dB

MIDI/USB

Device ID (Device ID Number)

When you want to transmit or receive System Exclusive messages, set this parameter to match the Device ID number of the other MIDI device.

Value: 17–32

Clock Source

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.

Value

INTERNAL: The Patch Tempo will be used.

EXTERNAL: Synchronize to the clock of an external sequencer.

Rx PC (Receive Program Change Switch)

Specifies whether Program Change messages will be received (ON) or not (OFF).

Value: OFF, ON

Rx Bank (Receive Bank Select Switch)

Specifies whether Bank Select messages will be received (ON) or not (OFF).

Value: OFF, ON

Rx Sys-Ex (Receive System Exclusive Switch)

Specifies whether System Exclusive messages will be received (ON) or not (OFF).

Value: OFF, ON

Tx Edit (Transmit Edit Data Switch)

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).

Value: OFF, ON

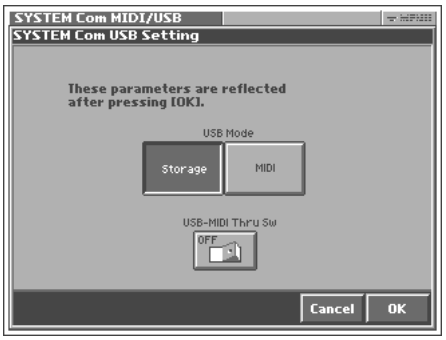
Clock Out

Specifies whether MIDI clock will be transmitted (ON) or not (OFF).

Value: OFF, ON

USB Setup

Touch <USB Setup>, and a window like the following will appear.



Touch <OK> to apply the settings of this window, or touch <Cancel> to cancel and close the window.

USB Mode

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

Available Settings

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.

NOTE

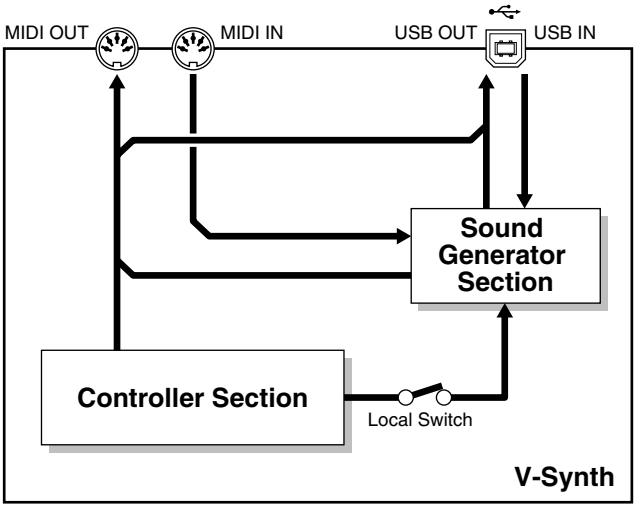
You must switch the USB Mode before you connect the V-Synth to your computer via the USB cable. If you change this setting while the V-Synth is connected, the computer may fail to recognize it correctly.

For details on connections to your computer in each USB Mode, refer to "Connecting Your Computer Via USB (USB Mode)."

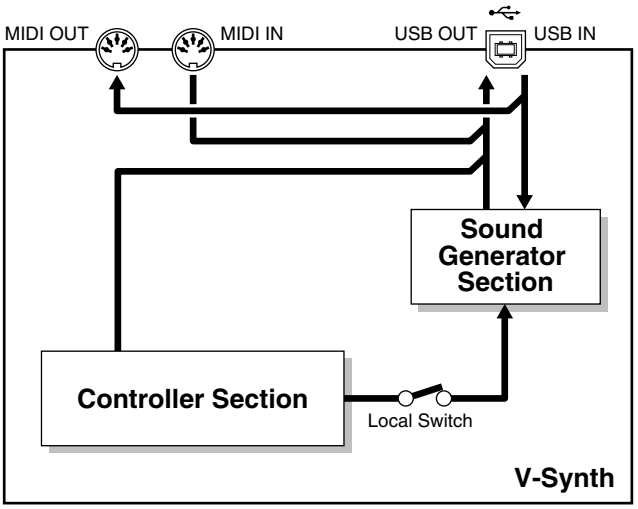
USB-MIDI Thru Sw (USB-MIDI Thru Switch)

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).

Value: OFF, ON

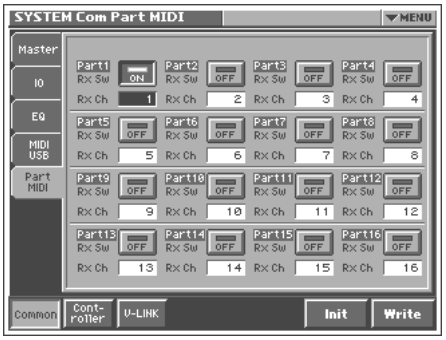


USB-MIDI Thru Sw=OFF



USB-MIDI Thru Sw=ON

Part MIDI



Part1–16 Rx Sw (Part 1–16 Receive Switch)

For each part, specify whether MIDI messages will be received (ON), or not (OFF).

If this is "ON," you can play that part from an external MIDI device. Normally, you will select "ON" only for part 1 which you play from the keyboard.

Value: OFF, ON

Part 1–16 Rx Ch (Part 1–16 Receive Channel)

Specifies the MIDI receive channel for each part.

Value: 1–16

NOTE

Performance data directed to the V-Synth itself will be transmitted on the channel you specified for part 1.

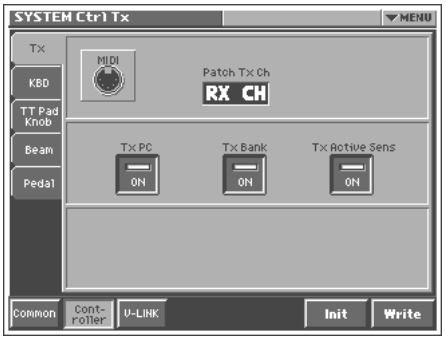
NOTE

In Rhythm mode, you can use eleven parts (non-rhythm parts) simultaneously. For this reason, the **"Part MIDI"** (p. 125) setting functions as follows.

- Part 1: The MIDI receive channel of the Rhythm part
- Part 2–12: Other parts (non-rhythm parts)
- Part 13–16: Not used

Controller Settings (Controller)

Tx



Patch Tx Ch (Patch Transmit Channel)

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."

Value: 1–16, RX CH, OFF

Tx PC (Transmit Program Change Switch)

Specifies whether Program Change messages will be transmitted (ON) or not (OFF).

Value: OFF, ON

Tx Bank (Transmit Bank Select Switch)

Specifies whether Bank Select messages will be transmitted (ON) or not (OFF).

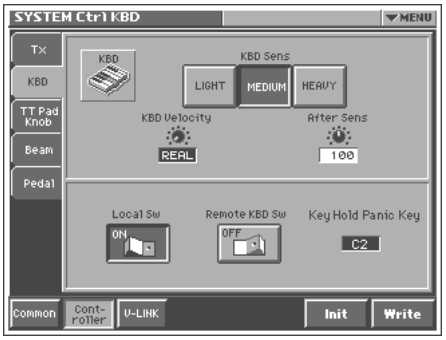
Value: OFF, ON

Tx Active Sens (Transmit Active Sensing Switch)

Specifies whether Active Sensing messages will be transmitted (ON) or not (OFF).

Value: OFF, ON

KBD



KBD Sens (Keyboard Sensitivity)

Adjusts the keyboard's touch.

Value

LIGHT: Light weight synthesizer keyboard like

MEDIUM: Standard

HEAVY: Acoustic piano simulation

KBD Velocity (Keyboard Velocity)

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).

Value: REAL, 1–127

After Sens (Aftertouch Sensitivity)

Specifies the Aftertouch sensitivity. Higher values will allow Aftertouch to be applied more easily. Normally you will leave this at "100."

Value: 0–200

Local Sw (Local Switch)

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."

Value: OFF, ON

Remote KBD Sw (Remote Keyboard Switch)

Set this parameter "ON" when you want to use an external MIDI keyboard instead of the V-Synth's keyboard. In this case, the MIDI transmit channel of the external MIDI keyboard can be set to any channel. Normally you will leave this parameter "OFF."

HINT

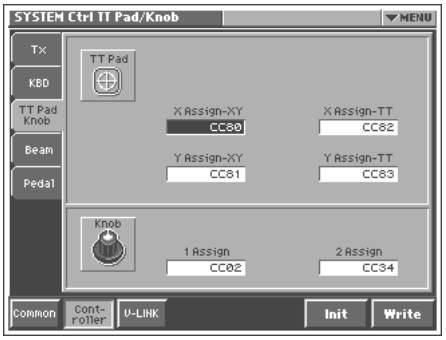
Turn this "ON" when you want to control the V-Synth from an external MIDI device when performing with the Arpeggiator (p. 62).

Key Hold Panic Key

This specifies the key (note) that will stop all sounds being held by the Key Hold function (p. 35).

Value: C2–C7

TT Pad/Knob



X Assign-XY

Specifies the MIDI controller number that will be transmitted by movements in the 'X' (horizontal) direction when the Time Trip pad is in XY mode.

Value

OFF: No message will be transmitted.

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

Y Assign-XY

Specifies the MIDI controller number that will be transmitted by movements in the 'Y' (vertical) direction when the Time Trip pad is in XY mode.

Value

OFF: No message will be transmitted.

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

X Assign-TT (X Assign-Time Trip)

Specifies the MIDI controller number that will be transmitted by movements in the 'X' (horizontal) direction when the Time Trip pad is in Time Trip mode.

Value

OFF: No message will be transmitted.

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

Y Assign-TT (Y Assign-Time Trip)

Specifies the MIDI controller number that will be transmitted by movements in the 'Y' (vertical) direction when the Time Trip pad is in Time Trip mode.

Value

OFF: No message will be transmitted.

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

Knob 1, 2 Assign

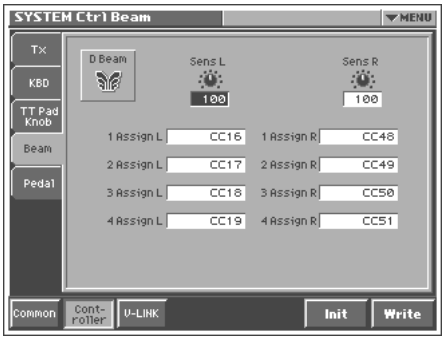
Specifies the MIDI controller number that will be transmitted by movements in the ASSIGNABLE CONTROL knob.

Value

OFF: No message will be transmitted.

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

Beam



D Beam Sens L, R (D Beam Sensitivity L, R)

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."

Value: 0–200

D Beam 1–4 Assign L, R

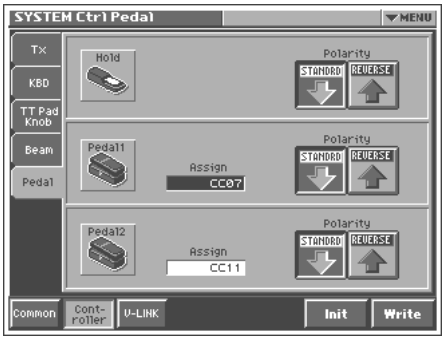
Specifies the MIDI controller number that will be transmitted by movements in the D Beam Controller. Assign L is the left side, and Assign R is the right side.

Value

OFF: No message will be transmitted.

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

Pedal



Hold Polarity (Hold Pedal Polarity)

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."

Value: STANDARD, REVERSE

Pedal 1, 2 Assign

This specifies the function of each pedal connected to the CTRL 1, CTLR 2 PEDAL jacks.

Value

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

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."

Value: STANDARD, REVERSE

V-LINK Settings (V-LINK)

Tx

MIDI Channel (V-LINK MIDI Channel)

Specifies the channel used to transmit MIDI messages for V-LINK control.

Value: 1–16

Audio (V-LINK Audio Switch)

Specifies whether sound from the externally connected video device will be played (ON) or not played (OFF).

Value: OFF, ON

KBD Output (V-LINK Keyboard Output Fade Switch)

Specifies whether the video output from the video device will be stopped (ON) or will not be stopped (OFF) when you are not holding down a key.

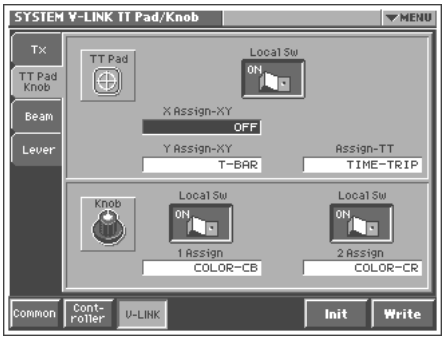
Value: OFF, ON

Palette Local Sw (V-LINK Patch Palette Local Switch)

Specify whether you will press PATCH PALETTE NUMBER [1]–[8] in V-LINK mode to switch patches (ON) or not (OFF)

Value: OFF, ON

TT Pad/Knob



TT Pad Local Sw (V-LINK Time Trip Pad Local Switch)

Specify whether the Time Trip pad and the internal sound generator will be disconnected in V-LINK mode (OFF) or not disconnected (ON).

Value: OFF, ON

X Assign-XY (V-LINK X Assign-XY)

Specify the V-LINK function that will be controlled when you operate the Time Trip pad in the X (horizontal) direction in XY mode.

Value

OFF: The time trip pad will not be used.

PLAYBACK-SPEED: Playback speed

DISSOLVE-TIME: Dissolve time (time over which the image switches)

AUDIO LEVEL: Volume during audio playback

COLOR-CB: Color Cb (color-difference signal)

COLOR-CR: Color Cr (color-difference signal)

BRIGHTNESS: Brightness

VFX1: Visual effects 1

VFX2: Visual effects 2

VFX3: Visual effects 3

VFX4: Visual effects 4

OUTPUT-FADE: Output fade

T-BAR: T bar

Y Assign-XY (Link Y Assign-XY)

Specify the V-LINK function that will be controlled when you operate the Time Trip pad in the Y (vertical) direction in XY mode.

Value

OFF: The time trip pad will not be used.

PLAYBACK-SPEED: Playback speed

DISSOLVE-TIME: Dissolve time (time over which the image switches)

AUDIO LEVEL: Volume during audio playback

COLOR-CB: Color Cb (color-difference signal)

COLOR-CR: Color Cr (color-difference signal)

BRIGHTNESS: Brightness

VFX1: Visual effects 1

VFX2: Visual effects 2

VFX3: Visual effects 3
VFX4: Visual effects 4
OUTPUT-FADE: Output fade
T-BAR: T bar

Assign-TT (V-LINK Assign-Time Trip)

Specify the V-LINK function that will be controlled when you operate the Time Trip pad in Time Trip mode.

Value

OFF: The time trip pad will not be used.
TIME-TRIP: Time trip

Knob 1, 2 Local Sw (V-LINK Knob1, 2 Local Switch)

Specify whether the assignable controller knobs 1 or 2 will be disconnected from the internal sound generator in V-LINK mode (OFF) or not disconnected (ON).

Value: OFF, ON

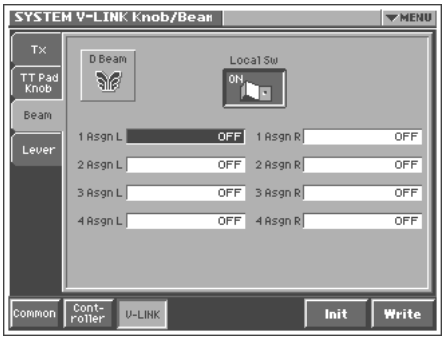
Knob 1, 2 Assign (V-LINK Knob1, 2 Assign)

Specify the V-LINK function that will be controlled when you turn the ASSIGNABLE CONTROL knob.

Value

OFF: The assignable controller will not be used.
PLAYBACK-SPEED: Playback speed
DISSOLVE-TIME: Dissolve time (time over which the image switches)
AUDIO LEVEL: Volume during audio playback
COLOR-CB: Color Cb (color-difference signal)
COLOR-CR: Color Cr (color-difference signal)
BRIGHTNESS: Brightness
VFX1: Visual effects 1
VFX2: Visual effects 2
VFX3: Visual effects 3
VFX4: Visual effects 4
OUTPUT-FADE: Output fade

Beam



Beam Local Sw (V-LINK D Beam Local Switch)

Specify whether the D Beam controller will be disconnected from the internal sound generator in V-LINK mode (OFF) or not disconnected (ON).

Value: OFF, ON

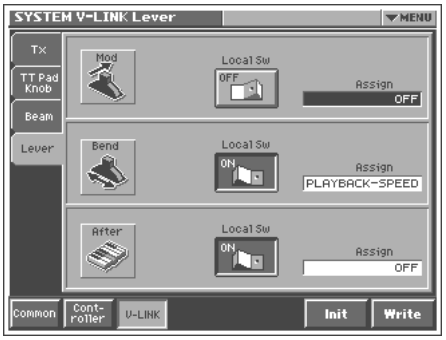
D Beam 1–4 Assign L, R (V-LINK D Beam1–4 Assign L, R)

Specify the V-LINK function that will be controlled when you operate the D Beam controller. Assign L is the left side, and Assign R is the right side.

Value

OFF: The D Beam controller will not be used.
PLAYBACK-SPEED: Playback speed
DISSOLVE-TIME: Dissolve time (time over which the image switches)
AUDIO LEVEL: Volume during audio playback
COLOR-CB: Color Cb (color-difference signal)
COLOR-CR: Color Cr (color-difference signal)
BRIGHTNESS: Brightness
VFX1: Visual effects 1
VFX2: Visual effects 2
VFX3: Visual effects 3
VFX4: Visual effects 4
OUTPUT-FADE: Output fade

Lever



Mod Local Sw (V-LINK Modulation Local Switch)

Specify whether the modulation lever will be disconnected from the internal sound generator in V-LINK mode (OFF) or not disconnected (ON).

Value: OFF, ON

Mod Assign (V-LINK Modulation Assign)

Specify the V-LINK function that will be controlled when you operate the modulation lever.

Value

OFF: The modulation lever will not be used.

PLAYBACK-SPEED: Playback speed

DISSOLVE-TIME: Dissolve time (time over which the image switches)

AUDIO LEVEL: Volume during audio playback

COLOR-CB: Color Cb (color-difference signal)

COLOR-CR: Color Cr (color-difference signal)

BRIGHTNESS: Brightness

VFX1: Visual effects 1

VFX2: Visual effects 2

VFX3: Visual effects 3

VFX4: Visual effects 4

OUTPUT-FADE: Output fade

Bend Local Sw (V-LINK Pitch Bend Local Switch)

Specify whether the pitch bend lever will be disconnected from the internal sound generator in V-LINK mode (OFF) or not disconnected (ON).

Value: OFF, ON

Bend Assign (V-LINK Pitch Bend Assign)

Specify the V-LINK function that will be controlled when you operate the pitch bend lever.

Value

OFF: The pitch bend lever will not be used.

PLAYBACK-SPEED: Playback speed

DISSOLVE-TIME: Dissolve time (time over which the image switches)

AUDIO LEVEL: Volume during audio playback

COLOR-CB: Color Cb (color-difference signal)

COLOR-CR: Color Cr (color-difference signal)

BRIGHTNESS: Brightness

VFX1: Visual effects 1

VFX2: Visual effects 2

VFX3: Visual effects 3

VFX4: Visual effects 4

OUTPUT-FADE: Output fade

After Local Sw (V-LINK Aftertouch Local Switch)

Specify whether keyboard aftertouch will be disconnected from the internal sound generator in V-LINK Mode (OFF) or will not be disconnected (ON).

Value: OFF, ON

After Assign (V-LINK Aftertouch Assign)

Specify the V-LINK function that will be controlled by keyboard aftertouch.

Value

OFF: The aftertouch will not be used.

PLAYBACK-SPEED: Playback speed

DISSOLVE-TIME: Dissolve time (time over which the image switches)

AUDIO LEVEL: Volume during audio playback

COLOR-CB: Color Cb (color-difference signal)

COLOR-CR: Color Cr (color-difference signal)

BRIGHTNESS: Brightness

VFX1: Visual effects 1

VFX2: Visual effects 2

VFX3: Visual effects 3

VFX4: Visual effects 4

OUTPUT-FADE: Output fade

Disk-Related Functions (Disk Mode)

Here you can load a project from disk into the internal work area (Load), or save the project that is in the work area (Save). You can also format a disk, or copy files and folders.

MEMO

In this chapter, we will collectively refer to internal memory and memory cards as "disks."

About Disk Utility

Disk Utility contains the following functions. In the DISK UTILITY MENU screen, you can select the desired function and execute it.

