Roland®

GENERAL MIDI GS

64 VOICE SYNTHESIZER MODULE *MULTI-FX*

SC-880

OWNER'S MANUAL

The documentation for the SC-880 consists of two manuals: "Quick Start" and "Owner's Manual."
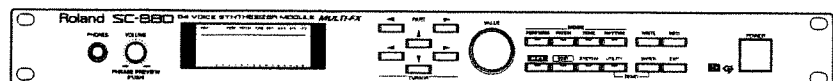"Quick Start" explains basic procedures for using the SC-880.
The "Owner's Manual" explains the functions for each mode. Use the table of contents, index, and quick reference of displays to find the desired chapter.

Before using this unit, carefully read the sections entitled: "IMPORTANT SAFETY INSTRUCTIONS" (p. 2), "USING THE UNIT SAFELY" (p. 3), and "IMPORTANT NOTES" (p. 5). 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, Quick start and Owner's manual should be read in its entirety. The manual should be saved and kept on hand as a convenient reference.

Conventions Used in This Manual

- The names of panel buttons are enclosed in square brackets: [ ].
  Example: [PERFORM] means the PERFORM button.

- Some procedures appear like this: [ ]-[ ]-[ ]. This means that you should press the panel buttons in the order given.
  Example: [PERFORM]-[TONE]-[EDIT]
  This means that you should press the PERFORM button, then the TONE button, and finally the EDIT button.

- Other pages in the manual that you might want to refer to for further information are shown like this: (p. **)

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 all the instructions before using the product.
2. Do not use this product near water — for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
3. This product should be used only with a cart or stand that is recommended by the manufacturer.
4. This product, 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 consult an audiologist.
5. The product should be located so that its location or position does not interfere with its proper ventilation.
6. The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
7. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.

8. The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time.
9. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
10. The product should be serviced by qualified service personnel when:
    A. The power-supply cord or the plug has been damaged; or
    B. Objects have fallen, or liquid has been spilled into the product; or
    C. The product has been exposed to rain; or
    D. The product does not appear to operate normally or exhibits a marked change in performance; or
    E. The product has been dropped, or the enclosure damaged.
11. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.

─────────────── For the USA ─────

GROUNDING INSTRUCTIONS

This product must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock.
This product is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

DANGER: Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded.
Do not modify the plug provided with the product — if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

─────────────── 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.

The product which is equipped with a THREE WIRE GROUNDING TYPE LINE PLUG must be grounded.

USING THE UNIT SAFELY

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

About ⚠WARNING and ⚠CAUTION Notices

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

About the Symbols

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

-------------------------------- **ALWAYS OBSERVE THE FOLLOWING** --------------------------------

⚠WARNING

- Before using this unit, make sure to read the instructions below, and the Owner's Manual. ⚠

....

- Do not open or perform any internal modifications ⊘ on the unit.

....

- 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. ●

....

- Avoid damaging the power cord. Do not bend it excessively, step on it, place heavy objects on it, etc. A damaged cord can easily become a shock or fire hazard. Never use a power cord after it has been damaged. ⊘

....

- 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. ⊘

⚠WARNING

- 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. ⚠

....

⚠CAUTION

- Always grasp only the plug on the power-supply cord when plugging into, or unplugging from, an outlet or this unit. ⊘

....

- 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. ●

....

- Whenever you suspect the possibility of lightning in your area, pull the plug on the power cord out of the outlet. ●

Main Features of the SC-880

● Supports General MIDI System/GS Format

The SC-880 is a sound module compatible with the General MIDI system. It can be used to play back any music files (General MIDI scores) bearing the General MIDI logo. The SC-880 is also compatible with the Roland GS format. It can be used to play back any music files bearing the GS logo.

● Sound Generator with a Generous 32 Parts/64 Voices

The SC-880 is a 32-part, 64-voice multitimbral sound module. A single SC-880 can produce the sounds of a large ensemble. It is the ideal sound module to use with sequencers or personal computers. (p. 115)

● Rich Variety of High-Quality Tones

The SC-880 contains 1,117 high quality tones and 42 types of Rhythm sound set (including 3 sound effects sets). These sound include the same sounds as the SC-55/55mkII and SC-88/88 Pro, allowing SC-55/55mkII and SC-88/88 Pro song data to be played back correctly. (p. 95, 102)

● Full Complement of Effects

A wide variety of effects are provided: 64 types of multi-effects, eight types each of reverb and chorus effects, 10 types of delay, and a 2-band equalizer. In addition, the values of relevant parameters can be set for each effect, allowing professional-level manipulation of sound. (p. 40)

● Create Your Own Sounds

There are 256 user tones and 16 user Rhythm sets, allowing you to create your own tones and Rhythm sets. (p. 28, 34)
By editing sound parameters such as vibrato, filter, and envelope, you can modify sounds to your taste. (p. 28)

● Patch Mode Lets You Create Complex Sounds

The SC-880 provides a Patch mode, which lets you layer up to 6 parts to create complex sounds.
256 different immediately usable patches are provided, making the SC-880 ideal as an expansion tone module for your keyboard.
You can create 128 different user patches, and play using your own original sounds.