Load Project

This function loads project data from disk into the V-Synth's work area. → p. 132

Save Project

This function saves project data to disk. → p. 132

Clean Project

Clean up a disk by deleting unwanted files. → p. 133

Import Files

Import individual patch or wave files. → p. 133

Format

Initialize (format) a disk. → p. 134

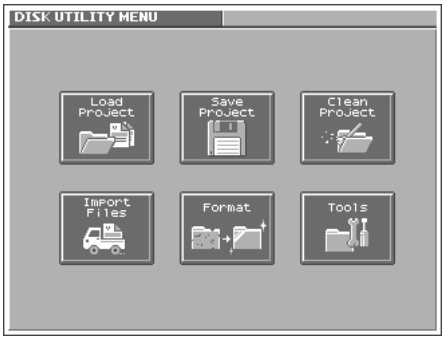
Tools

Copy or move a file or folder. → p. 135

Basic Disk Utility Operations

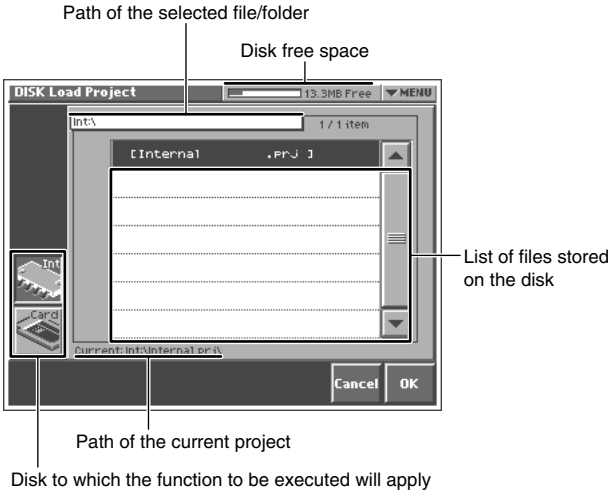
1. **If you are using a memory card, insert the appropriate memory card into the PC CARD slot.**
2. **Press [MODE] to access the V-SYNTH MODE MENU window.**
3. **Touch <Disk>.**

   The DISK UTILITY MENU screen appears.



4. **Touch the button for the function that you want to execute.**

   The screen for the function you intend to execute appears.



For details on operations in the Disk Utility screens, refer to the explanations on the following pages.

5. **Verify the contents of the screen, and touch <OK> to execute.**

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

HINT

To cancel the operation, touch <Cancel>.

6. **Press [EXIT] to exit Disk mode.**

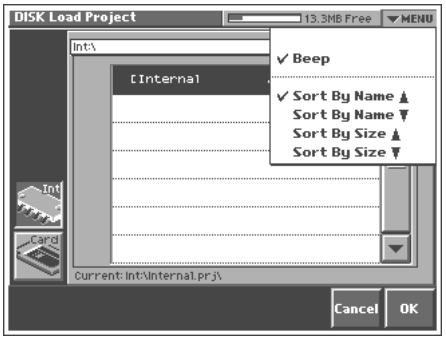
NOTE

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

Sorting the Files Displayed in the File List

In each Disk Utility screen, you can change the order of the files displayed in the file list.

1. **In the upper right of the disk utility screen, touch <▼ MENU>.**
   A pulldown menu like the following appears.



2. **Choose the desired sorting order from the pull-down menu.**
   <Sort By Name ▲>: Sort in alphabetical order of file name.
   <Sort By Name ▼>: Sort in reverse alphabetical order of file name.
   <Sort By Size ▲>: Sort in ascending order of file size.
   <Sort By Size ▼: Sort in descending order of file size.

Loading a Project from Disk into the V-Synth (Load Project)

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

NOTE

Be aware that if patches created on a V-Synth with a system version older than 2.0 (i.e., versions 1.00 through 1.51 of the system) use preset PCM waves, those patches will not play correctly on version 2.0.

■Patches that use a PCM oscillator

Patches that use preset waves

× Not compatible
Will NOT play correctly in version 2.0

Patches that use user waves

○ Upwardly compatible
Can be imported and played in version 2.0

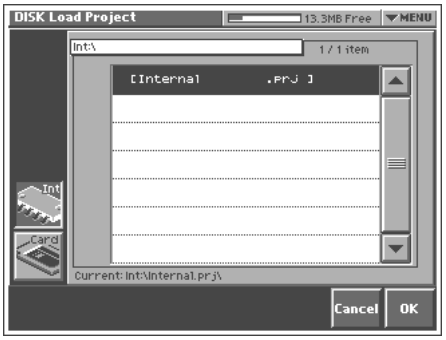
■Patches that use an analog oscillator
■Patches that use an external input oscillator

○ Upwardly compatible
Can be imported and played in version 2.0

NOTE

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

1. **Access the DISK UTILITY MENU screen (p. 131).**
2. **Touch <Load Project>.**
   The Disk Load Project screen appears.



3. **To load from internal memory, touch <Int>. To load from a memory card, touch <Card>. Then select the project that you want to load.**
4. **Touch <OK>.**
   A WARNING window like the following appears.

HINT

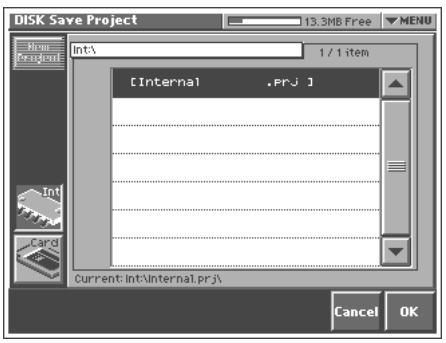
If you want to cancel the procedure at this point, touch <CANCEL>.

5. **Touch <EXECUTE> to execute the operation.**

Saving Project on Disk (Save Project)

Save the project in the work area to disk.

1. **Access the DISK UTILITY MENU screen (p. 131).**
2. **Touch <Save Project>.**
   The Disk Save Project screen appears.



3. To save to internal memory, touch <Int>. To save to memory card, touch <Card>. Then select the save-destination project.

HINT

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.

4. Touch <OK>.

A WARNING window like the following appears.

HINT

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

5. Touch <EXECUTE> to execute the operation.

Delete Unneeded Files (Clean Project)

This lets you clean up the contents of the disk by deleting files that cannot be used by the V-Synth or waves that are not used by patches. Executing this operation can increase the free space available on the disk. This operation can also be used to renumber the patches/waves so that any numbers that weren't being used are put to use, thus bringing up the slack.

* *Patch numbers (493–512) used by Rhythm mode (p. 101) will not be renumbered.*

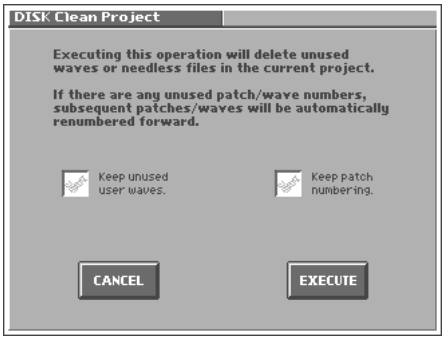
MEMO

If the current project is in Internal memory, all internal memory will be cleaned up. If the current project is on a memory card, only the current project will be cleaned up.

1. Access the DISK UTILITY MENU screen.

2. Touch <Clean Project>.

The DISK Clean Project screen appears.



3. Touch the check boxes to choose what the Clean Project command is to do.

Keep unused user waves.:

Check this box if you want to keep all the waves you've sampled or imported from an external device (user waves).

Keep patch numbering.:

Check this box if you don't want patches to be renumbered to fill up any unused patch numbers.

4. Touch <EXECUTE> to execute the operation.

Importing Individual Patch or Wave Files (Import Files)

You can import individual patch or wave files or folders into the work area of the V-Synth.

NOTE

Be aware that if patches created on a V-Synth with a system version older than 2.0 (i.e., versions 1.00 through 1.51 of the system) use preset PCM waves, those patches will not play correctly on version 2.0.

■Patches that use a PCM oscillator

Patches that use preset waves

× Not compatible
Will NOT play correctly in version 2.0

Patches that use user waves

○ Upwardly compatible
Can be imported and played in version 2.0

■Patches that use an analog oscillator

■Patches that use an external input oscillator

○ Upwardly compatible
Can be imported and played in version 2.0

NOTE

The data will be imported into unused patch/wave numbers. Importing is not possible if there are no empty patches or waves.

1. Access the DISK UTILITY MENU screen (p. 131).

2. Touch <Import Files>.

The Disk Import Files screen appears.

3. Touch <Patch> if you want to import a patch, or touch <Wave> if you want to import a wave.

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

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

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

Prevw: Preview (audition) the selected file (.w00/.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.

MEMO

If you have selected a patch whose oscillator type is "PCM," the wave used by that patch will also be imported.

6. Touch <OK>.

A WARNING window like the following appears.

HINT

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

7. Touch <EXECUTE> to execute the operation.

Initializing a Disk (Format)

You can initialize (format) a disk, erasing all data from it.

1. Access the DISK UTILITY MENU screen (p. 131).

2. Touch <Format>.

The Disk Format screen appears.

3. If you want to format the internal memory, touch <Int>. If you want to format a memory card, touch <Card>.

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

Prevw: Preview (audition) the selected file (.w00/.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.

4. When you format a memory card, the VOLUME Name window will appear, allowing you to assign a new volume name.

5. Touch <OK>.

A WARNING window like the following appears.

HINT

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

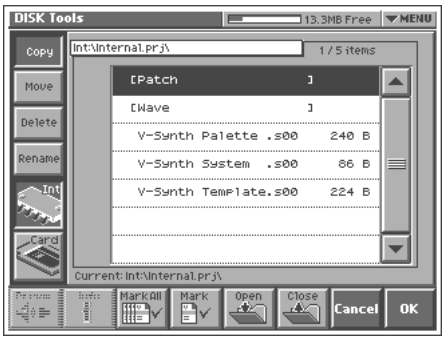
6. Touch <EXECUTE> to execute the operation.

Functions Related to Files and Folders (Tools)

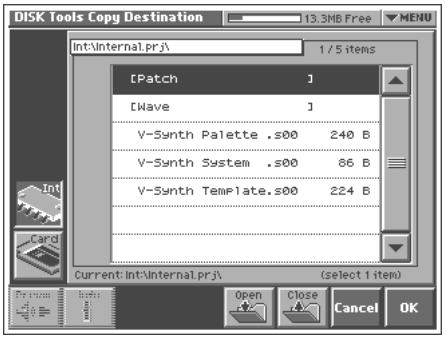
You can manage files or folders by copying or moving them.

Copying Files/Folders (Copy)

1. **Access the DISK UTILITY MENU screen (p. 131).**
2. **Touch <Tools>.**
   The Disk Tools screen appears.



3. **Touch <Copy>.**
4. **If you want to copy from internal memory, touch <Int>. If you want to copy from a memory card, touch <Card>.**
5. **In the file list, select the file or folder that you want to copy.**
   Here you can use the following functions. Touch the appropriate button to execute.
   Prevw: Preview (audition) the selected file (.w00/.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>.**
   The Disk Tools Copy Destination screen appears.



7. **If you want to copy to internal memory, touch <Int>. If you want to copy to a memory card, touch <Card>.**
8. **In the file list, select the copy-destination file or folder.**
   Here you can use the following functions. Touch the appropriate button to execute.
   Prevw: Preview (audition) the selected file (.w00/.wav/.aif).
   Info: View information for the selected file.
   Open: Open the selected folder.
   Close: Move to the next higher folder.
9. **Touch <OK>.**
   A WARNING window like the following appears.

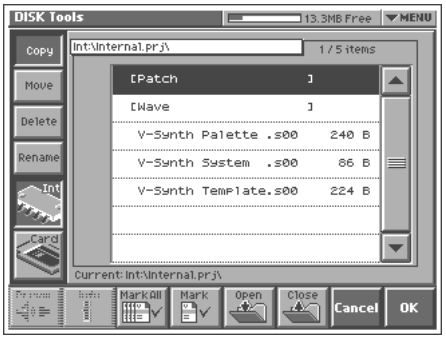
HINT

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

10. **Touch <EXECUTE> to execute the operation.**

Moving Files/Folders (Move)

1. **Access the DISK UTILITY MENU screen (p. 131).**
2. **Touch <Tools>.**
   The Disk Tools screen appears.



3. **Touch <Move>.**
4. **If you want to move a file or folder from internal memory, touch <Int>. If you want to move it to a memory card, touch <Card>.**

5. In the file list, select the file or folder that you want to move.

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

Prevw: Preview (audition) the selected file (.w00/.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>.

The Disk Tools Move Destination screen appears.

7. If you want to move the file or folder to internal memory, touch <Int>. If you want to move it to a memory card, touch <Card>.

8. In the file list, select the move-destination file or folder.

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

Prevw: Preview (audition) the selected file (.w00/.wav/.aif).

Info: View information for the selected file.

Open: Open the selected folder.

Close: Move to the next higher folder.

9. Touch <OK>.

A WARNING window like the following appears.

HINT

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

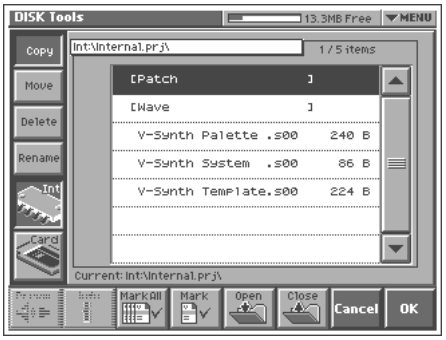
10. Touch <EXECUTE> to execute the operation.

Deleting Files/Folders (Delete)

1. Access the DISK UTILITY MENU screen (p. 131).

2. Touch <Tools>.

The Disk Tools screen appears.



3. Touch <Delete>.

4. If you want to delete a file or folder from internal memory, touch <Int>. If you want to delete it from a memory card, touch <Card>.

5. In the file list, select the file or folder that you want to delete.

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

Prevw: Preview (audition) the selected file (.w00/.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 like the following appears.

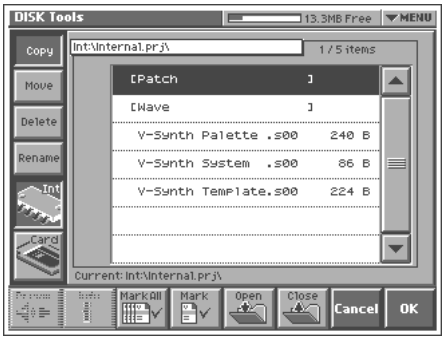
HINT

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

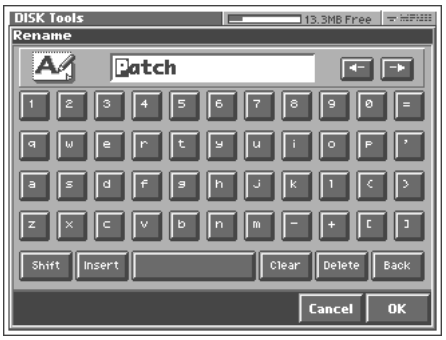
7. Touch <EXECUTE> to execute the operation.

Renaming a Files/Folders (Rename)

1. **Access the DISK UTILITY MENU screen (p. 131).**
2. **Touch <Tools>.**
   The Disk Tools screen appears.



3. **Touch <Rename>.**
4. **If you want to rename a file or folder in internal memory, touch <Int>. If you want to rename a file or folder in a memory card, touch <Card>.**
5. **In the file list, select the file or folder that you want to rename.**
   Here you can use the following functions. Touch the appropriate button to execute.
   Prevw: Preview (audition) the selected file (.w00/.wav/.aif).
   Info: View information for the selected file.
   Open: Open the selected folder.
   Close: Move to the next higher folder.
6. **Touch <OK>.**
   The Rename window appears.



7. **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.

8. **When you have finished inputting, touch <OK> to execute the operation.**

Connecting to Your Computer via USB (USB Mode)

About USB Functions

The V-Synth has two modes of USB functionality: **storage mode** for transferring files, and **MIDI mode** for sending and receiving MIDI messages. You must switch between these two modes on the V-Synth; they cannot be used simultaneously.

Each mode can be used with the following operating systems.

- Windows XP/2000/Me
- Mac OS X 10.2 or later
- Mac OS 9.0.4 or later

NOTE

The USB mode (file transfer/MIDI communication) must be switched before you connect the V-Synth with your computer. For the procedure, refer to **"USB Setup"** (p. 124).

Transferring Files to or from Your Computer (Storage Mode)

By connecting the V-Synth with your computer via a USB cable, you can transfer files such as projects, patches, and wave data from internal memory or a memory card to and from the hard disk or other media of your computer, in order to back up your data.

You can use software on your computer to edit wave data you've created on the V-Synth. Conversely, wave data that you've created on your computer can be used on the V-Synth.

In this way, USB Storage mode lets you transfer files such as patch and waves to or from a connected computer.

NOTE

Never connect or disconnect the USB cable or turn off the power while in USB mode or while data is being transferred.

Selecting USB Storage Mode

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

MEMO

With the factory settings, the V-Synth is set to USB Storage mode.

1. **Press [MODE] to access the V-SYNTH MODE MENU window.**
2. **Touch <SYSTEM>.**

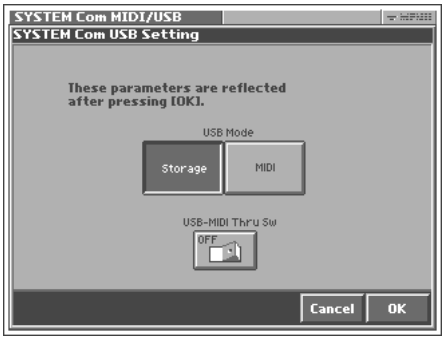
   The SYSTEM Com Master screen appears.

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 like the following 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.**

For the rest of the procedure, read either "Windows Me/2000/XP users" or "Macintosh users" as appropriate.
Windows users: Continue reading from this page.
Macintosh users: Read from page 141.

Windows Users

● Windows XP/2000/Me or later Users

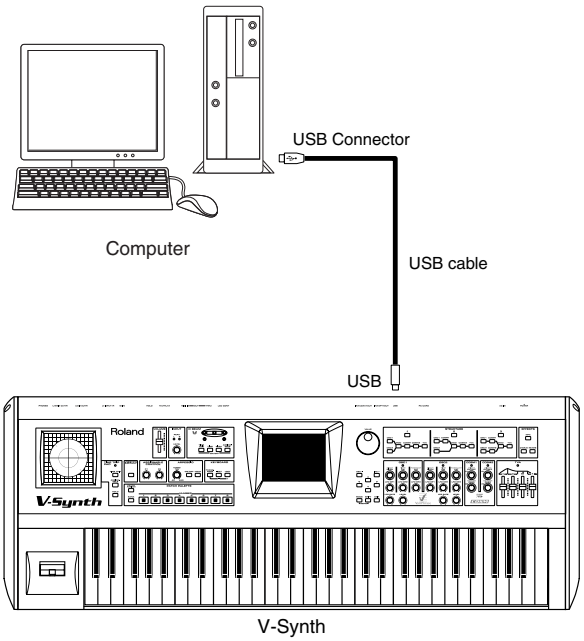
Installation is completely automatic.

Connecting the V-Synth to Your Computer

1. **Make sure that the power of the V-Synth is turned off.**

2. **Start up your computer.**

3. **Connect the V-Synth and your computer using a USB cable.**

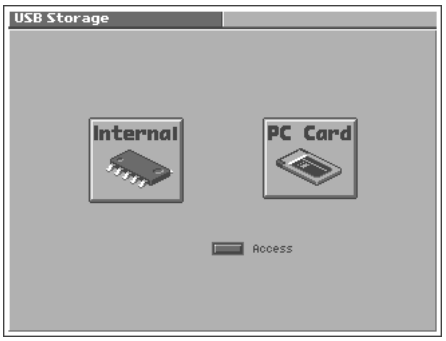


4. **Turn on the power of V-Synth.**

5. **If you are using a memory card, insert that memory card into the PC CARD slot.**

6. **Press [MODE] to access the V-SYNTH MODE MENU window.**

7. **Touch <USB>.**
   The USB Storage screen appears.



NOTE
If the USB Mode (p. 124) is set to "MIDI," you will be unable to select <USB> in the V-SYNTH MODE MENU window. Set the USB Mode to "Storage."

8. **Touch <Internal> or <PC Card> to establish the connection with your computer.**

   <Internal>: Mounts the internal memory as an external drive on your computer.

   <PC Card>: Mounts the memory card as an external drive on your computer.

NOTE

You cannot select "PC Card" unless a memory card is inserted in the PC CARD slot.

9. **When the USB connection is established, 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.

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

    In Windows Me/2000, a drive icon named "Removable Disk" will appear. In Windows XP, the drive icon will be named "V-SYNTH" if you selected "Internal." If you selected "PC Card," it will show the volume label that you assigned when formatting the card. If you formatted the card on the V-Synth, the volume label will be "PC CARD."

11. **Once the V-Synth is connected, you can transfer files by operating your computer.**

NOTE

Do not perform the following actions while "Access" (the access indicator) in the USB Storage screen is blinking. Doing so may cause your computer to freeze, and may also damage the files in the drive.

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

Switching the Connected Drive

When USB-connected, here's how to switch between "Internal" (the V-Synth's internal memory) and "PC Card" (the memory card inserted in the V-Synth).

1. **In the V-Synth's USB Storage screen, make sure that "Access" (the access indicator) is not blinking.**
2. **In My Computer, right-click the "Removable Disk" icon and execute "Eject."**
3. **In the V-Synth's USB Storage screen, touch <Internal> or <PC Card> to change drives.**

Closing the USB Storage Screen

1. **In the V-Synth's USB Storage screen, make sure that "Access" (the access indicator) is not blinking.**
2. **In My Computer, right-click the "Removable Disk" icon and execute "Eject."**
3. **Press [EXIT].**

   The USB Storage screen will close.

NOTE

If you press [EXIT] without performing the "Eject" operation on your computer, a WARNING window like the following will appear.

Touch <EXECUTE> to close this window only if you are unable to perform the "Eject" operation on your computer.

Canceling the USB Connection

Once you have connected the V-Synth and your computer in Storage mode, you must cancel the USB connection on your computer before you do either of the following actions:

- Disconnect the USB cable
- Turn off the V-Synth's power while the USB cable is connected

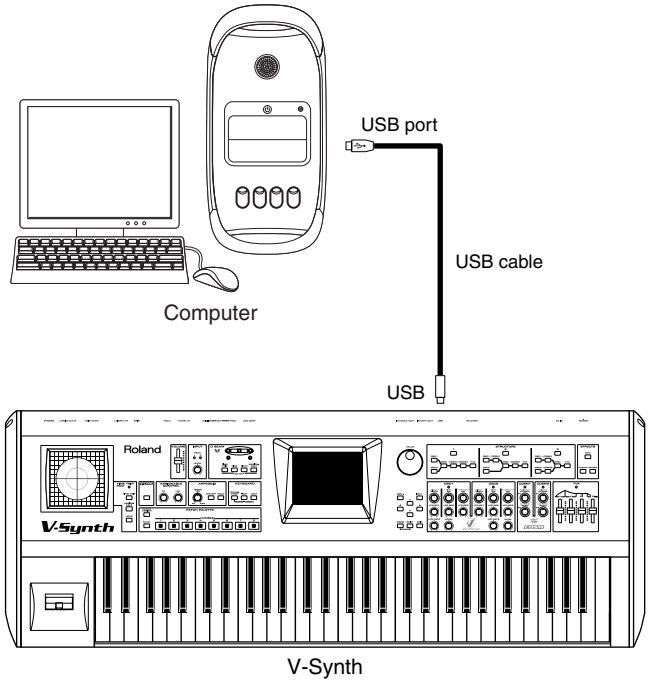
1. **Use "Eject hardware" (displayed in the task bar in the lower right of the screen) to cancel the connection with the V-Synth.**

   The "Removable Disk" drive icon will disappear from My Computer, and the USB connection will be cancelled.

Macintosh Users

Connecting the V-Synth to Your Computer

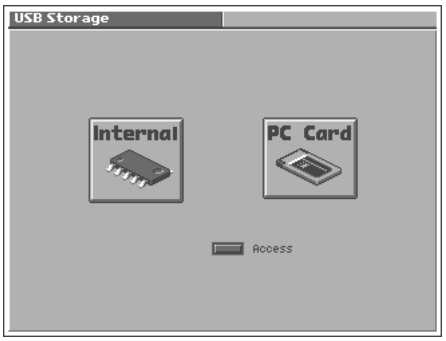
1. **Make sure that the power of the V-Synth is turned off.**
2. **Start up your computer.**
3. **Connect the V-Synth and your computer using a USB cable.**



V-Synth

4. **Turn on the power of V-Synth.**
5. **If you are using a memory card, insert that memory card into the PC CARD slot.**
6. **Press [MODE] to access the V-SYNTH MODE MENU window.**
7. **Touch <USB>.**

   The USB Storage screen appears.



NOTE

If the USB Mode (p. 124) is set to "MIDI," you will be unable to select <USB> in the V-SYNTH MODE MENU window. Set the USB Mode to "Storage."

8. **Touch <Internal> or <PC Card> to establish the connection with your computer.**

   <Internal>: Mounts the internal memory as an external drive on your computer.

   <PC Card>: Mounts the memory card as an external drive on your computer.

NOTE

You cannot select "PC Card" unless a memory card is inserted in the PC CARD slot.

9. **When the USB connection is established, a new drive icon will appear on your desktop.**

   If you have selected "Internal," a drive icon named "V-SYNTH" will appear. If you selected "PC Card," it will show the volume label that you assigned when formatting the card. If you formatted the card on the V-Synth, the volume label will be "PC CARD."

10. **Once the V-Synth is connected, you can transfer files by operating your computer.**

NOTE

Do not perform the following actions while "Access" (the access indicator) in the USB Storage screen is blinking. Doing so may cause your computer to freeze, and may also damage the files in the drive.

- Do not disconnect the USB cable
- Do not remove the memory card while it is being accessed
- Do not sleep, restart, or shut down your computer
- Do not turn off the power of V-Synth.

Switching the Connected Drive

When USB-connected, here's how to switch between "Internal" (the V-Synth's internal memory) and "PC Card" (the memory card inserted in the V-Synth).

1. **In the V-Synth's USB Storage screen, make sure that "Access" (the access indicator) is not blinking.**
2. **Select the V-Synth drive icon on your desktop, and either choose "Eject" from the "Special" menu, or drag the icon into the trash.**
3. **In the V-Synth's USB Storage screen, touch <Internal> or <PC Card> to change drives.**

Closing the USB Storage Screen

1. **In the V-Synth's USB Storage screen, make sure that "Access" (the access indicator) is not blinking.**
2. **Select the V-Synth drive icon on the desktop, and drag it into the "trash."**
   Alternatively, you can select one of the following menu commands:
   - In OS X: From the "Files" menu, select "Eject "V-SYNTH""
   - In OS 9: From the "Special" menu, select "Eject"
3. **Press [EXIT].**
   The USB Storage screen will close.

NOTE

If you press [EXIT] without performing the "Eject" operation on your computer, a WARNING window like the following will appear.

Touch <EXECUTE> to close this window only if you are unable to perform the "Eject" operation on your computer.

Canceling the USB Connection

Once you have connected the V-Synth and your computer in Storage mode, you must cancel the USB connection on your computer before you do either of the following actions:

- Disconnect the USB cable
- Turn off the V-Synth's power while the USB cable is connected

1. **Select the V-Synth drive icon on the desktop, and drag it into the "trash."**
   Alternatively, you can select one of the following menu commands:
   - In OS X: From the "Files" menu, select "Eject "V-SYNTH""
   - In OS 9: From the "Special" menu, select "Eject"

Examples of Using Storage Mode

Backing Up Patch and Wave Data (Project) from the V-Synth

When using USB in Storage mode, the data within the V-Synth may be damaged if you operate your computer incorrectly or if your computer crashes. As a precaution against such occurrences, we recommend that you create a backup as described below.

Backing Up the V-Synth's Internal Data onto Your Computer

1. **Use a USB cable to connect the V-Synth to your computer as described in "Connecting the V-Synth to your computer" (p. 139, p. 141).**
2. **Using your computer, copy the V-Synth's *****.prj folder onto a drive (e.g., hard disk) of your computer.**
3. **Cancel the USB connection (p. 140, p. 142).**

Loading Backup Data from Your Computer into the V-Synth

1. **Use a USB cable to connect the V-Synth to your computer as described in "Connecting the V-Synth to your computer" (p. 139, p. 141).**
2. **Using your computer, copy the *****.prj folder that you previously saved on your computer to the *****.prj folder (overwriting it) within the V-Synth.**
3. **Cancel the USB connection (p. 140, p. 142).**

Loading an Audio File (WAV/AIFF format) from Your Computer into the V-Synth (Import)

WAV/AIFF format audio files created by another device can be loaded into the V-Synth and used in the same way as data you've sampled on the V-Synth.

1. **Use a USB cable to connect the V-Synth to your computer as described in "Connecting the V-Synth to your computer" (p. 139, p. 141).**
2. **From your computer, copy (drag & drop) the audio file saved on your computer into the *****.prj folder within the V-Synth.**
3. **Cancel the USB connection (p. 140, p. 142).**
4. **Use the Import menu (Import Files, p. 133) in the V-Synth's Disk mode to import the file you copied in step 2.**
5. **Use the Sample mode's Preview function (p. 113) to verify that the imported data will sound correctly.**
6. **Use the Sample mode's Save command (or the Disk mode's Save Project command) to save the project.**
7. **Use the Disk mode's Tools menu (Tools, p. 135) to delete the data you copied in step 2.**

The V-Synth's File Structure

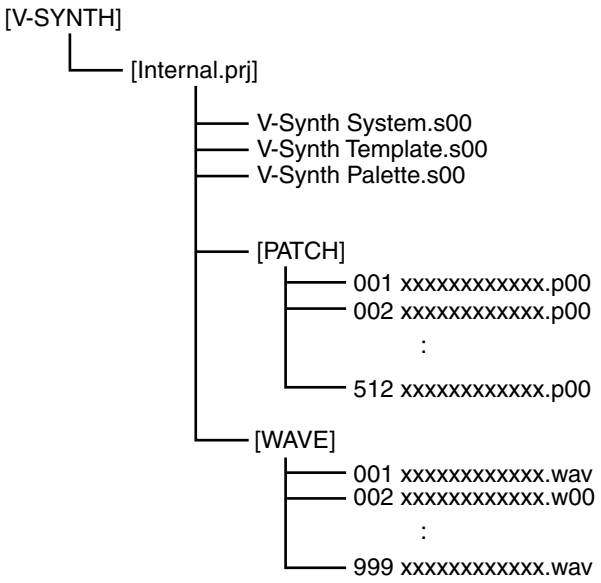
As seen from your computer, the V-Synth's file structure is as follows.

Do not perform operations on your computer to erase (format) or rename these folders or files.

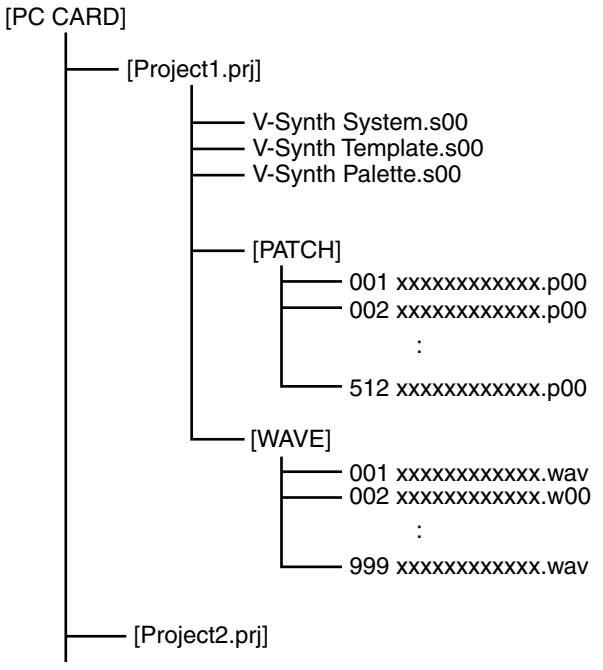
If the V-Synth stops operating correctly, break the USB connection between the computer and the V-Synth (p. 140, p. 142), and then execute the Factory Reset command (p. 147).

This will erase all the data that has been saved on the V-Synth. As a precaution against such occurrences, we recommend that you always make a backup of your data (p. 142).

Internal Memory



PC Card



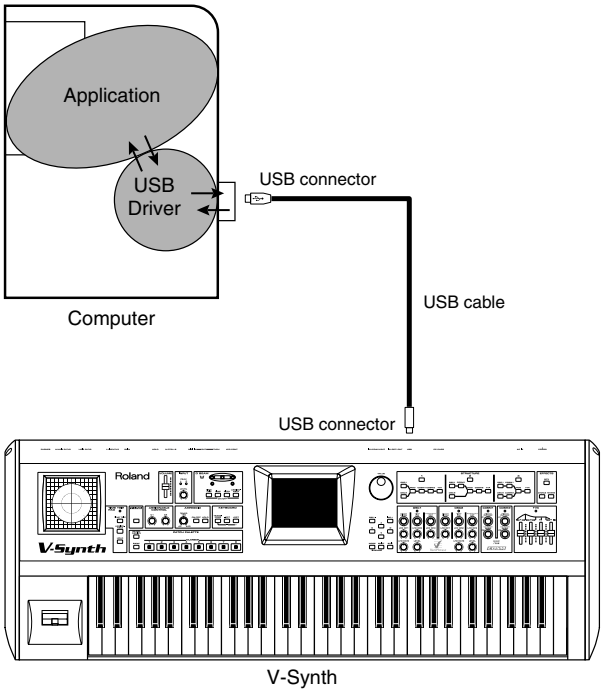
Exchanging MIDI Messages with Your Computer (MIDI Mode)

Driver Installation and Settings

In order to use the V-Synth as a USB MIDI device from your computer, you must first install the USB MIDI driver.

What is the USB MIDI Driver?

The USB MIDI Driver is a software which passes data between the V-Synth and the application (sequencer software, etc.) that is running on the USB-connected computer.
The USB MIDI Driver sends data from the application to the V-Synth, and passes data from the V-Synth to the application.



In order to use USB in MIDI mode, you must install the driver from the included CD-ROM into your computer.
The correct driver and the installation procedure will depend on your system and on the other programs you are using. Be sure to read the Readme file on the CD-ROM before installation.

Windows XP/2000
→ **\Driver\V-Synth\Usb_xp2k\README_E.HTM**

Windows Me
→ **\Driver\V-Synth\Usb_me\README_E.HTM**

Mac OS X
→ **\Driver\V-Synth\MacOSX\Readme-E.HTM**

Mac OS 9 (9.04 or later) OMS
→ **\Driver\V-Synth\MacOS9\English\Readme OMS-E.HTM**

Mac OS 9 (9.04 or later) FreeMIDI

→ **\Driver\V-Synth\MacOS9\English\Readme FM-E.HTM**

Using V-Synth Librarian

V-Synth Librarian is an application that lets you use your computer to manage projects, patches, and waves in the V-Synth's internal memory or on a PC card as a data library.

NOTE

V-Synth Librarian can handle only "V-Synth" projects, patches, and waves. It does not support "V-Card (VC-1, VC-2)" data.

Features of V-Synth Librarian

- You can drag and drop patches or wave data to copy or move them between multiple projects while preserving the links between patches.
- You can easily bring together the desired patches from multiple projects, and arrange them in the order in which you will actually use them in your song.
- Since you can import various types of wave data (WAV/AIFF/VPW), audio data created using other software on your computer can be used in a V-Synth project.

* *Once you've saved a completed project on your PC's hard disk, send it via USB to the V-Synth's internal memory or PC card so that it can be used. For details on using this software, click "Help"-"Using V-Synth Librarian" in the menu that appears after the software has been started up.*

Installation

Windows users

To install the software, double-click the installer icon located in \Librarian.

MacOS users

To install the software, double-click the installer icon located in \Librarian\English.

System Requirements

Windows

Operating System:

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

CPU/Clock:

Pentium®/Celeron™ processor 400 MHz or higher
Pentium® III 500 MHz or higher (recommended)

Memory (RAM):

128 MB or more
256 MB or more (recommended)

Display/Colors:

1024 x 768 or higher / 65,536 colors (16 bit High Color) or more

Hard Disk:

32 MB or more

MacOS

Operating System:

Mac OS (Classic) 9.0.4 or later
Mac OS (X) 10.2 or later

CPU/Clock:

PowerPC G3 233 MHz or higher (Classic)
PowerPC G3 500 MHz or higher (X)

Memory (RAM):

128 MB or more
256 MB or more (recommended)

Display/Colors:

1024 x 768 or higher / 32,000 colors or more

Hard Disk:

32 MB or more.

* *Roland Corporation assumes no liability whatsoever for any damages (including but not limited to loss of profit, loss of data, and other monetary damages) arising from the use of this software, or from the inability to use the software.*

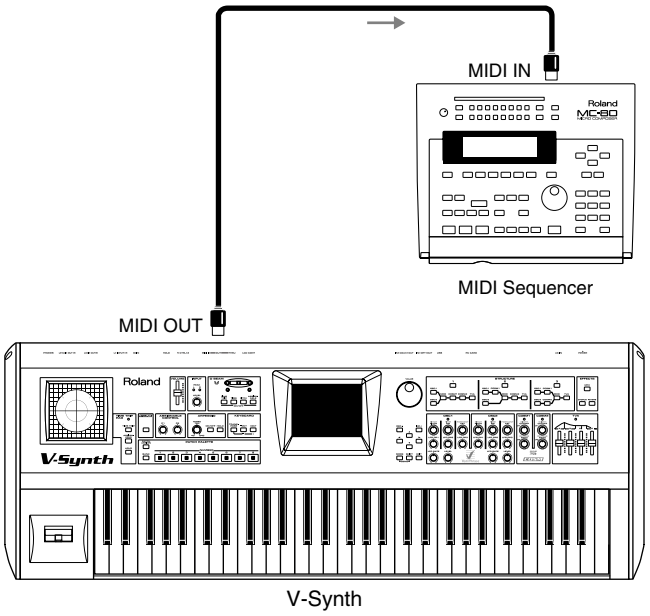
* *This product has been test studied on computers that meet the above requirements, but we cannot guarantee that it will operate on any computer that meets these requirements. Please be aware that even under the same conditions, differences in the design of a particular computer or differences in the operation environment may produce differences in processing capacity.*

Other Functions

Transmitting Data to an External MIDI Device (Data Transfer)

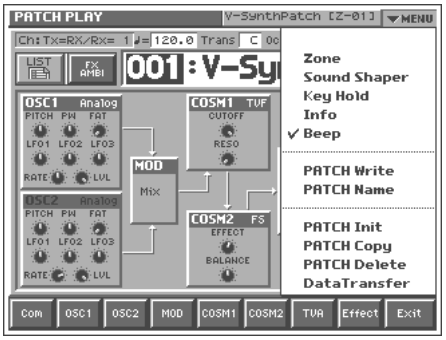
Patch, setup and system settings will be transmitted to an external MIDI device. This operation is called **bulk dump**. Use this operation when you want to connect another V-Synth and play it using the same settings, or to save your data on an external MIDI device as a precaution against possible loss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



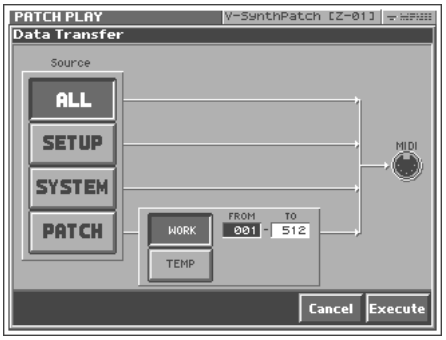
1. Touch <▼ MENU> in the upper right of the screen.

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, system

<SETUP>: Setup

<SYSTEM>: System

<PATCH>: Patch

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

<WORK>: Transmit patches from the work area. Use the "FROM" - "TO" fields to specify the range of patch numbers (001–512) 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 indicate "Transmitting..." When "COMPLETED!" is displayed, the transmission has been completed.

HINT

To halt during transmission, touch <ABORT>.

Reset to Default Factory Settings (Factory Reset)

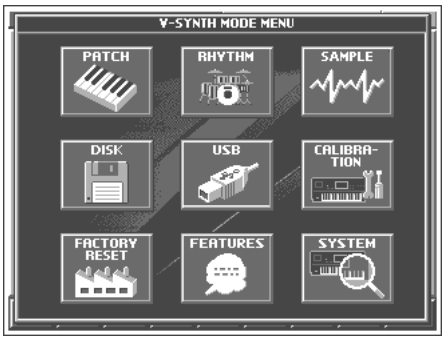
This restores all data in the V-Synth to the factory-set condition (Factory Reset).

NOTE

If there is important data you've created that's stored in the V-Synth's internal memory, all such data is discarded when a Factory Reset is performed. If you want to keep the existing data, save it on a memory card (p. 132), USB backing up onto a computer (p. 142) or transmit it to an external MIDI device and save it (p. 146).

1. Press [MODE].

The V-SYNTH MODE MENU window appears.



2. Touch <FACTORY RESET>.

The Factory Reset screen appears.

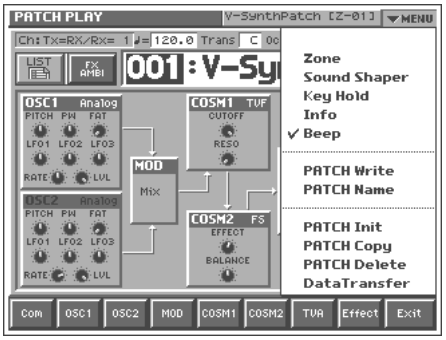
3. Touch <Execute> to execute the Factory Reset.

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

Viewing Various Information (Info)

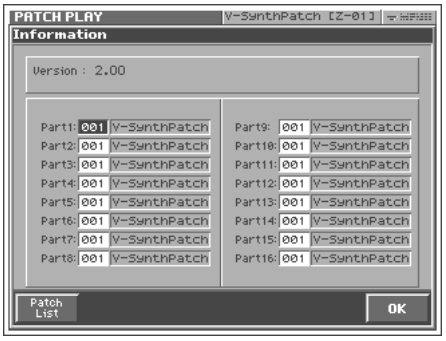
1. In the upper right of the screen, touch <▼ MENU>.