● Performance Mode Lets You Enjoy Ensemble Playing Immediately

The SC-880 provides a Performance mode, which remembers the settings for all 32 parts. You can use the 8 different performances immediately to assist you in creating songs.
You can also create 8 user performances which contain your own original settings.

● Phrase Preview Function for Easy Auditioning

The SC-880's Phrase Preview function makes it easy to audition tones or patches. A phrase appropriate for the selected patch or tone will be played. This feature comes in handy when you want to check out a sound, or have a quick listen while editing.

● Enhanced Visibility Display

The large display graphically provides easy visual confirmation of settings, such as the volume for each part.

● Direct Connection to Your Computer

The computer connector allows the SC-880 to be directly connected to a personal computer. (p. 115)

● Easy Connection to Other Devices

Audio input jacks with input level adjustment allow you to connect another sound generator, and output that sound mixed with the SC-880's own sound from the audio output jacks. Additionally, two sets of output jacks are provided. (Quick Start p. 3)

General MIDI System

The General MIDI system is a set of recommendations which seeks to provide a way to go beyond the limitations of proprietary designs, and standardize the MIDI capabilities of sound generating devices. Sound generating devices and music files that meets the General MIDI standard bears the General MIDI logo. Music files bearing the General MIDI logo can be played back using any General MIDI sound generating unit to produce essentially the same musical performance.

GS Format

The GS Format (**❼**) is Roland's set of specifications for standardizing the performance of sound generating devices. In addition to including support for everything defined by the General MIDI System, the highly-compatible GS Format additionally offers an expanded number of sounds, provides for the editing of sounds, and spells out many details for a wide range of extra features, including effects such as reverb and chorus.
Designed with the future in mind, the GS Format can readily include new sounds and support new hardware features when they arrive.
Since it is upwardly compatible with the General MIDI System, Roland's GS Format is capable of reliably playing back GM Scores equally as well as it performs GS Music Files (music files that has been created with the GS Format in mind).

This product supports both the General MIDI system and the GS format, and can be used to play back music files carrying either of these logos.

Important Notes

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.

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.

● 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.

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 in another MIDI device (e.g., a sequencer), 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.

Memory Backup

● This unit contains a battery which powers the unit's memory circuits while the main power is off. When this battery becomes weak, the message shown below will appear in the display. Once you see this message, have the battery replaced with a fresh one as soon as possible to avoid the loss of all data in memory. To have the battery replaced, consult with your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page.

"Battery Low"

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 in another MIDI device (e.g., a sequencer).

● Unfortunately, it may be impossible to restore the contents of data that was stored 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.

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Contents

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* Apple is a registered trademark of Apple Computer, Inc.

* Macintosh is a registered trademark of Apple Computer, Inc.

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or registered trademarks of their respective owners.

Front Panel

RHYTHM Button
For selecting Rhythm Sets. (p. 33)

TONE Button
For selecting Tones. (p. 23)

PATCH Button
For selecting Patches. (p. 20)

PERFORM Button
For selecting Performances. (p. 37)

PART Button
Provide selection of parts. The currently selected part will be shown in the Part field in the upper left of the display. (p. 13)

WRITE Button
For saving the tones, patches, performances, rhythms, or multi-effects that you've created. (p. 15)

INFO Button
Pressed to view a variety of information. The indicator of the [INFO] button also functions as a MIDI message indicator which lights when a MIDI message is received. (p. 15)

POWER Switch
This turns the power on/off. (Quick Start p. 5)

PHONES Jack
A pair of stereo headphones can be connected to this jack. Make sure that they have an impedance of 8–150 ohms. (Quick Start p. 3)

Display
Displays a variety of information. (p. 13)

CURSOR Button
Use these to move the cursor in the display, or to select pages. (p. 14)

VOLUME Knob (PHRASE PREVIEW)
This adjusts the volume of the OUTPUT 1 jack and PHONES jack. When pressed, the Phrase Preview function is activated, allowing the SC-880 to produce sound by itself. (p. 97)

VALUE Dial
Use this to modify the value of a setting. If you press the dial as you rotate it, the value will change more rapidly. In some cases, you can press the dial to view various lists in the display. (p. 14)

M-FX Button
For selecting Multi-effects. (p. 49)

EDIT Button
Pressed to enter the Edit mode.