A pulldown menu appears.



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

The PATCH Information window appears.



This window shows the following information.

Version: The V-Synth's program version

Part: The number and name of the patch assigned to each part

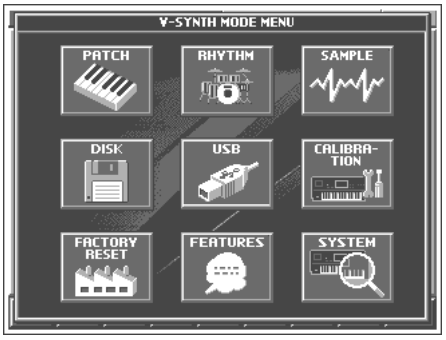
3. When you have finished viewing the information, touch <OK> to close the window.

Adjusting the Sensitivity of the Touch Screen/Time Trip Pad/D Beam Controller (Calibration Mode)

Displaying the CALIBRATION MENU Screen

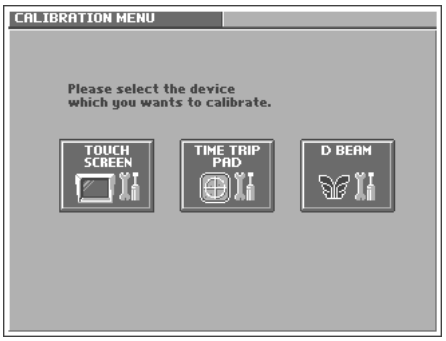
1. Press [MODE].

The V-SYNTH MODE MENU window appears.



2. Touch <CALIBRATION>.

The CALIBRATION MENU screen appears.

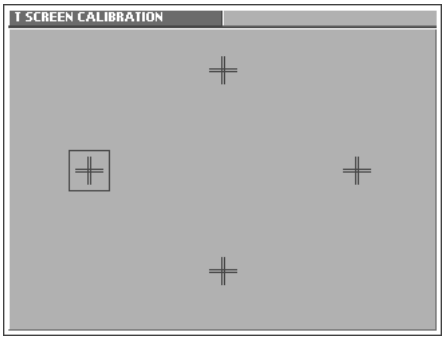


Adjusting the Sensitivity of the Touch Screen

Perform this adjustment if the touch panel no longer responds as you expect.

1. In the CALIBRATION MENU screen, touch <TOUCH SCREEN>.

The T SCREEN CALIBRATION screen appears.



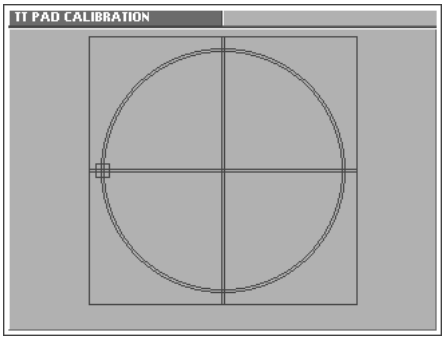
2. Touch the center of "+" symbol indicated by the square symbol in the screen, in the following order: left → top → right → bottom.

When you have touched all four points, the screen will close, and the sensitivity of the touch screen will be calibrated.

Adjusting the Sensitivity of the Time Trip Pad

Perform this adjustment if the Time Trip pad no longer responds as you expect.

1. **In the CALIBRATION MENU screen, touch <TIME TRIP PAD>.**
   The TT PAD CALIBRATION screen appears.

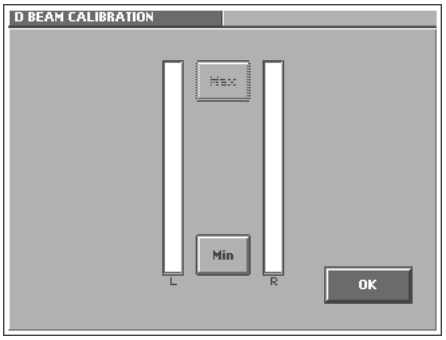


2. **On the Time Trip pad, touch the points indicated by the square symbol in the screen, in the following order: left → top → right → bottom.**
   When you have touched all four points, the screen will close, and the sensitivity of the Time Trip pad will be calibrated.

Adjusting the Sensitivity of the D Beam Controller

Perform this adjustment if the D Beam controller is functioning incorrectly, such as responding even though you have not operated it.

1. **In the CALIBRATION MENU screen, touch <D BEAM>.**
   The D Beam CALIBRATION screen appears.



   When you place your hand over the D Beam controller, the "L" or "R" level meter in the screen will move upward or downward.

2. **First specify the location at which the D Beam controller will begin responding (i.e., the minimum value).**
   Move your hand toward the D Beam controller, and touch <Min> at the point where you want the controller to begin responding.

3. **Next specify the location at which the D Beam controller will reach the peak (i.e., the maximum value).**
   Continue moving your hand toward the D Beam controller, and touch <Max> at the point where you want the peak response to occur.

4. **While watching the level meter in the screen, raise and lower your hand to check the response of the D Beam controller.**

5. **If you are satisfied with the response, touch <OK>.**
   The sensitivity of the D Beam controller will be calibrated.

Appendices

Parameter List

Patch Parameters

Common Group (p. 78)

Parameter		Value
General		
Structure Type		TYPE1, TYPE2, TYPE3
Portamento	Portamento Switch	OFF, ON
Mode	Portamento Mode	NORMAL, LEGATO
Type	Portamento Type	RATE, TIME
Time	Portamento Time	0–127
Time Velo Sens	Portamento Time Velocity Sensitivity	-63– +63
Mono/Poly		Mono, Poly
Legato	Legato Switch	OFF, ON
D Beam/Bender		
Octave Shift		-3– +3
D Beam	D Beam Type	OFF, Time Trip, Time, Pitch, Assignable
Bend Range Up	Pitch Bend Range Up	0–48
Bend Range Down	Pitch Bend Range Down	0–48
TT Pad		
Mode	Time Trip Pad Mode	XY, TT
Hold	Time Trip Pad Hold Switch	OFF, ON
Matrix Ctrl		
Source	Matrix Control Source	OFF, CC01–31, CC33–95, BEND, AFT, +PAD-X/Y, PAD-X/Y, TRIP-R, BEAM-L/R, KNOB1/2, VELO, KEYF
Sens	Matrix Control Sens	-63– +63
Destination 1, 2	Matrix Control Destination 1, 2	(*)
Arpeggio		
Arpeggio Switch		OFF, ON
Patch Tempo		20.0–250.0
Hold	Arpeggio Hold Switch	OFF, ON
Octave Range	Arpeggio Octave Range	-3– +3
KBD Velo	Arpeggio Keyboard Velocity	REAL, 1–127
Duration	Arpeggio Duration	0–100%
Motif	Arpeggio Motif	UP, DOWN, UP&DOWN, RANDOM, NOTE ORDER, RHYTHM, PHRASE, AUTO
Shuffle Rate	Arpeggio Shuffle Rate	0–100%
Shuffle Resolution	Arpeggio Shuffle Resolution	(Sixteenth note), (Eighth note)
Tune		
Patch Coarse Tune		-48– +48
Patch Fine Tune		-50– +50
Scale Tune	Scale Tune Switch	OFF, ON
Scale Tune C–B		-100– +100
Zone		
Current Zone		Zone 01–16
Zone 01–16 Range Hi		C-1–G9

* OFF, OSC1/2-PITCH, OSC1/2-TIME/PW, OSC1/2-FORMA/FAT, OSC1/2-LVL, OSC1/2-PENV-ATK, OSC1/2-PENV-DCY, OSC1/2-PENV-REL, OSC1/2-TENV-ATK, OSC1/2-TENV-DCY, OSC1/2-TENV-REL, OSC1/2-FENV-ATK, OSC1/2-FENV-DCY, OSC1/2-FENV-REL, OSC1/2-AENV-ATK, OSC1/2-AENV-DCY, OSC1/2-AENV-REL, OSC1/2-LFO-RATE, OSC1/2-LFO-PCH, OSC1/2-LFO-TM/PW, OSC1/2-LFO-FR/FT, OSC1/2-LFO-LVL, CSM1/2-PRM1, CSM1/2-PRM2, CSM1/2-ENV1-ATK, CSM1/2-ENV1-DCY, CSM1/2-ENV1-REL, CSM1/2-ENV2-ATK, CSM1/2-ENV2-DCY, CSM1/2-ENV2-REL, CSM1/2-LFO-RATE, CSM1/2-LFO-PRM1, CSM1/2-LFO-PRM2, TVA-LVL, TVA-ENV-ATK, TVA-ENV-DCY, TVA-ENV-REL, TVA-LFO-RATE, TVA-LFO-LVL, TVA-LFO-PAN, MFX-SEND, CHO-SEND, REV-SEND, MFX-PRM1–3, TVA-PAN

OSC1/OSC2 Group (p. 85)

Parameter		Value
Oscillator Switch		OFF, ON
OSC Type		
Oscillator Type		ANALOG, PCM, EXT IN
Wave Gain		-12– +12 dB
Waveform	Analog Oscillator Waveform	SAW, SQUARE, TRIANGLE, SINE, RAMP, JUNO, HQ-SAW, HQ-SQUARE, NOISE, LA-SAW, LA-SQUARE, SUPER-SAW, FEEDBACK-OSC, X-MOD-OSC
Impact	Analog Oscillator Impact	0.0–4.0
Time Trip Sw	Time Trip Switch	OFF, ON
Beat Keep	Time Trip Beat Keep	OFF, ON
Waveform	PCM Oscillator Waveform	000–999
Vari Sw	PCM Oscillator Vari Switch	OFF, ON
Start Offset	PCM Oscillator Start Offset	0–**
Playback Mode	PCM Oscillator Playback Mode	RETRIGGER, LEGATO, STEP, EVENT
Loop	PCM Oscillator Loop Switch	OFF, ON
Robot Voice	PCM Oscillator Robot Voice Switch	OFF, ON
Tempo Sync	PCM Oscillator Tempo Sync Switch	OFF, ON
Pitch		
Pitch	Oscillator Pitch	-63 – +63
Pitch KF	Oscillator Pitch Key Follow	-200– +200
Coarse	Oscillator Coarse Tune	-48– +48
Fine	Oscillator Fine Tune	-50– +50
Random	Oscillator Random Pitch Depth	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 200, 300, 400, 500, 600, 700, 800, 900, 1000, 1100, 1200
Pit LFO Dp	Oscillator Pitch LFO Depth	-63– +63
Velocity Curve	Envelope Velocity Curve	0–7
Velocity Sens	Envelope Velocity Sensitivity	-63– +63
Velocity A-Sens	Envelope Attack Time Velocity Sensitivity	-63– +63
Velocity D-Sens	Envelope Decay Time Velocity Sensitivity	-63– +63
Velocity R-Sens	Envelope Release Time Velocity Sensitivity	-63– +63
ADSR Attack	Envelope Attack Time	0–127, note (*)
ADSR Decay	Envelope Decay Time	0–127, note (*)
ADSR Sustain	Envelope Sustain Level	0–127
ADSR Release	Envelope Release Time	0–127, note (*)
Env Depth	Envelope Depth	-63– +63
Env Time KF	Envelope Time Key Follow	-200– +200
Pulse Width (ANALOG)		
Pulse Width		-63– +63
PW KF	Pulse Width Key Follow	-200– +200
PW LFO Depth	Pulse Width LFO Depth	-63– +63
Velocity Curve	Envelope Velocity Curve	0–7
Velocity Sens	Envelope Velocity Sensitivity	-63– +63
Velocity A-Sens	Envelope Attack Time Velocity Sensitivity	-63– +63
Velocity D-Sens	Envelope Decay Time Velocity Sensitivity	-63– +63
Velocity R-Sens	Envelope Release Time Velocity Sensitivity	-63– +63
ADSR Attack	Envelope Attack Time	0–127
ADSR Decay	Envelope Decay Time	0–127
ADSR Sustain	Envelope Sustain Level	0–127
ADSR Release	Envelope Release Time	0–127
Env Depth	Envelope Depth	-63– +63
Env Time KF	Envelope Time Key Follow	-200– +200

Parameter		Value
Fat (ANALOG)		
Fat		0–127
Fat KF	Fat Key Follow	-200– +200
Fat LFO Depth		-63– +63
Velocity Curve	Envelope Velocity Curve	0–7
Velocity Sens	Envelope Velocity Sensitivity	-63– +63
Velocity A-Sens	Envelope Attack Time Velocity Sensitivity	-63– +63
Velocity D-Sens	Envelope Decay Time Velocity Sensitivity	-63– +63
Velocity R-Sens	Envelope Release Time Velocity Sensitivity	-63– +63
ADSR Attack	Envelope Attack Time	0–127, note (*)
ADSR Decay	Envelope Decay Time	0–127, note (*)
ADSR Sustain	Envelope Sustain Level	0–127
ADSR Release	Envelope Release Time	0–127, note (*)
Env Depth	Envelope Depth	-63– +63
Env Time KF	Envelope Time Key Follow	-200– +200
Time (PCM)		
Time		-63– +63
Time KF	Time Key Follow	-200– +200
Time Offset		BWD, ZERO, FWD
Time LFO Depth		-63– +63
Velocity Curve	Envelope Velocity Curve	0–7
Velocity Sens	Envelope Velocity Sensitivity	-63– +63
Velocity A-Sens	Envelope Attack Time Velocity Sensitivity	-63– +63
Velocity D-Sens	Envelope Decay Time Velocity Sensitivity	-63– +63
Velocity R-Sens	Envelope Release Time Velocity Sensitivity	-63– +63
ADSR Attack	Envelope Attack Time	0–127, note (*)
ADSR Decay	Envelope Decay Time	0–127, note (*)
ADSR Sustain	Envelope Sustain Level	0–127
ADSR Release	Envelope Release Time	0–127, note (*)
Env Depth	Envelope Depth	-63– +63
Env Time KF	Envelope Time Key Follow	-200– +200
Formant (PCM)		
Formant		-63– +63
Formant KF	Formant Key Follow	-200– +200
Energy		OFF, 1–127
Fmt LFO Depth	Formant LFO Depth	-63– +63
Velocity Curve	Envelope Velocity Curve	0–7
Velocity Sens	Envelope Velocity Sensitivity	-63– +63
Velocity A-Sens	Envelope Attack Time Velocity Sensitivity	-63– +63
Velocity D-Sens	Envelope Decay Time Velocity Sensitivity	-63– +63
Velocity R-Sens	Envelope Release Time Velocity Sensitivity	-63– +63
ADSR Attack	Envelope Attack Time	0–127, note (*)
ADSR Decay	Envelope Decay Time	0–127, note (*)
ADSR Sustain	Envelope Sustain Level	0–127
ADSR Release	Envelope Release Time	0–127, note (*)
Env Depth	Envelope Depth	-63– +63
Env Time KF	Envelope Time Key Follow	-200– +200
OSC TVA		
Level		0–127
Level KF	Level Key Follow	-200– +200
Level LFO Dp	Level LFO Depth	-63– +63
Velocity Curve	Envelope Velocity Curve	0–7
Velocity Sens	Envelope Velocity Sensitivity	-63– +63
Velocity A-Sens	Envelope Attack Time Velocity Sensitivity	-63– +63
Velocity D-Sens	Envelope Decay Time Velocity Sensitivity	-63– +63
Velocity R-Sens	Envelope Release Time Velocity Sensitivity	-63– +63
ADSR Attack	Envelope Attack Time	0–127, note (*)
ADSR Decay	Envelope Decay Time	0–127, note (*)
ADSR Sustain	Envelope Sustain Level	0–127
ADSR Release	Envelope Release Time	0–127, note (*)
Env Time KF	Envelope Time Key Follow	-200– +200

Parameter		Value
LFO		
Waveform	LFO Waveform	SINE, TRI, SAW, SQR, RND, TRP, S&H, CHAOS
Offset	LFO Offset	-100, -50, 0, +50, +100
Key Sync	LFO Key Sync Switch	OFF, ON
Delay Time	LFO Delay Time	0–127
Rate	LFO Rate	0–127, note (*)
Fade Mode	LFO Fade Mode	ON <<, ON >>, OFF <<, OFF >>
Fade Time	LFO Fade Time	0–127

*

(Thirty-second note), (Sixteenth note), (Eighth-note triplet), (Dotted sixteenth note), (Eighth note), (Quarter-note triplet), (Dotted eighth note), (Quarter note), (Half-note triplet), (Dotted quarter note), (Half note), (Whole-note triplet), (Dotted half note), (Whole note), (Double-note triplet), (Dotted whole note), (Double note)

Mod Group (p. 92)

Parameter		Value
Modulator Switch		OFF, ON
Mod Type		
Modulator Type		MIX, RING, FM, ENV RING, OSC SYNC
Original Level	Modulator Original Level	0–127
Attack	Modulator Attack Time	0–127
Release	Modulator Release Time	0–127

COSM1/COSM2 Group (p. 92)

Parameter		Value
COSM Switch		OFF, ON
COSM Type		
COSM Type		THRU, OD/DS, W-SHAPE, AMP, SPEAKER, RESONATOR, SBF1, SBF2, COMB, DUAL, TVF, DYN-TVF, COMP, LIMITER, F-SHIFT, LO-FI, TB-FILTER
LFO		
Waveform	LFO Waveform	SINE, TRI, SAW, SQR, RND, TRP, S&H, CHAOS
Offset	LFO Offset	-100, -50, 0, +50, +100
Key Sync	LFO Key Sync Switch	OFF, ON
Delay Time	LFO Delay Time	0–127
Rate	LFO Rate	0–127, note (*)
Fade Mode	LFO Fade Mode	ON <<, ON >>, OFF <<, OFF >>
Fade Time	LFO Fade Time	0–127

*

(Thirty-second note), (Sixteenth note), (Eighth-note triplet), (Dotted sixteenth note), (Eighth note), (Quarter-note triplet), (Dotted eighth note), (Quarter note), (Half-note triplet), (Dotted quarter note), (Half note), (Whole-note triplet), (Dotted half note), (Whole note), (Double-note triplet), (Dotted whole note), (Double note)

For details on the parameters of each COSM section, refer to **"COSM Parameters"** (p. 161).

TVA Group (p. 93)

Parameter		Value
TVA Switch		OFF, ON
TVA		
Level		0–127
Level KF	Level Key Follow	-200– +200
Lvl LFO Dp	Level LFO Depth	-63– +63
Pan		L64–0–63R
Pan KF	Pan Key Follow	-200– +200
Pan LFO Dp	Pan LFO Depth	-63– +63
Velocity Curve	Envelope Velocity Curve	0–7
Velocity Sens	Envelope Velocity Sensitivity	-63– +63
Velocity A-Sens	Envelope Attack Time Velocity Sensitivity	-63– +63
Velocity D-Sens	Envelope Decay Time Velocity Sensitivity	-63– +63
Velocity R-Sens	Envelope Release Time Velocity Sensitivity	-63– +63
ADSR Attack	Envelope Attack Time	0–127, note (*)
ADSR Decay	Envelope Decay Time	0–127, note (*)
ADSR Sustain	Envelope Sustain Level	0–127
ADSR Release	Envelope Release Time	0–127, note (*)
Env Time KF	Envelope Time Key Follow	-200– +200
LFO		
Waveform	LFO Waveform	SINE, TRI, SAW, SQR, RND, TRP, S&H, CHAOS
Offset	LFO Offset	-100, -50, 0, +50, +100
Key Sync	LFO Key Sync Switch	OFF, ON
Delay Time	LFO Delay Time	0–127
Rate	LFO Rate	0–127, note (*)
Fade Mode	LFO Fade Mode	ON <<, ON >>, OFF <<, OFF >>
Fade Time	LFO Fade Time	0–127

*

(Thirty-second note), (Sixteenth note), (Eighth-note triplet), (Dotted sixteenth note), (Eighth note), (Quarter-note triplet), (Dotted eighth note), (Quarter note), (Half-note triplet), (Dotted quarter note), (Half note), (Whole-note triplet), (Dotted half note), (Whole note), (Double-note triplet), (Dotted whole note), (Double note)

Effect Group (p. 96)

Parameter		Value
Routing		
MFX Send	MFX Send Level	0–127
CHO Send	Chorus Send Level	0–127
REV Send	Reverb Send Level	0–127
Output Assign		MULTI, MAIN, DIR
MFX	MFX On/Off Switch	OFF, ON
MFX Type		00 (Thru)–41
MFX Master Level		0–127
MFX To CHO	MFX Chorus Send Level	0–127
MFX To REV	MFX Reverb Send Level	0–127
CHO	Chorus On/Off Switch	OFF, ON
CHO Type		00 (Off)–08
CHO Master Level	Chorus Master Level	0–127
CHO To REV	Chorus Reverb Send Level	0–127
REV	Reverb On/Off Switch	OFF, ON
REV Type		00 (Off)–10
REV Master Level	Reverb Master Level	0–127
MFX		
MFX Type		00 (Thru)–41
CHO		
CHO Type	Chorus Type	00 (Off)–08
REV		
REV Type	Reverb Type	00 (Off)–10

☞
- For details on the parameters of each MFX section, refer to **"MFX Parameters"** (p. 166).
- For details on the parameters of each chorus section, refer to **"Chorus Parameters"** (p. 188).
- For details on the parameters of each reverb section, refer to **"Reverb Parameters"** (p. 188).

System Parameters

Common Group (p. 122)

Parameter		Value
Master		
Master Tune		415.3–466.2 Hz
Master Key Shift		-24– +24
Master Level		0–127
Patch Remain	Patch Remain Switch	OFF, ON
Powerup Mode		Last Set, Default
IO		
External Input Type		STEREO L R, MONO MIX, MONO L, MONO R
Mix/Parallel		MIX, PARALLEL
Output Gain		-12– +12 dB
Digital Output Freq	Digital Output Frequency	44.1, 48, 96 KHz
EQ		
4 Band EQ	4-Band Equalizer Switch	OFF, ON
LOW Freq	Low Frequency	50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000 Hz
LOW Gain		-15– +15 dB
MID 1 Q		0.5, 0.7, 1.0, 2.0, 4.0, 8.0
MID 1 Freq	Mid 1 Frequency	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
MID 1 Gain		-15– +15 dB
MID 2 Q		0.5, 0.7, 1.0, 2.0, 4.0, 8.0
MID 2 Freq	Mid 2 Frequency	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
MID 2 Gain		-15– +15 dB
HIGH Freq	High Frequency	2000, 4000, 5000, 6300, 8000, 10000, 12500, 16000, 20000 Hz
HIGH Gain		-15– +15 dB
TOTAL Gain		-15– +15 dB
MIDI/USB		
Device ID	Device ID Number	17–32
Clock Source		INTERNAL, EXTERNAL
Rx PC	Receive Program Change Switch	OFF, ON
Rx Bank	Receive Bank Select Switch	OFF, ON
Rx Sys-Ex	Receive System Exclusive Switch	OFF, ON
Tx Edit	Transmit Edit Data Switch	OFF, ON
Clock Out		OFF, ON
USB–MIDI Thru Sw	USB–MIDI Through Switch	OFF, ON
Part MIDI		
Part 1–16 Rx Sw	Part 1–16 Receive Switch	OFF, ON
Part 1–16 Rx Ch	Part 1–16 Receive Channel	1–16

Controller Group (p. 125)

Parameter		Value
Tx		
Patch Tx Ch	Patch Transmit Channel	1–16, RX CH, OFF
Tx PC	Transmit Program Change Switch	OFF, ON
Tx Bank	Transmit Bank Select Switch	OFF, ON
Tx Active Sens	Transmit Active Sensing Switch	OFF, ON
KBD		
KBD Sens	Keyboard Sensitivity	LIGHT, MEDIUM, HEAVY
KBD Velocity	Keyboard Velocity	REAL, 1–127
After Sens	Aftertouch Sensitivity	0–200
Local Sw	Local Switch	OFF, ON
Remote KBD Sw	Remote Keyboard Switch	OFF, ON
Panic Key	Panic Key	C2–C7
TT Pad/Knob		
X Assign-XY		OFF, CC01–31, CC33–95
Y Assign-XY		OFF, CC01–31, CC33–95
X Assign-TT	X Assign-Time Trip	OFF, CC01–31, CC33–95
Y Assign-TT	Y Assign-Time Trip	OFF, CC01–31, CC33–95
Knob 1, 2 Assign		OFF, CC01–31, CC33–95
Beam		
D Beam Sens L, R	D Beam Sensitivity L, R	0–200
D Beam 1–4 Assign L, R		OFF, CC01–31, CC33–95
Pedal		
Hold Polarity	Hold Pedal Polarity	STANDARD, REVERSE
Pedal 1, 2 Assign		OFF, CC01–31, CC33–95, BEND UP, BEND DOWN, AFTERTOUCH

V-LINK Group (p. 128)

Parameter		Value
Tx		
Channel	V-LINK MIDI Channel	1–16
Audio	V-LINK Audio Switch	OFF, ON
Output	V-LINK Keyboard Output Fade Switch	OFF, ON
Local Sw	V-LINK Patch Palette Local Switch	OFF, ON
TT Pad/Knob		
Local Sw	V-LINK Time Trip Pad Local Switch	OFF, ON
X Assign-XY	V-LINK X Assign-XY	OFF, PLAYBACK-SPEED, DISSOLVE-TIME, AUDIO-LEVEL, COLOR-CB, COLOR-CR, BRIGHTNESS, VFX1, VFX2, VFX3, VFX4, OUTPUT-FADE, T-BAR
Y Assign-XY	V-LINK X Assign-XY	OFF, PLAYBACK-SPEED, DISSOLVE-TIME, AUDIO-LEVEL, COLOR-CB, COLOR-CR, BRIGHTNESS, VFX1, VFX2, VFX3, VFX4, OUTPUT-FADE, T-BAR
Assign-TT	V-LINK Assign-Time Trip	OFF, TIME-TRIP
Local Sw	V-LINK Knob1, 2 Local Switch	OFF, ON
1, 2 Assign	V-LINK Knob1, 2 Assign	OFF, PLAYBACK-SPEED, DISSOLVE-TIME, AUDIO-LEVEL, COLOR-CB, COLOR-CR, BRIGHTNESS, VFX1, VFX2, VFX3, VFX4, OUTPUT-FADE
Beam		
Local Sw	V-LINK D Beam Local Switch	OFF, ON
1–4 Assign L, R	V-LINK D Beam1–4 Assign L, R	OFF, PLAYBACK-SPEED, DISSOLVE-TIME, AUDIO-LEVEL, COLOR-CB, COLOR-CR, BRIGHTNESS, VFX1, VFX2, VFX3, VFX4, OUTPUT-FADE
Lever		
Mod Local Sw	V-LINK Modulation Local Switch	OFF, ON
Mod Assign	V-LINK Modulation Assign	OFF, PLAYBACK-SPEED, DISSOLVE-TIME, AUDIO-LEVEL, COLOR-CB, COLOR-CR, BRIGHTNESS, VFX1, VFX2, VFX3, VFX4, OUTPUT-FADE
Bend Local Sw	V-LINK Pitch Bend Local Switch	OFF, ON
Bend Assign	V-LINK Pitch Bend Assign	OFF, PLAYBACK-SPEED, DISSOLVE-TIME, AUDIO-LEVEL, COLOR-CB, COLOR-CR, BRIGHTNESS, VFX1, VFX2, VFX3, VFX4, OUTPUT-FADE
After Local Sw	V-LINK Aftertouch Local Switch	OFF, ON
After Assign	V-LINK Aftertouch Assign	OFF, PLAYBACK-SPEED, DISSOLVE-TIME, AUDIO-LEVEL, COLOR-CB, COLOR-CR, BRIGHTNESS, VFX1, VFX2, VFX3, VFX4, OUTPUT-FADE

COSM List

COSM Parameters

COSM provides 16 types. This section explains the features of each COSM, and the functions of the parameters.

☞ Explanations for each COSM Type are given on the following pages.

Overdrive / Distortion	OD/DS	(p. 161)
Wave Shape	W-SHAPE	(p. 161)
Amp Simulator	AMP	(p. 162)
Speaker Simulator	SPEAKER	(p. 162)
Resonator	RESONATOR	(p. 162)
1st order SideBandFilter	SBF1	(p. 162)
2nd order SideBandFilter	SBF2	(p. 163)
Comb Filter	COMB	(p. 163)
Dual Filter	DUAL	(p. 163)
TVF	TVF	(p. 164)
Dynamic TVF	DYN-TVF	(p. 164)
Polyphonic Compressor	COMP	(p. 164)
Polyphonic Limiter	LIMITER	(p. 164)
Frequency Shifter	F-SHIFT	(p. 165)
Lo-Fi Processor	LO-FI	(p. 165)
TB Filter	TB Filter	(p. 165)

MEMO

Parameters marked by "#1"–"#4" can be selected as a destination parameter for matrix control (Destination). These correspond as follows.

#1: Destination CSM1/2-PRM1
#2: Destination CSM1/2-PRM2
#3: Destination CSM1/2-LFO-PRM1
#4: Destination CSM1/2-LFO-PRM2

Overdrive / Distortion

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
COSM Type		
Drive Type	OD, DS	Selects whether to use overdrive (OD) or distortion (DS).
Output Level	0–127	Output Level
Drive		
Drive #1	0–127	Degree of distortion
Drive LFO Depth #3	-63– +63	Amount of LFO applied to distortion
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		
Tone		
Tone #2	0–127	Tonal character
Tone KF	-200– +200	Key follow setting for tone
Tone LFO Depth #4	-63– +63	Amount of LFO applied to tone
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		
LFO		
* *For details on LFO settings, refer to **"Making LFO Settings"** (p. 95).*		

Wave Shape

You can use a variety of waveforms to create and distort the sound.

Parameter	Value	Description
COSM Type		
Shape Type	1–6	Type of waveform
Output Level	0–127	Output Level
Drive		
Drive #1	0–127	Degree of distortion
Drive LFO Depth #3	-63– +63	Amount of LFO applied to distortion
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		
Tone		
Tone #2	0–127	Tonal character
Tone KF	-200– +200	Key follow setting for tone
Tone LFO Depth #4	-63– +63	Amount of LFO applied to tone
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		
LFO		
* *For details on LFO settings, refer to **"Making LFO Settings"** (p. 95).*		

Amp Simulator

Simulates an amp.

Parameter	Value	Description
COSM Type		
Amp Type	1–3	Type of guitar amp
Bass	0–127	Tone of the bass/mid/treble range
Middle		
Treble		
Output Level	0–127	Output Level
Gain		
Gain #1	0–127	Degree of distortion
Gain LFO Depth #3	-63– +63	Amount of LFO applied to distortion
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		
LFO		
* *For details on LFO settings, refer to **"Making LFO Settings"** (p. 95).*		

Speaker Simulator

Simulates the speaker type.

Parameter	Value	Description
COSM Type		
Speaker Type	1–12	

Resonator

Simulates the resonance of a guitar body.

Parameter	Value	Description
COSM Type		
Filter Type	BANJO, AC.GTR, RE.GTR	Type of filter (guitar)
Size		
Size #1	0–127	Body size
Size KF	-200– +200	Key follow setting for guitar body
Size LFO Depth #3	-63– +63	Amount of LFO applied to guitar body
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		
Balance		
Balance #2	0–127	Volume balance between the direct sound and the effect sound
Balance LFO Depth #4	-63– +63	Amount of LFO applied to the volume balance
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		
LFO		
* *For details on LFO settings, refer to **"Making LFO Settings"** (p. 95).*		

1st order SideBandFilter

By boosting the fundamental and overtones, you can apply a pitch to unpitched input sounds such as a noise or a drum phrase.

Parameter	Value	Description
COSM Type		
HPF	0–127	Cutoff frequency of the high pass filter
LPF	0–127	Cutoff frequency of the low pass filter
LPF KF	-200– +200	Key follow setting for cutoff frequency of low-pass filter
Sub	-100– +100	Sub detune
Octave	-2, -1, 0	Octave setting
Width		
Width #1	0–127	Bandwidth
Width KF	-200– +200	Key follow setting for bandwidth
Dyn Env	-63– +63	Envelope depth for the input sound
Width LFO Depth #3	-63– +63	Amount of LFO applied to bandwidth
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		
Detune		
Detune #2	0–127	Detune
Dyn Env	-63– +63	Envelope depth for the input sound
Detune LFO Depth #4	-63– +63	Amount of LFO applied to detune
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		
LFO		
* *For details on LFO settings, refer to **"Making LFO Settings"** (p. 95).*		

2nd order SideBandFilter

By boosting the fundamental and overtones, you can apply a pitch to unpitched input sounds such as noise or a drum phrase. This lets you create a stronger effect than the first-order sideband filter.

Parameter	Value	Description
COSM Type		
Q	0–127	Frequency bandwidth
LPF	0–127	Cutoff frequency of the low pass filter
LPF KF	-200– +200	Key follow setting for cut-off frequency of low-pass filter
Octave	-2, -1, 0	Octave setting
Width		
Width #1	0–127	Bandwidth
Width KF	-200– +200	Key follow setting for bandwidth
Dyn Env	-63– +63	Envelope depth for the input sound
Width LFO Depth #3	-63– +63	Amount of LFO applied to bandwidth
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		
Detune		
Detune #2	0–127	Detune
Dyn Env	-63– +63	Envelope depth for the input sound
Detune LFO Depth #4	-63– +63	Amount of LFO applied to detune
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		
LFO		
* *For details on LFO settings, refer to **"Making LFO Settings"** (p. 95).*		

Comb Filter

A comb filter can be used to boost or cut the fundamental or overtones.

Parameter	Value	Description
COSM Type		
Octave	-2, -1, 0, +1, +2	Octave setting
Tone		
Tone #1	0–127	Tonal character
Tone LFO Depth #3	-63– +63	Amount of LFO applied to tone
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		
Detune		
Detune #2	0–127	Detune
Detune LFO Depth #4	-63– +63	Amount of LFO applied to detune
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		
LFO		
* *For details on LFO settings, refer to **"Making LFO Settings"** (p. 95).*		

Dual Filter

Two filters can be connected in series or parallel.

Parameter	Value	Description
COSM Type		
Filter Type	LPF/HPF, LPF->HPF, BPF/BPF	Type of filter
Filter1/2		
Freq #1/#2	0–127	Cutoff frequency of the filter
Freq KF	-200– +200	Key follow setting for filter cutoff frequency
Reso	0–127	Resonance
Freq LFO Depth #3/#4	-63– +63	Amount of LFO applied to filter cutoff frequency
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		
LFO		
* *For details on LFO settings, refer to **"Making LFO Settings"** (p. 95).*		

TVF

Cuts off a specific frequency band to change a sounds brightness, thickness, and other qualities.

Parameter	Value	Description
COSM Type		
Filter Type	LPF, BPF, HPF, NOTCH, PEAK	Type of filter
db/Octave	-24dB/oct, -12dB/oct, -6dB/oct	Amount of attenuation per octave
Cutoff		
Freq #1	0–127	Cutoff frequency of the filter
Freq KF	-200– +200	Key follow setting for filter cutoff frequency
LFO Dp #3	-63– +63	Amount of LFO applied to filter cutoff frequency
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		
Resonance		
Reso #2	0–127	Resonance
R LFO Depth #4	-63– +63	Amount of LFO applied to resonance
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		
LFO		
* *For details on LFO settings, refer to **"Making LFO Settings"** (p. 95).*		

Dynamic TVF

Cuts off a specific frequency band to change a sounds brightness, thickness, and other qualities. A wah effect can be applied by using the volume of the input sound to vary the center frequency.

Parameter	Value	Description
COSM Type		
Filter Type	LPF, BPF, HPF, NOTCH, PEAK	Type of filter
db/Octave	-24dB/oct, -12dB/oct, -6dB/oct	Amount of attenuation per octave
Cutoff		
Freq #1	0–127	Cutoff frequency of the filter
Freq KF	-200– +200	Key follow setting for filter cutoff frequency
Dyn	-63– +63	Envelope depth for the input sound
LFO Dp #4	-63– +63	Amount of LFO applied to filter cutoff frequency
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		
Resonance		
Reso #2	0–127	Resonance
Dyn Env	-63– +63	Envelope depth for the input sound
R LFO Dp #4	-63– +63	Amount of LFO applied to resonance
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		
LFO		
* *For details on LFO settings, refer to **"Making LFO Settings"** (p. 95).*		

Polyphonic Compressor

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

Parameter	Value	Description
COSM Type		
Attack #1	0–127	Attack time
Sustain #2	0–127	Sustain level
Output Level	0–127	Output Level

Polyphonic Limiter

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

Parameter	Value	Description
COSM Type		
Thres	0–127	Sets the volume level at which the compression begins.
Ratio	2:1, 4:1, 16:1, 100:1	Compression ratio
Attack #1	0–127	Attack time
Release #2	0–127	Release time
Output	0–127	Output Level

Frequency Shifter

By shifting the frequency relationship of the fundamental and overtones, a human voice can be given a "groaning" character.

Parameter	Value	Description
Effect		
Effect #1	0–127	Effect depth
Effect KF	-200– +200	Key follow setting for the effect volume
Effect LFO Depth #3	-63– +63	Amount of LFO applied to the effect volume
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		
Balance		
Balance #2	0–127	Volume balance between the direct sound and the effect sound
Balance LFO Depth	-63– +63	Amount of LFO applied to the volume balance
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		
LFO		
* *For details on LFO settings, refer to **"Making LFO Settings"** (p. 95).*		

Lo-Fi Processor

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
COSM Type		
Bit Down	0–15	This setting is for reducing the bit count.
Sample Rate Down	Normal, 1/2, 1/4, 1/8, 1/16, 1/32	Sets the fraction of current sampling rates to be used for processing.
Filter		
Filter #1	0–127	Cutoff frequency of the filter
Filter KF	-200– +200	Key follow setting for filter cutoff frequency
Filter LFO Depth #3	-63– +63	Amount of LFO applied to filter cutoff frequency
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		
Balance		
Balance #2	0–127	Volume balance between the direct sound and the effect sound
Balance LFO Depth	-63– +63	Amount of LFO applied to the volume balance
LFO		
* *For details on LFO settings, refer to **"Making LFO Settings"** (p. 95).*		

TB Filter

This filter simulates the circuitry of the Roland TB-303. If Reso Follow is set to a value other than "0," the resonance will change according to the LFO cutoff frequency.

Parameter	Value	Description
COSM Type		
Gain	0–127	Output Level
LPF		
Freq #1	0–127	Cutoff frequency of the low pass filter
Freq KF	-200–+200	Key follow setting for low pass filter cutoff frequency
Freq LFO Depth	-63–+63	Amount of LFO applied to low pass filter cutoff frequency
Reso #2	0–127	Resonance of the low pass filter
Reso Follow	-63–+63	Amount of resonance applied to low pass filter cutoff frequency
HPF		
Freq	0–127	Cutoff frequency of the high pass filter
Freq KF	-200–+200	Key follow setting for high pass filter cutoff frequency
Freq LFO Depth	-63–+63	Amount of LFO applied to high pass filter cutoff frequency
* *For details on envelope settings, refer to **"Making Envelope Settings"** (p. 94).*		

You can control the "#1" and "#2" parameters using the panel COSM1/COSM2 [P1] and [P2] knobs and the matrix control Destination parameters "CSM1/2-PRM1" and "CSM1/2-PRM2."

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.

MEMO

Parameters marked by "#1"–"#3" can be selected as a destination parameter for matrix control (Destination MFX1–MFX3). These correspond as follows.

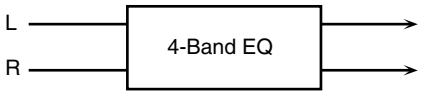
#1: Destination MFX1
#2: Destination MFX2
#3: Destination MFX3

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

01: Parametric EQ	Para EQ	(p. 167)
02: Graphic EQ	Graph EQ	(p. 167)
03: Resonant Filter	ResoFilt	(p. 167)
04: Isolator and Filter	Isolator	(p. 168)
05: Distortion / OD	DS / OD	(p. 168)
06: Amp Simulator	Gtr Amp	(p. 169)
07: Auto Wah	Auto Wah	(p. 170)
08: Humanizer	Humanizer	(p. 170)
09: Dynamic Processor	Dynamic	(p. 171)
10: Tape Echo Simulator	TapeEcho	(p. 171)
11: Stereo Delay	St Delay	(p. 172)
12: Multi Tap Delay	TapDelay	(p. 173)
13: Reverse Delay	RvsDelay	(p. 173)
14: Vocal Echo	VocalEcho	(p. 174)
15: Band Pass Delay	BP Delay	(p. 174)
16: Analog Delay->Chorus	AD->Cho	(p. 175)
17: Digital Chorus	DigiCho	(p. 175)
18: Space Chorus	SpaceCho	(p. 176)
19: Hexa Chorus	Hex Cho	(p. 176)
20: Analog Flanger	Ana Flgr	(p. 176)
21: BOSS Flanger	BOSSFlgr	(p. 177)
22: Step Flanger	StepFlgr	(p. 177)
23: Analog Phaser	Ana Phsr	(p. 178)
24: Digital Phaser	DigiPhsr	(p. 178)
25: Rotary	Rotary	(p. 179)
26: Tremolo/Auto Pan	Trem/Pan	(p. 179)
27: Stereo Pitch Shifter	PitchSft	(p. 180)
28: OD/DS->Cho/Flg	OD->Cho	(p. 180)
29: OD/DS->Delay	OD->Dly	(p. 181)
30: Cho/Flg->Delay	Cho->Dly	(p. 181)
31: Enh->Cho/Flg	Enh->Cho	(p. 182)
32: Enh->Delay	Enh->Dly	(p. 182)
33: Vocal Multi	VocalMt	(p. 183)
34: Guitar Multi	GuitarMt	(p. 183)
35: Bass Multi	BASS Mt	(p. 184)
36: EP Multi	EP Mt	(p. 185)
37: Keyboard Multi	Kbd Mt	(p. 185)
38: Phonograph	Phonogrp	(p. 186)
39: Radio Tuning	Radio	(p. 187)
40: Bit Rate Converter	Bit Conv	(p. 187)
41: Pseudo Stereo	PseudoSt	(p. 187)

01: Parametric EQ (Parametric Equalizer)

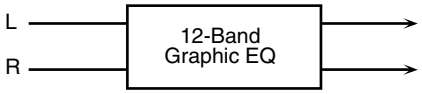
This is a 4 band (low range, midrange x 2, high range) stereo parametric equalizer.



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)

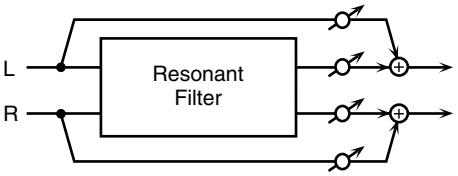
This simulates a 12-band stereo graphic equalizer.



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 #1	-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	DRY100:0WET–DRY0:100WET	Volume balance between the direct sound (DRY) and the effect sound (WET)

04: Isolator and Filter

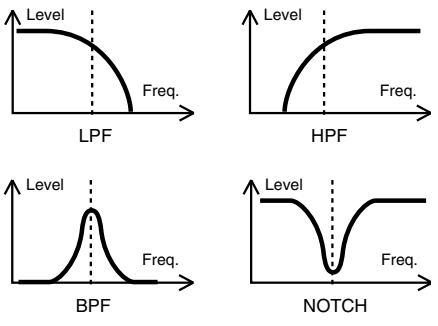
A 3-band isolator, filter, and low booster are connected in stereo in series.

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.

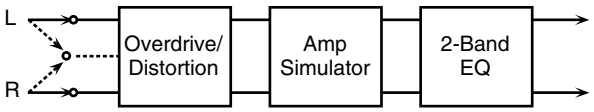
Parameter	Value	Description
Low Band Level #1	-60– +4 dB	These specify each level of the Low, Mid, and High frequency ranges. At -60 dB, the sound becomes inaudible. 0 dB is equivalent to the input level of the sound.
Mid Band Level #2		
Hi Band Level #3		
AP Low Sw	OFF, ON	Turns the Anti-Phase function 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	THRU, LPF, BPF, HPF, NOTCH	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.



Parameter	Value	Description
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)

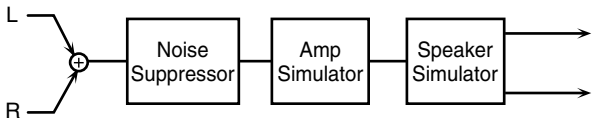
Overdrive produces a natural-sounding distortion similar to that produced by a vacuum tube amplifier. Distortion produces a more intense distortion than the overdrive effect.



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 #1	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.
Amp Type	JC-120, CLEAN TWIN, MATCH DRIVE, BG LEAD, MS1959I, MS1959II, MS1959I+II, SLDN LEAD, METAL 5150, METAL LEAD, OD-1, OD-2 TURBO, DISTORTION, FUZZ	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.	

Parameter	Value	Description
Volume	0–127	Volume and degree of distortion of the amp
Bass Middle Treble	0–127	Tone of the bass/mid/treble range * *Middle cannot be set if MATCH DRIVE is selected for the Amp Type.*
Presence	0–127	Tone for the ultra high frequency range
Master Volume	0–127	Volume of the entire amp
Brightness 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.

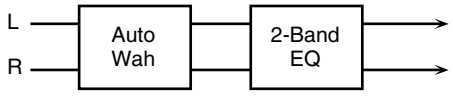
Type	Cabinet	Speaker	Microphone
SMALL	small open-back enclosure	10	dynamic
MIDDLE	open back enclosure	12 x 1	dynamic
JC-120	open back enclosure	12 x 2	dynamic
BUILT IN 1	open back enclosure	12 x 2	dynamic
BUILT IN 2	open back enclosure	12 x 2	condenser
BUILT IN 3	open back enclosure	12 x 2	condenser
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, BG STACK 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

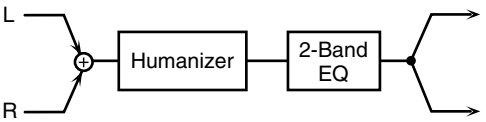
Wah is an effect that modifies the frequency characteristics of a filter over time, producing a unique tone. The wah effect can change in relation to the volume of the input signal, and/or cyclically.



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 #1	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 #2	0–127	Adjusts the sensitivity with which the wah effect is controlled.
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 #1	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 #2	-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)

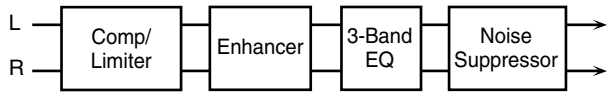
A comp/limiter, enhancer, 3-band equalizer, and noise suppressor are connected in series.

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.

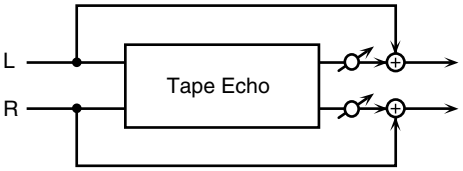
Noise Suppressor leaves the original sound unmodified, but mutes only the noise during the silent intervals.



Parameter	Value	Description
Comp Sw	OFF, ON	Turns the comp/limiter on/off.
Comp Threshold #1	-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
Enhan Sw	OFF, ON	Turns the enhancer on/off.
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
NS Sw	OFF, ON	Turns the noise suppressor on/off.
NS Threshold #2	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

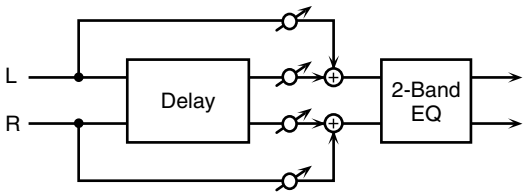
This virtual tape echo gives you real tape delay sound. This simulates the tape echo part of Roland's RE-201 Space Echo.



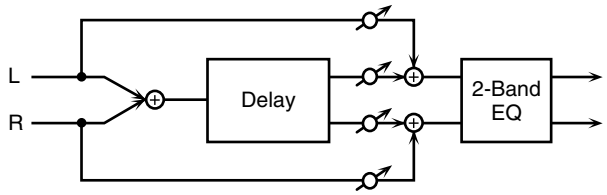
Parameter	Value	Description
Mode	S, M, L, S+M, S+L, M+L, S+M+L	Sets the combination of playback heads to be used. The RE-201 had three playback heads to make different delay times (Short, Medium, and Long delay) at once. For example, to use the short and middle heads, select S+M.
Repeat Rate #1	0–127	Sets the tape speed. This corresponds to the delay time in a contemporary delay effect.
Intensity #2	0–127	Sets the repeat times of the delayed sound. This is analogous to a contemporary delay's feedback setting.
Bass Treble	-100– +100	These are the echo sound's bass and treble adjustments. When set to 0, they make no change to the sound.
Head S Pan Head M Pan Head L 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.*
Tape Distortion	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.



When Mode parameter is STEREO:

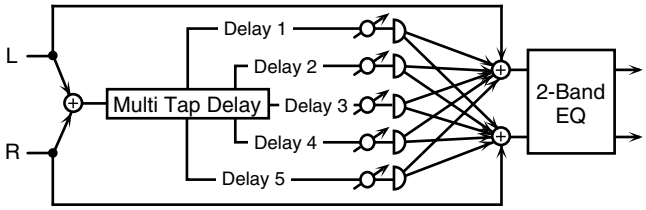


When Mode parameter is MONO or ALTERNATE:

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)
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

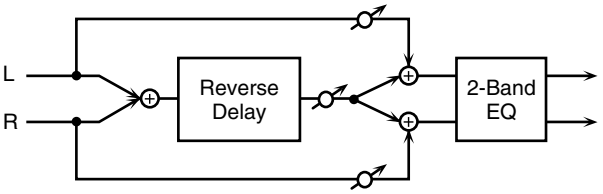
The effect has five delays. Each of the Delay Time parameters can be specified as a note length of the selected tempo. You can also set the panning and level of each delay sound.



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 #1	-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

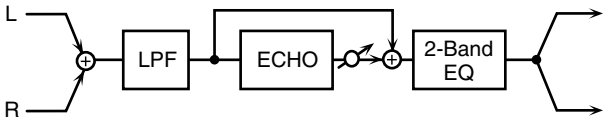
Adds the reverse of the input sound as the delay sound.



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 Feedback	-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

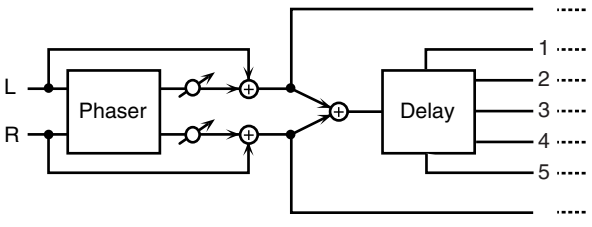
This effect simulates a karaoke echo.

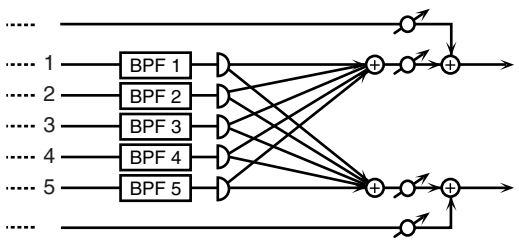


Parameter	Value	Description
Delay Time #1	0–650 ms, note	Adjusts the delay time from the direct sound until the delay sound is heard.
Pre LPF Freq	500–15000 Hz, THRU	Sets the filter's cutoff frequency (THRU: no filter is used)
Mod Rate	0.05–10.0 Hz, note	Specifies the modulation speed of the modulation effect.
Mod Depth	0–127	Specifies the modulation depth of the modulation effect.
Diffusion	0–100	Specifies the spaciousness of the delay sound.
Feedback #2	-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.
Echo Level #3	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.





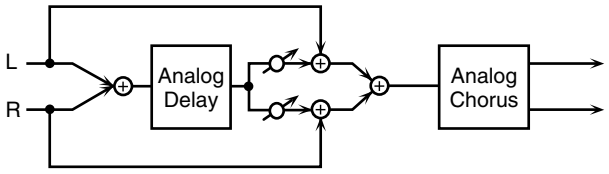
Parameter	Value	Description
Phaser Manual	0–127	Specifies the center frequency at which the sound is modulated.
Phaser Rate	0.05–10.0 Hz, note	Specifies the frequency of modulation.
Phaser Depth	0–127	Specifies the depth of modulation.
Phaser Resonance	0–127	Specifies the amount of feedback for the phaser. 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 Feedback #1	-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		
Balance #2	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

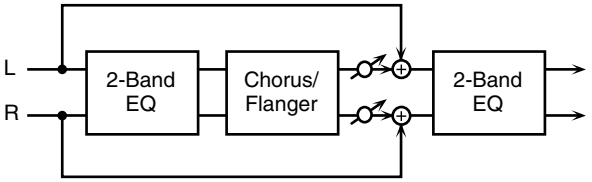
This effect reproduces the sound of the BOSS CE-1 Chorus Ensemble. To reproduce the sound of the unit at the time, a monaural analog-type delay is first inserted in series.



Parameter	Value	Description
Dly Sw	OFF, ON	Turns the delay on/off.
Dly Repeat Rate #1	0–127	Corresponds to the delay time in a delay effects.
Dly Intensity #2	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 #3	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

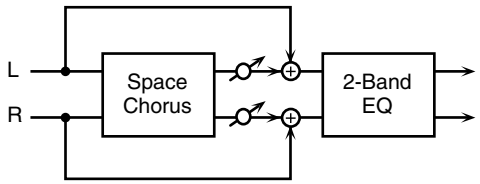
This is a stereo chorus or flanger. Equalizers are provided before (Pre) and after (Post) the chorus (or flanger).



Parameter	Value	Description
Mode	CHORUS, FLANGER	Selects either chorus or flanger.
Rate #1	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 LowFreq	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

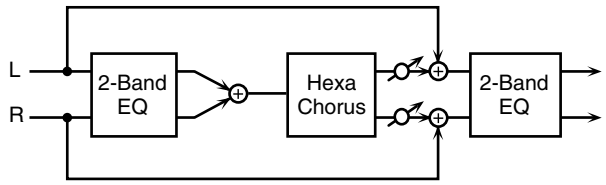
This effect reproduces the sound of Roland's SDD-320 spatial expression effects. Greater breadth is added.



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 #1	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 #1	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 #2	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

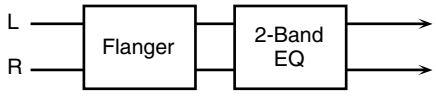
20: Analog Flanger

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 #1	0.02–5.00 Hz, note	Sets the rate of the swelling of the flanger sound.
Depth #2	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 #3	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 CH-R 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 (-)

21: BOSS Flanger

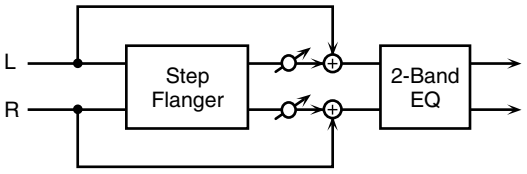
This effect features a pair of the same flanger circuits used in the BOSS compact flangers, connected in parallel for stereo input. This adds a particular metallic-sounding modulation to the source sound.



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 #1	0–127	Sets the depth of the swelling of the flanger sound.
Rate #2	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.*
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

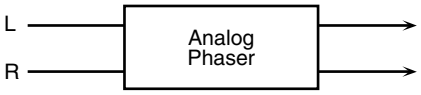
This is a flanger in which the flanger pitch changes in steps. The speed at which the pitch changes can also be specified in terms of a note-value of a specified tempo.

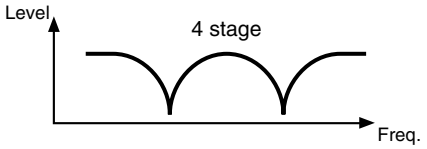
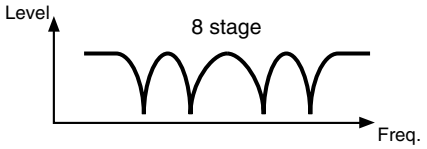


Parameter	Value	Description
Pre Dly Time	0–50.0 ms	Specifies the time delay from the original sound until the flanger sound is heard.
Rate #1	0.05–10.0 Hz, note	Specifies the modulation frequency of the flanger sound.
Depth	0–127	Specifies the modulation depth of the flanger sound.
Feedback	-98– +98%	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 #2	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

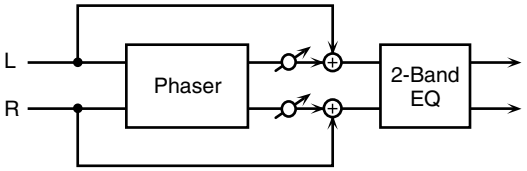
This effect features two analog-type phasers arranged in parallel, making it stereo compatible. The sound as it cyclically drifts in and out of phase is added to the source sound, creating the modulation with the characteristic of phasers.

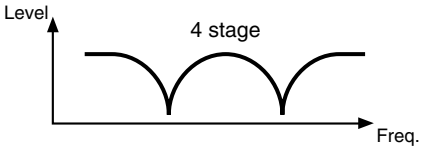
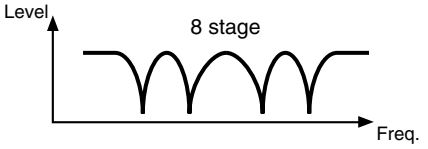


Parameter	Value	Description
Shift Mode	4STAGE, 8STAGE	Sets the number of stages in the phase shift circuit (four (4STAG) or eight (8STAGE)). Setting this to eight stages (8STAGE) increases the number of the frequency points that sound is canceled, giving a sharper effect.
	 	
Center Freq #1	0–127	Sets 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

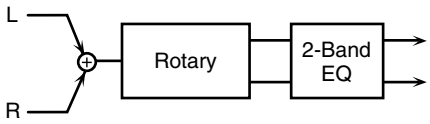
Phaser is an effect that adds a phase-shifted sound to the original sound to create time-varying change, modulating the sound.



Parameter	Value	Description
Shift Mode	4STAGE, 8STAGE	Sets the number of stages in the phase shift circuit (four (4STAG) 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 #1	0.05–10.0 Hz, note	Specifies the frequency of modulation.
Depth #2	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

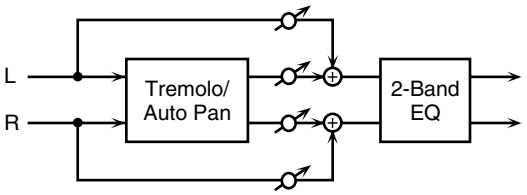
The Rotary effect simulates the sound of the rotary speakers often used with the electric organs of the past. Since the movement of the high range and low range rotors can be set independently, the unique type of modulation characteristic of these speakers can be simulated quite closely. This effect 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 #1	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

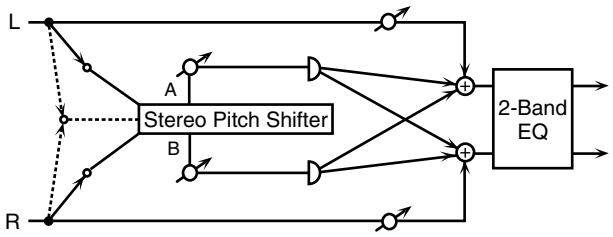
This is a stereo tremolo or auto-pan effect. Tremolo cyclically modulates the volume to add tremolo effect to the sound. The Auto Pan effect cyclically modulates the stereo location of the sound.



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 #1	0.05–10.0 Hz, note	Frequency of modulation
Depth #2	0–127	Depth of modulation
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

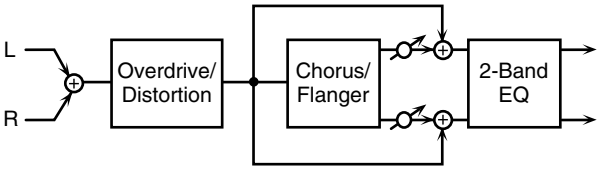
This effect features two pitch shifters arranged in parallel, making it stereo compatible. It can shift the pitch of the input signal up to one octave up or down.



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 #1/#2	-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 #3	-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)

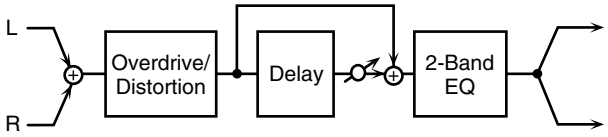
This effect connects either Overdrive or Distortion and either Chorus or Flanger.



Parameter	Value	Description
Drive Mode	OD, DS	Selects whether to use overdrive (OD) or distortion (DS).
Drive #1	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 Level	0–127	Volume of the overdrive or distortion sound.
Mod Mode (Chorus / Flanger)	CHORUS, FLANGER	Selects whether to use chorus or flanger.
Mod Rate #2	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 LowFreq	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.
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)

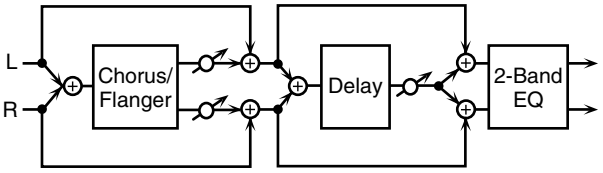
This effect connects either Overdrive or Distortion and Delay in series.



Parameter	Value	Description
Drive Mode	OD, DS	Selects whether to use overdrive (OD) or distortion (DS).
Drive #1	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 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 Feedback #2	-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)

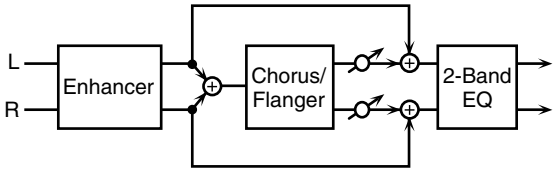
This effect connects either Chorus or Flanger and Delay in series.



Parameter	Value	Description
Mod Mode (Chorus / Flanger)	CHORUS, FLANGER	Selects whether to use chorus or flanger.
Mod Rate #1	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 LowFreq	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.
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.
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)

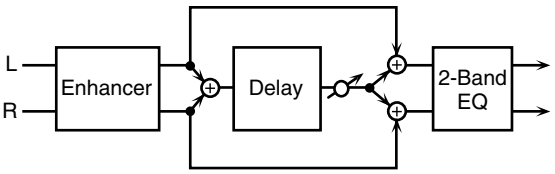
This effect connects Enhancer and either Chorus or Flanger in series.



Parameter	Value	Description
Enhan Sens #1	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
Mod Mode (Chorus / Flanger)	CHORUS, FLANGER	Selects whether to use chorus or flanger.
Mod Rate #2	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 LowFreq	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.
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.



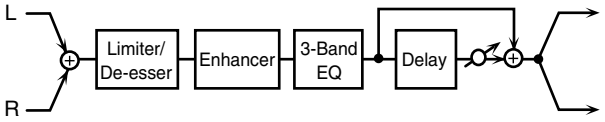
Parameter	Value	Description
Enhan Sens #1	0–127	Sensitivity of the enhancer
Enhan Frequency	0–127	Sets the lower limit of the frequencies to which the enhancement effect is added.
Enhan Mix Level	0–127	Level of the overtones generated by the enhancer
Enhan Level	0–127	Volume of the enhancer sound
Delay Time	0–1300 ms, note	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay Feedback #2	-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.

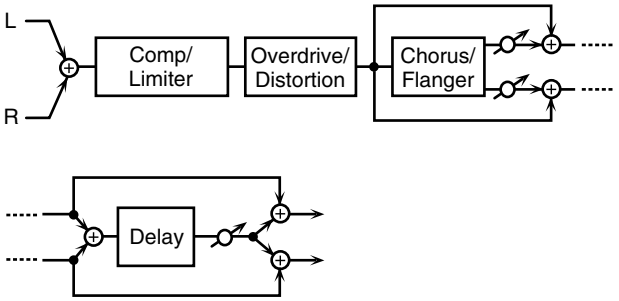
A de-esser cuts the sibilant sounds of a voice, producing a gentler tone.



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 #1	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.
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.

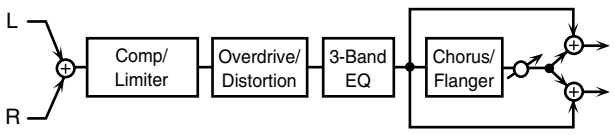


Parameter	Value	Description
Comp Sw	OFF, ON	Turns the comp/limiter on/off.
Comp Threshold	-60–0 dB	Sets the volume level at which the compression begins.
Comp Attack	0–127	Sets the time after the sound volume is crossed the compressor threshold until compression begins.
Comp Release	0–127	Specifies the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

Parameter	Value	Description
Mod Mode (Chorus / Flanger)	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 XoverLPF	500–15000 Hz, THRU	Adjusts the cutoff frequency of the low pass filter. (THRU: no filter is used)
Mod XoverHPF	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

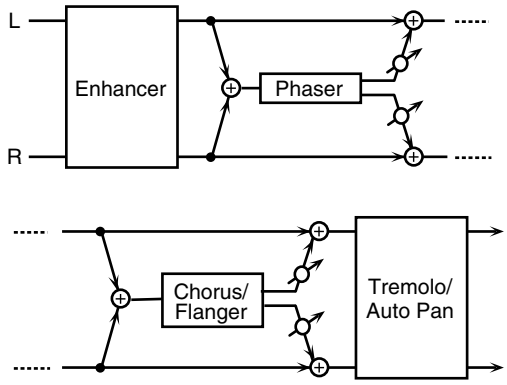
Bass Multi provides Comp/Limiter, Overdrive or Distortion, 3-band equalizer, and Chorus or Flanger effects connected in series. This algorithm is a multi-effects for bass.



Parameter	Value	Description
Comp Sw	OFF, ON	Turns the comp/limiter on/off.
Comp Threshold #1	-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.
Distortion 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 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)	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 XoverLPF	500–15000 Hz, THRU	Adjusts the cutoff frequency of the low pass filter. (THRU: no filter is used)
Mod XoverHPF	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: EP Multi

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

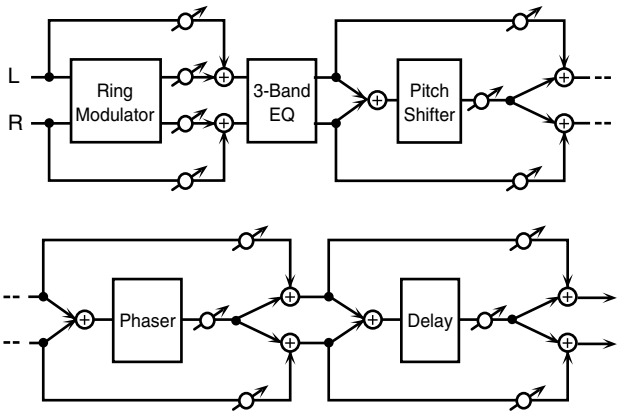


Parameter	Value	Description
Enhan Sw	OFF, ON	Turns the enhancer effect on/off.
Enhan Sens	0–127	Sensitivity of the enhancer
Enhan Frequency	0–127	Sets the lower limit of the frequencies to which the enhancement effect is added.
Enhan Mix Level	0–127	Level of the overtones generated by the enhancer
Enhan Level	0–127	Volume of the enhancer sound
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)	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 XoverLPF	500–15000 Hz, THRU	Adjusts the cutoff frequency of the low pass filter. (THRU: no filter is used)
Mod XoverHPF	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.
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
	SAWUP / SAWDN	
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.

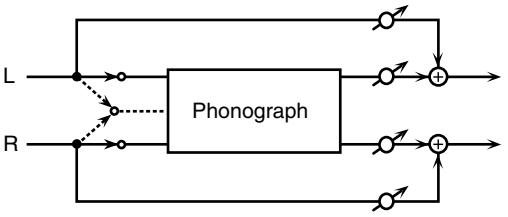


Parameter	Value	Description
Ring Freq	0–127	Frequency at which modulation will be applied
Ring Balance #1	DRY100:0WET–DRY0:100WET	Volume balance between the direct sound (DRY) and the ring modulated sound (WET)
EQ Low Freq	50–4000 Hz	Frequency of the low range
EQ Low Gain	-15– +15 dB	Gain of the low 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

Parameter	Value	Description
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.
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

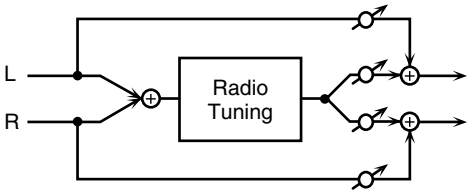
This effect reproduces the sound of an analog record played on a record player. This includes the various noises with the characteristic of records and the uneven rotation of older turntables.



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.
Total Noise #1	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 #2	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

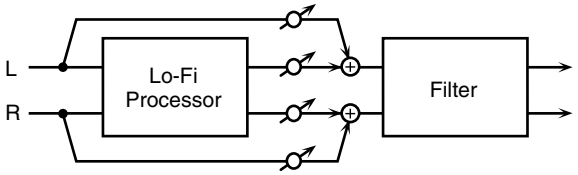
This effect reproduces the sound of an AM radio playing.



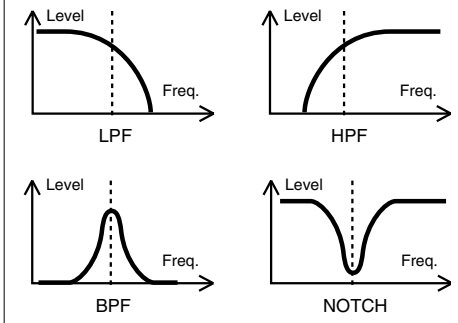
Parameter	Value	Description
Tuning #1	-50– +50	Adjusts the degree of noise that occurs when tuning a radio.
Noise Level #2	0–127	Sets the noise level.
Frequency Range #3	0–127	Sets the frequency response of the radio. Lowering the value worsens the frequency characteristics, making the sound appear to 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.

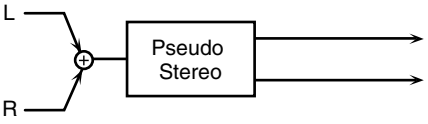


Parameter	Value	Description
Pre Filter Sw	OFF, ON	This is the switch of the filter placed before the Lo-Fi processing
Sample Rate	1/1, 1/2, 1/4, 1/8, 1/16, 1/32	Sets the fraction of current sampling rates to be used for processing.
Bit Down	0–15	This setting is for reducing the bit count.
Post Filter 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)

Parameter	Value	Description
Filter Type	THRU, LPF, BPF, HPF, NOTCH	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 #1	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.

01: Room 1 (p. 189)
02: Room 2 (p. 189)
03: Room 3 (p. 190)
04: Hall 1 (p. 190)
05: Hall 2 (p. 191)
06: Hall 3 (p. 191)
07: Garage (p. 192)
08: Plate (p. 192)
09: Non-Linear (p. 193)
10: Delay (p. 193)

01: 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	Gain 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 delay 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)

02: 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	Gain 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
Reverb 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 delay 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)

03: 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	Gain 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
Reverb 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 delay 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)

04: 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	Gain 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 delay 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

05: 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	Gain 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
Reverb 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 delay 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)

06: 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	Gain 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
Reverb 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 delay 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)

07: 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	Gain 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
Reverb 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 delay 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)

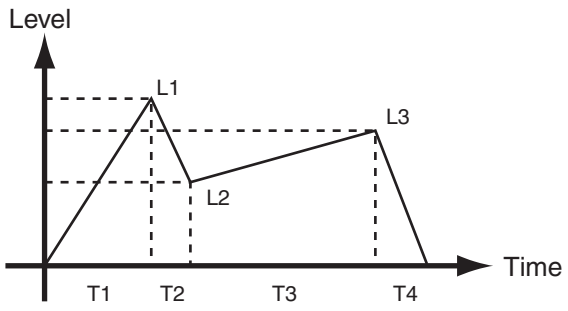
08: PLATE

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	Gain 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 delay sound is heard.
Density	0–99	Density of the reverb
Room Size	5.6–34.7 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: Non-Linear

This uses digital processing to create an artificial reverberation that is quite different than naturally occurring 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	Gain 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 Dly Time	0–200.0 ms	Adjusts the delay time from the direct sound until the delay sound is heard.
Density	0–99	Density of the reverb
Early Ref Level	0–99	Volume level of the initial reflected sound
NLR Type	L→R, NORMAL, L←R	Method of output panning L→R: Pan from the L channel to the R channel NORMAL: Output without panning L←R: Pan from the R channel to the L channel
Env Time Ratio	10–120%	The overall time will be expanded or contracted while preserving the time ratios of the various envelope times.
Envelope T1–T4	0.1–1000 ms	Time until each point (T1–T4) is reached
Envelope L1–L3	0–100	Output level for each point (L1–L3) * *If the total length of Envelope times (T1+T2+T3+T4) exceeds 1000 ms, the sound of the portion that extends beyond this will be cut.*
		
Feedback Time	0.1–1000 ms	Delay time for the feedback sound
Feedback Level	0–99%	Amount of feedback
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: 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)
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

Troubleshooting

If the this unit does not function in the way you expect, first check the following points. If this does not resolve the problem, consult your dealer or a nearby Roland Service Station.

* *If a message appears during operation, consult the following section* ***"Message List"*** *(p. 198).*

Problems Related to the V-Synth

Problem	Cause	Action
Power does not turn on	Is the AC cord connected correctly to the V-Synth and to an AC outlet?	Check the AC cord connections.
No Sound/Volume is low	Is the power of the connected devices turned on?	Make sure that the power of your amp or mixer system is turned on.
	Is the volume turned down?	Check the volume of the V-Synth and of the connected amp or mixer.
	Is there sound in the headphones?	If there is sound in the headphones, it is possible that the connection cables are broken, or that the amp or mixer is malfunctioning. Check the connection cables and your other equipment once again.
	Is the Local Switch turned OFF?	Turn the Local Switch ON (p. 126).
	Is the Patch level set too low?	Check the Level parameter setting (p. 93).
	Are the Effect settings correct?	Check the Effect settings ON or OFF, in the Effect Balance or Level (p. 96).
	Are the settings for the output destination correct?	Check the output assign settings (p. 96).
	Have volume messages been received from an external MIDI device to lower the volume?	Check the volume.
	Could the oscillator be off?	Press [OSC1] or [OSC2] to turn on the oscillator.
	Could the V-Synth be set to USB communication in Storage mode?	Cancel USB communication (p. 140, p. 142).
The volume level of the instrument connected to INPUT Jacks is too low.	Could you be using a connection cable that contains a resistor?	Use a connection cable that does not contain a resistor.
Pitch is wrong	Are the Pitch settings of the Oscillator section correct?	Check the Coarse Tune/Fine Tune parameter settings (p. 84).
	Is the Master Tune setting correct?	Check the Master Tune parameter setting (p. 122).
	Has a Pitch Bend message been received from an external device, leaving the pitch "hanging?"	Try moving the pitch bend lever of the connected MIDI keyboard.
When you play the keyboard, notes do not stop	Is the pedal polarity of the Hold Pedal reversed?	Check the Hold Polarity parameter setting (p. 127).
Sound is distorted	Is an effect which distorts the sound being applied?	Check the effect settings (p. 166).
	Has the Patch level been turned up?	Check the Level parameter setting (p. 93).
Effects do not apply	[MFX], [CHO], or [REV] effect switches may have been turned off.	Turn them on.
	Are the various effect settings correct?	If the send level of each effect is set to 0, the effect will not be applied. Check the settings (p. 96).
		Even with send levels to each effect set at 0, effects are not applied if the MFX Master Level, the Chorus Master Level, or the Reverb Master Level is set to 0. Check each setting (p. 96).
		If Output Assign is set to other than "MULTI," the MFX sound will not be output (p. 96).
Oscillator Type has been to "EXT IN," but no sound is heard when audio is input through the INPUT jacks	If the oscillator is set to external input (EXT IN), you will not hear sound unless you play the keyboard.	Try playing the keyboard.
No sound from connected MIDI device	Is the instrument set to transmit MIDI messages?	Check the Patch Tx Ch parameter setting (p. 125).
	Does the MIDI transmit channel for the V-Synth match the MIDI receive channel for the connected MIDI device?	Check the Patch Tx Ch parameter setting (p. 125).

Problem	Cause	Action
Exclusive messages are not received	Is the instrument set to receive Exclusive messages?	Set the Rx Sys-Ex parameter to ON (p. 124).
	Does the Device ID number of the transmitting device match the Device ID number of the V-Synth?	Check the Device ID parameter setting (p. 123).
Noise is heard while sampling	During sampling, the output frequency of the digital audio interface is fixed at 44.1 kHz, regardless of the System mode setting. Noise may be heard from connected devices at this time.	This is not a malfunction.
Can't edit or encode a wave	Could you have selected a preset wave?	The V-Synth's factory-loaded preset waves cannot be edited or encoded. Select a sample that you've sampled or imported.
Beep tone was turned off, but it continues to sound the next time power is turned on	The Power-up Mode is set to "Default."	Change it to "Last Set" and save the System settings (p. 122).

Problems Related to the USB Driver (Windows)

Problem	Cause	Action
When I start (or restart) my computer with the V-Synth connected via USB, it freezes at the startup screen and fails to work	It has been found that on some computers, starting (or restarting) the computer while the V-Synth is powered up and USB is connected will cause the computer to freeze at the startup screen and fail to work.	Switch off the V-Synth and then restart your computer.
When I turned off the power of the V-Synth, an error occurred in Windows	When using Windows Me, powering down the V-Synth without unmounting the drive may cause an error to occur in Windows.	You must cancel the USB connection (p. 140) before you turn off the power of the V-Synth.
When I attempt to exit Windows while leaving the V-Synth powered up, the computer does not turn off	On some Windows computers, it has been reported that the computer cannot be powered down if you exit Windows when the V-Synth is still powered up (without unmounting the drive). (The shutdown process halts before the computer's power is switched off.)	You must cancel the USB connection (p. 140) before you turn off the power of the V-Synth before you exit Windows.
When I connect the V-Synth via USB and wake up my computer from Suspend, it stops functioning	On some computers, waking up the computer from the Suspend state while a powered-up V-Synth is connected via USB will cause the computer to freeze.	Before you Suspend your computer, power down the V-Synth using the procedure described on p. 140.
V-Synth drive is not mounted in Windows XP	If a network drive is mounted in Windows XP, that drive number may conflict with the V-Synth drive, causing the V-Synth drive to not be recognized.	Change the assignment of the network drive.
"Find new hardware wizard" does not execute automatically **The "Insert Disk" dialog box does not appear** **"Find new hardware wizard" ends before the process is completed** * *It may take about 15 seconds (or more) after the USB cable is connected for the V-Synth to be detected.*	Is the USB cable connected correctly?	Make sure that the V-Synth and your computer are correctly connected via a USB cable.
	Is USB enabled on your computer?	Refer to the operation manual for your computer, and make sure that USB is enabled.
	Does your computer meet the USB specifications?	If you are using a computer that does not fulfill the electrical requirements of the USB specifications, operation may be unstable. In this case, you may be able to solve the problem by connecting a USB hub.
		If the above actions do not solve the problem, it is possible that the V-Synth has been incorrectly detected by the computer. As described in **"Deleting Incorrect Device Information"** (p. 196), delete the incorrect device information, then re-install the driver.
"Found unknown device" appears even though you installed the driver	If your computer or USB hub has two or more USB connectors, and you connect the V-Synth to a USB connector to which the V-Synth has never been connected before, the "Unknown device" dialog box may appear even on a computer onto which you have already installed the driver.	Refer to Readme file on the included CD-ROM, and install the driver once again. This is not a malfunction. If the "Found unknown device" dialog box appears even though the V-Synth is connected to the same USB connector as before, it is possible that the computer has detected the V-Synth incorrectly. As described in **"Deleting Incorrect Device Information"** (p. 196), delete the incorrect device information, then re-install the driver.

Problem	Cause	Action
An "Unknown driver found" dialog box appears, and you are unable to install the driver Device Manager shows "?", "!", or "USB Composite Device" Driver is not installed correctly	It is possible that the computer has detected the V-Synth incorrectly.	As described in **"Deleting Incorrect Device Information"** (p. 196), delete the incorrect device information, then re-install the driver.
Can't install/delete/use the driver in Windows XP/2000	Did you log on to Windows as a user with administrative privileges?	In order to install/delete/re-install the driver in Windows XP/2000, you must be logged into Windows as a user with administrative privileges, such as Administrator. For details, please contact the system administrator for your computer system.
	Did you make "Driver Signing Options"?	In order to install/re-install the driver, you must make "Driver Signing Options."
Windows XP/2000 displays a "Hardware Installation" or "Digital Signature Not Found" dialog box	Did you make "Driver Signing Options"?	In order to install/re-install the driver, you must make the settings described in "Driver Signing Options."

Deleting Incorrect Device Information

Use the following procedure to re-install the driver.

1. **Turn off the power of your computer, and start up Windows with all USB cables disconnected (except for keyboard and mouse).**
2. **After Windows restarts, use a USB cable to connect the V-Synth to your computer.**
3. **Turn on the power of V-Synth.**
4. **Click the Windows Start button, and from the menu that appears, choose Settings | Control Panel.**
5. **Double-click the System icon. The System Properties dialog box will appear.**
6. **Click the Device Manager tab.**
   In Windows XP, select the System Properties Hardware tab, and click Device Manager.
7. **Check whether "Roland V-Synth" with an "!" or "?" symbol is displayed below "Other Devices," "Sound, Video, and Game Controllers," or "Universal Serial Bus Controller." If you find any such indication, select it and click [Delete].**
8. **A dialog box will ask you to confirm deletion of the device. Verify the contents of the dialog box, and then click [OK]. In the same way, delete all occurrences of "Roland V-Synth" that have an "!" or "?" symbol.**
9. **Check whether "Composite USB Device," "USB Device," or "USB Composite Device" with an "!" or "?" symbol is displayed below "Other Devices," "Sound, Video, and Game Controllers," or "Universal Serial Bus Controller." If you find any such indication, you need to determine whether it has appeared because the V-Synth has been detected incorrectly, or because there is a problem with some other device. To determine this, switch off the power of the V-Synth.**

* *If the "Composite USB Device" (or other) indication disappears when you turn off the power of the V-Synth, then it is the V-Synth that has been incorrectly detected. Return to step 2 and continue the procedure, and when you reach step 8, delete the information that was detected incorrectly. If the indication does not disappear when you turn off the power of the V-Synth, then this indication refers to a different device. Do not delete it.*

"Composite USB Device," "USB Device," or "USB Compatible Device" may sometimes indicate a device other than the V-Synth. Be careful not to accidentally delete the registration for another device. If you delete the registration for another device, you will have to reinstall the driver for that device.

10. A dialog box will ask you to confirm deletion of the device. Verify the contents of the dialog box, and click [OK]. Delete each unwanted occurrence of "Composite USB Device," "USB Device," or "USB composite device" indications with an "!" or "?" symbol.

11. Turn off the power of the V-Synth, then delete the driver.

12. Restart Windows. Then install the driver once again.

* *If the problem still occurs after you have taken the above measures, please refer also to the Readme file for the USB driver. The Readme file is on the CD-ROM.*

Problems Related to the USB Driver (Macintosh)

Problem	Cause	Action
A message of "Drivers needed for the USB device "V-Synth" are not available. Would you like to look for these drivers over the internet?" is displayed	It is possible that the V-Synth's USB MIDI driver has not been correctly installed in your computer.	Correctly install the USB MIDI driver as described in Readme file on the included CD-ROM.
	It is possible that there is a conflict with the driver (function extension) of another USB device.	We are aware of a problem that causes the V-Synth to not be recognized correctly if a driver for I-O Data Corporation's USB CD-R drive is installed. In this case, disable "ISD 200 BOTBridge" or other driver file by moving it out of the Extensions folder, located within the system folder.
When the computer returns from the Sleep state, an indication of "MIDI off line!" appears	The V-Synth's USB MIDI driver does not support the Sleep functionality of Mac OS.	Do not use the Sleep functionality of Mac OS. When you use the V-Synth, open the "Energy Saver" control panel and specify "Never" as the period of inactivity before the system goes to sleep.

Message List

The V-Synth displays a variety of messages. There are three types of message screen.

ERROR screen: This will appear if you attempt to perform an incorrect operation, or if an operation could not be executed correctly.

WARNING screen: This will appear when caution is necessary.

Message box: This informs you of the current status. It will also appear if you attempt to perform an incorrect operation, or if an operation could not be executed correctly.

Messages are listed here alphabetically for each type of message screen.

ERROR Screens

If an ERROR screen appears, touch <ACCEPT> to erase the message.

Message	Meaning	Action
DISK Disk Full!	The media is full, and no further writing is possible.	Delete unneeded files from the media (p. 136). Alternatively, provide other media that has free space.
DISK File/Folder Name Duplicate!	There is an identically named file or folder.	Assign a different name (p. 137). Alternatively, please write to a folder that does not contain an identically-named file or folder.
DISK File Not Found!	A patch or sample used by the project or patch was not found on disk.	Re-create the project or patch, and save it.
DISK File Read Error!	The data is damaged, and cannot be loaded.	Do not use this file.
DISK File Write Error!	The media is of a format to which the V-Synth cannot write.	Prepare a media that is of a format to which the V-Synth is able to write.
DISK Illegal Format!	Since the format of this file is incorrect, it cannot be loaded.	Do not use this file.
DISK Illegal PCM Wave! Cannot Load This Wave.	This file uses a type of compression that the V-Synth is unable to read.	Use the device that created the file to convert the data into an 8 bit or 16 bit wave.
DISK Memory Full!	Since the wave memory has become full, the operation was halted.	Delete unneeded samples from the V-Synth. Alternatively, individually import the patches or samples that you want to use.
DISK Path Duplicate!	You are attempting to write to the same hierarchical level.	Change the writing destination.
DISK Path Name Too Long!	The path name is too long.	Shorten the names of each folder (p. 137). Alternatively, move the entire folder to a shallower level of the hierarchy (p. 135). * The "path" indicates the hierarchical level at which the file is located. It is given together with the folder name.
DISK PC Card Not Ready!	The memory card is not ready.	Insert another memory card.
DISK Too Many Channels! Cannot Load This Wave.	This file contains waves for three or more channels, and cannot be loaded into the V-Synth.	Do not use this file.
DISK Unformatted Disk!	This disk cannot be used by the V-Synth.	Format the disk on the V-Synth.
DISK Unknown Disk Error!	A disk error of unknown causes has occurred.	Contact your dealer or a nearby Roland service center for service.
DISK You Cannot Use This Device!	The operation you attempted to execute does not support this media.	Do not select this media for this operation.
ENCODE Encoding Error!	For some reason, encoding is not possible.	Change the encoding type and try again.
ENCODE Memory Full!	Due to insufficient wave memory, encoding is not possible.	Shorten the wave (p. 114), or delete unwanted samples from the V-Synth's memory (p. 108).
IMPORT No Room for Patches!	There are no vacant patches.	Delete unneeded patches from the V-Synth (p. 76).
IMPORT No Room for Samples!	There are no vacant samples.	Delete unneeded samples from the V-Synth (p. 108).
SAMPLE EDIT Copy Buffer Not Allocated!	There is not enough wave memory to execute the Copy.	Shorten the range that will be copied (p. 114), or delete unneeded samples from the V-Synth (p. 108).

Message	Meaning	Action
SAMPLE EDIT Memory Full!	There is not enough wave memory to execute the wave editing operation (Insert, Zero Insert, Region, Paste).	Delete unneeded samples from the V-Synth (p. 108).
SAMPLING Memory Full!	Since the wave memory has become full, the operation was halted.	Delete unneeded samples from the V-Synth (p. 108).

WARNING Screens

If a WARNING screen appears, follow the procedure described in the corresponding "Action."

Message	Meaning	Action
CHANGE USB MODE USB Mode Will Be Changed.	USB mode will be changed.	Exit any USB MIDI-related applications on your computer.
COPY FILE/FOLDER Are You Sure?	The file(s) or folder(s) will be copied from the disk. Is it OK to execute?	To cancel the operation, touch <CANCEL>. To execute the operation, touch <EXECUTE>.
DELETE FILE/FOLDER This Will Clear the File(s)/Folder(s). Are You Sure?	The file(s) or folder(s) will be deleted from the disk. Is it OK to execute?	To cancel the operation, touch <CANCEL>. To execute the operation, touch <EXECUTE>.
DISCONNECT USB Disconnection Will Be Done Before Ejecting. Are You Sure?	Will disconnect before ejecting. Is it OK to execute?	Perform the Eject operation on your computer.
EDITED DATA EXISTS If You Need This Data, Save Immediately.	The V-Synth contains an unsaved patch or sample.	If you need the patch or sample, save it now. Touch <ACCEPT> to erase the message.
FILE/FOLDER EXISTS Overwrite Existing File/Folder?	There is an identically named file or folder at the copy- or move-destination.	To cancel the operation, touch <CANCEL>. To execute the copying or moving operation, touch <EXECUTE>.
FORMAT All Data on the Disk Will Be Lost. Are You Sure?	When you format, all data on the disk will be lost. Is it OK to execute?	To cancel the operation, touch <CANCEL>. To execute the formatting operation, touch <EXECUTE>.
IMPORT FILE Are You Sure?	The file(s) will be imported from the disk. Is it OK to execute?	To cancel the operation, touch <CANCEL>. To execute the importing operation, touch <EXECUTE>.
INITIALIZE PATCH Are You Sure?	The patch will be initialized. Is it OK to execute?	To cancel the operation, touch <CANCEL>. To execute the operation, touch <EXECUTE>.
LOAD DEMO Replace All Data. Are You Sure?	When you load the demo data, all data in the VP-9000 will be lost. Is it OK to execute the operation?	To cancel the operation, touch <CANCEL>. If you wish to load the demo data, touch <EXECUTE>.
LOAD PROJECT Are You Sure?	Project will be loaded. Is it OK to execute the operation?	To cancel the operation, touch <CANCEL>. If you wish to load the project, touch <EXECUTE>.
MOVE FILE/FOLDER Are You Sure?	The file(s) or folder(s) will be moved from the disk. Is it OK to execute?	To cancel the operation, touch <CANCEL>. To execute the operation, touch <EXECUTE>.
OTHER SAMPLE EXISTS Number '**' Already Contains a Sample. Clear Existing Sample?**	A different sample already exists in the selected sample number '*****'.	To cancel the operation, touch <CANCEL>. If you wish to overwrite the sample of the selected number, touch <EXECUTE>.
PROJECT NOT FOUND Internal Project Was Loaded.	Cannot find the project specified as the current project. The internal project was loaded.	Touch <ACCEPT> to erase the message.
SAMPLE EDIT Copy Buffer Not Avail. Are You Sure?	When you perform the Cut or Clear sample editing operation, the data is simultaneously copied as well. However, this message indicates that in this case, there is insufficient memory remaining to copy the data. Do you still want to execute the Cut or Clear? (Since a copy will not be made, you will be unable to restore the data simply by pasting it back. The Cut or Clear operation can still be carried out, though.)	To cancel the operation, touch <CANCEL>. If you also want to Copy the data, shorten the range being Cut or Cleared (p. 114), or delete unneeded samples from the V-Synth (p. 108). To execute the Cut or Clear operation, touch <EXECUTE>.
SAMPLE EXISTS Overwrite Existing Sample?	Sample exists in the copy- or move-destination.	To cancel the operation, touch <CANCEL>. To execute the copying or moving operation, touch <EXECUTE>.
SAVE PROJECT Are You Sure?	Project will be saved. Is it OK to execute the operation?	To cancel the operation, touch <CANCEL>. To execute the operation, touch <EXECUTE>.

Message Boxes

Message boxes are displayed briefly, and then disappear automatically.

Message	Meaning	Action
Canceled!	The operation is canceled.	
Cannot Delete This Event!	The events at the beginning and end of a wave cannot be deleted.	
Checksum Error!	The received system exclusive message has an incorrect checksum value.	Correct the checksum value.
Completed!	The operation has been completed.	
Connecting...	Now establishing a connection.	
Disconnecting...	Now breaking the connection.	
Event Doesn't Exist Here!	There is no event at the specified location.	Specify a location where there is an event.
Event Interval Too Narrow!	The event interval is too narrow for events to be placed in it.	Move the interval further from the nearest event.
Improper Name!	The folder name or volume label is blank.	Assign a name before you execute (p. 137).
MIDI Buffer Full!	An excessive amount of MIDI data was received all at once, and could not be processed properly.	
MIDI Communication Error!	A MIDI hardware error has occurred.	If the same message appears repeatedly, please contact your dealer or a nearby Roland service center for service.
MIDI Offline!	The MIDI IN connection has been broken.	Check whether there is a problem with the MIDI cable connected to the V-Synth's MIDI IN, or whether the MIDI cable has been disconnected.
Please Wait a Minute.	Please wait a short time.	
Processing...	The operation is being executed.	
Transmitting...	The data is being transmitted.	
Error Receiving Data!	MIDI message could not be received correctly.	If the same message appears repeatedly, there is a problem with the content of the MIDI messages.
USB Offline!	USB cable is not connected.	Check whether there is a problem with the USB cable connected to the V-Synth's USB connector, or whether the USB cable has been disconnected.
Writing...	Data is being written.	

About MIDI

MIDI (Musical Instruments Digital Interface) is a standard specification that allows musical data to be exchanged between electronic musical instruments and computers. MIDI With a MIDI cable connecting MIDI devices that are equipped with MIDI connectors, you can play multiple instruments with a single keyboard, have multiple MIDI instruments perform in ensemble, program the settings to change automatically to match the performance as the song progresses, and more.

If you mainly use the V-Synth as a standalone keyboard instrument, you may really not need to know much at all about MIDI. However, the following MIDI-related information is provided so you can play the V-Synth using an external MIDI device, or master other advanced techniques.

About MIDI Connectors

The V-Synth is equipped with the three types of MIDI connectors, each which works differently.

MIDI IN Connector

This connector receives MIDI messages that are transmitted from external MIDI devices. The V-Synth can receive these messages to play notes or select sounds, etc.

MIDI OUT Connector

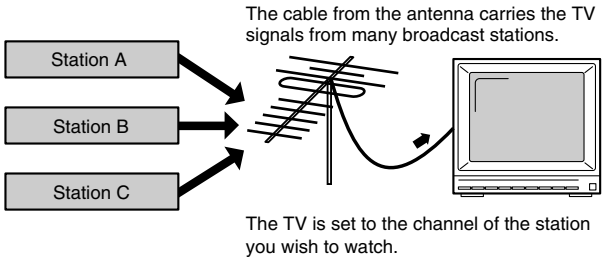
This connector transmits MIDI messages to external MIDI devices. The V-Synth's MIDI OUT connector is used for sending the performance data of the keyboard controller section as well as data used for saving various settings and patterns.

MIDI THRU Connector

MIDI messages received at MIDI IN are re-transmitted without change from this connector to an external MIDI device. Use this in situations such as when you use multiple MIDI devices simultaneously.

MIDI Channels and Multi-timbral Sound Generators

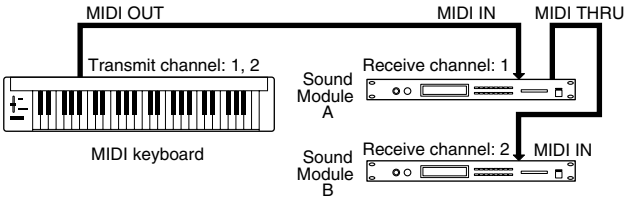
MIDI transmits many types of data over a single MIDI cable. This is made possible by the concept of **MIDI channels**. MIDI channels allow messages intended for a given instrument to be distinguished from messages intended for another instrument. In some ways, MIDI channels are similar to television channels. By changing the channel on a television set, you can view the programs that are being broadcast by different stations. In the same way, MIDI also allows a device to select the information intended for that device out of the variety of information that is being transmitted to it.



MIDI uses sixteen channels; 1 through 16. Set the receiving device so that it will receive only the channel that it needs to receive.

Example:

Set the V-Synth to send Channel 1 and Channel 2, then set sound module A to receive only Channel 1 and sound module B only Channel 2. With this setup, you can get an ensemble performance, with, for example, a guitar sound from sound module A and bass from sound module B.



When used as a sound module, the V-Synth can receive on up to sixteen MIDI channels. Sound modules like the V-Synth which can receive multiple MIDI channels simultaneously to play different sounds on each channel are called **multi-timbral sound modules**.

Synthesizer Keyboard
Model V-Synth Version 2.0

MIDI Implementation Chart

Date: Mar. 1, 2005
Version: 1.01

Function...		Transmitted	Recognized	Remarks
Basic	Default	1–16	1–16	
Channel	Changed	1–16	1–16	Memorized
Mode	Default	Mode 3	Mode 3	
	Messages	Mono, Poly	Mode 3, 4 (M = 1)	* 2
	Altered	**********		
Note Number :	True Voice	0–127 **********	0–127 0–127	
Velocity	Note On	O	O	
	Note Off	O	O	
After Touch	Key's	X	O *1	
	Channel's	O	O *1	
Pitch Bend		O	O *1	
Control Change	0, 32	O *1	O *1	Bank select
	1	O (Modulation)	X *1	Modulation
	2	O (Knob 1) *1	X *1	Breath type
	5	X *1	O	Portamento time
	6, 38	X *1	O	Data entry
	7	O (Pedal 1) *1	O	Volume
	10	X	O	Panpot
	11	O (Pedal 2) *1	O	Expression
	16	O (D Beam1-L) *1	X *1	General purpose controller 1
	17	O (D Beam2-L) *1	X *1	General purpose controller 2
	18	O (D Beam3-L) *1	X *1	General purpose controller 3
	19	O (D Beam4-L) *1	X *1	General purpose controller 4
	34	O (Knob 2) *1	X *1	Breath type
	48	O (D Beam1-R) *1	X *1	General purpose controller 1
	49	O (D Beam2-R) *1	X *1	General purpose controller 2
	50	O (D Beam3-R) *1	X *1	General purpose controller 3
	51	O (D Beam4-R) *1	X *1	General purpose controller 4
	64	O (Hold)	O	Hold 1
	65	X *1	O	Portamento
	66	X *1	O	Sostenuto
	80	O (TT Pad XY-X) *1	X *1	General purpose controller 5
	81	O (TT Pad XY-Y) *1	X *1	General purpose controller 6
	82	O (TT Pad TT-X) *1	X *1	General purpose controller 7
	83	O (TT Pad TT-Y) *1	X *1	General purpose controller 8
	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, Knob, D Beam, TT Pad
	100, 101	X *1	O	RPN LSB, MSB
Program Change	: True Number	O *1 **********	O *1 0–127	Program No. 1–128
System Exclusive		O *3	O *1	
System Common	: Song Position	X	X	
	: Song Select	X	X	
	: Tune Request	X	X	
System Realtime	: Clock	X *1	X *1	
	: Commands	X	O *4	
Aux Messages	: All Sound Off	X	O	
	: Reset All Controllers	X	O	
	: Local On/Off	X	X	
	: All Notes Off	X	O (123–127)	
	: Active Sensing	O *1	O	
	: System Reset	X	X	
Notes		* 1 O X is selectable. * 2 Recognized as M=1 even if M≠1. * 3 Transmits when Data Transfer is executed or RQ1 received. * 4 Recognized when “Sampling Trigger” is “MIDI”.		

Mode 1 : OMNI ON, POLY
Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY
Mode 4 : OMNI OFF, MONO

O : Yes
X : No

Specifications

V-Synth Version 2.0: Synthesizer Keyboard

● Keyboard
61 keys (with velocity and channel aftertouch)

● Sound Generator Configuration
Oscillator (envelope x 4 + LFO x 1) x 2
Modulator x 1
COSM (envelope x 2 + LFO x 1) x 2
TVA (envelope x 1 + LFO x 1) x 1

● Methods by Which Oscillators Produce Sound
PCM/Variphrase
(Preset waveforms + Sampling waveforms),
Analog Modeling
(14 waves: SAW, SQUARE, TRIANGLE, SINE, RAMP, JUNO, HQ-SAW, HQ-SQUARE, NOISE, LA-SAW, LA-SQUARE, SUPER-SAW, FEEDBACK-OSC, X-MOD-OSC),
External Input

● Modulator
4 types (RING, FM, ENV-RING, OSC-SYNC)

● COSM
16 types (OD/DS, W-SHAPE, AMP, SPEAKER, RESONATOR, SBF1, SBF2, COMB, DUAL, TVF, DYN-TVF, COMP, LIMITER, F-SHIFT, LO-FI, TB-FILTER)

● Zones (Splits)
16

● Parts
16 (normally)
12 (when using a rhythm kit)

● Maximum Polyphony
24 voices
(Varies depending on the load placed on the sound generator.)

● Internal Memory
Project: 1
Patches: 512
Waves: 999
Wave memory (RAM): 50 M bytes
(When the unit ships from the factory, 32 M bytes of this is taken up by the preset waves.)

● External Storage Device
PC CARD slot
(Microdrive, SmartMedia or CompactFlash can be used with PC card adapter.)

● Effects
MFX (Multi-effects): 41 sets
Chorus: 8 sets
Reverb: 10 sets

● System EQ
4 bands

● Sampling Frequency
Internal: 44.1 kHz
Digital Audio IN/OUT: 96, 48, 44.1 kHz

● Signal Processing
Internal Processing
  Sound generating section: 32 bits (floating point)
  Effects section: 24 bits (fixed point)
DA Conversion: 24 bits
AD Conversion: 24 bits

● Nominal Output Level
MAIN OUT: +4 dBu
DIRECT OUT: +4 dBu

● Nominal Input Level
INPUT (LINE): -20 dBu
INPUT (MIC): -46 dBu

● Arpeggiator
Patterns: User programmable
(support use of control change messages)
Motifs: 8 types
Tempo: 20 to 250 BPM

● Multi Step Modulator
Tracks: 4
Steps: 16
Tempo: 20 to 250 BPM

● Display
Graphic 320 x 240 dot backlit LCD with touch screen

● Controllers
Pitch Bend / Modulation Lever
Time Trip Pad
D Beam Controller (Twin beam)
Assignable Control Knobs (C1, C2)

● Connectors
Headphones Jack
Main Output Jacks (L/MONO, R) (1/4 inch phone type)
Direct Output Jacks (L, R) (1/4 inch phone type)
Input Jacks (L, R) (1/4 inch phone type)
  (Equipped with line/mic gain switch)
Hold Pedal Jack
Control Pedal Jacks (1, 2) (assignable)
MIDI Connectors (IN, OUT, THRU)
USB Connector (supports file transfer and USB MIDI)
Digital Audio Interface (24-bit, IEC60958)
  COAXIAL (IN, OUT)
  OPTICAL (IN, OUT)
AC Inlet

● Power Supply
AC 115 V, AC 117 V, AC 220 V, AC 230 V, AC 240 V (50/60 Hz)

● Power Consumption
16 W

● Dimensions
1056 (W) x 398 (D) x 111 (H) mm
41-5/8 (W) x 15-11/16 (D) x 4-3/8 (H) inches

● Weight
13.1 kg / 28 lbs 15 oz

● Accessories
Owner's Manual
Sound List
CD-ROM (USB Driver, Librarian)
PC CARD Protector
Power Cord

● Options
Add-on application software (V-Card)
  VC-1: D-50 Simulator
  VC-2: Vocal Designer
Keyboard Stand: KS-12
Pedal Switch: DP-2/6/8
Foot Switch: BOSS FS-5U
Expression Pedal: EV-5, BOSS FV-300L

(0 dBu = 0.775 V rms)

* *In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.*

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For EU Countries

CE

This product complies with the requirements of European Directives EMC 89/336/EEC and LVD 73/23/EEC.

For the USA

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.

Unauthorized changes or modification to this system can void the users authority to operate this equipment.
This equipment requires shielded interface cables in order to meet FCC class B Limit.

For Canada

NOTICE

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

AVIS

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Information

When you need repair service, call your nearest Roland Service Center or authorized Roland distributor in your country as shown below.

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UNITED KINGDOM
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SA7 9FJ,
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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
Radex Sound Equipment Ltd.
17, Diagorou Street, Nicosia,
CYPRUS
TEL: (022) 66-9426

IRAN
MOCO INC.
No.41 Nike St., Dr.Shariyati Ave.,
Roberoye Cerahe Mirdamad
Tehran, IRAN
TEL: (021) 285-4169

ISRAEL
Halilit P. Greenspoon & Sons Ltd.
8 Retzif 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
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LEBANON
Chahine S.A.L.
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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
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aDawliah Universal Electronics APL
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SYRIA
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Rawda, Abdul Qader Jazairi St.
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Damascus, SYRIA
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As of January 15, 2005 (ROLAND)