SYSTEM Button
Pressed to enter the System mode, where you can make settings for the sound generator. (p. 92)

EXIT Button
Use this button to return to the basic screen, or to cancel a list that is shown in the display.

ENTER Button
Pressed to get the changes you've made in a value to take effect. If the cursor is located at a parameter, you can press [ENTER] to transmit the setting of that parameter as a MIDI message. (p. 100)

UTILITY Button
Pressed to enter the Utility mode, where you can save or initialize settings; and copy, delete, or exchange parts. (p. 99)

Rear Panel

MIDI IN B Connector
Messages that are input here will be received by MIDI parts B01–B16. (p. 94)
* *The Input Mode setting will determine whether part group A or part group B will receive messages.*

MIDI IN A Connector
Messages that are input here will be received by MIDI parts A01–A16. (p. 94)
* *The Input Mode setting will determine whether part group A or part group B will receive messages.*

MIDI OUT/THRU Connector
This connector functions either as MIDI OUT or MIDI THRU, depending on the setting of MIDI OUT/THRU Select (p. 93). When the SC-880 is shipped, this is set to MIDI OUT.

OUTPUT 2 Jacks
These provide output of the direct sound, unprocessed by the effects. (p. 24)
* *At the factory settings, no sound will be output from these jacks.*
* *The sound from OUTPUT 2 is output at a fixed volume, unaffected by the position of the volume knob.*

INPUT Jacks
Accept input of audio from an external device. If you are using this for a monaural signal, use the L (MONO) INPUT jack.
(Quick Start p. 4)
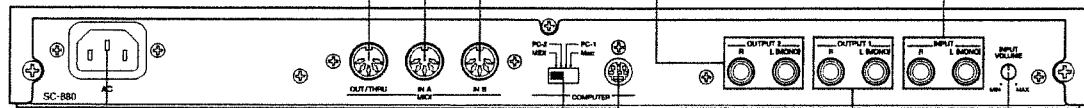
AC Inlet
Connect the supplied power cable here.
(Quick Start p. 3)

Computer Connector
Set this switch depending on the type of computer connected to the Computer connector, or the software you are using. Turn the power off before changing the setting of this switch. If you want to use the MIDI connectors, set this switch to MIDI. (p. 115)

Computer Connector
A special computer cable (sold separately) can be connected here. The type of cable required will depend on your computer. When the Computer switch located at the left is set to MIDI, the computer connector cannot be used. (p. 115)

OUTPUT 1 Jacks
Provide output of stereo audio signals (L/R) that can be sent to an amp or mixer. For monaural output, connect to the L jack alone.
(Quick Start p. 3)

INPUT VOLUME Knob
Adjusts the volume of the audio signals input to the INPUT jacks.
(Quick Start p. 4)

9

How to Read This Owner's Manual

This owner's manual is organized as follows.

Chapter 1. Overview of the SC-880

This chapter explains the basic organization of the SC-880, the display and basic operation, and the various modes.

Chapter 2. Patch Mode Settings

This chapter explains how a patch is organized, the parameters and operations used when editing a patch, Tone mode and Rhythm mode.

Chapter 3. Performance Mode Settings

This chapter explains how a performance is organized, and how to edit a performance.

Chapter 4. Applying Special Effects to the Sound (System Effects)

This chapter explains how the effects of the SC-880 are organized, and the operations and parameters used to edit the system effects.

Chapter 5. Applying Special Effects to the Sound (Multi-Effects)

This chapter explains the various types of multi-effects, and the operations and parameters used to edit multi-effects.

Chapter 6. Setting Up Your Preferences

This chapter explains how you can make various settings that affect the operating environment of the SC-880.

Chapter 7. Utility Mode Settings

This chapter explains how you can save data on an external device, and perform convenient operations such as copying settings, etc.

Chapter 8. MIDI and the SC-880

This chapter explains the MIDI messages that the SC-880 can use.

Chapter 9. Using a Personal Computer to Control the SC-880

This chapter explains how the SC-880 can be connected to a personal computer.

Appendices

If you run into problems, refer to "Troubleshooting" to make sure that the settings are correct. If an error message appears during operation, refer to "If a Message Appears" and take appropriate action. This section also provides information related to sound editing, MIDI, various lists, and the MIDI implementation charts.

Chapter 1. Overview of the SC-880

How the Sound Generator Is Organized

The SC-880 is a 32-part, 64-voice synthesizer module which contains 1,117 tones and 42 types of rhythm set, and a variety of effects.

The sound generator of the SC-880 contains **Tones, Patches, Rhythm Sets, Performances, and Effects (System Effects, Multi-effects)**.

■ The SC-880's Basic Unit of Sound: the Tone

On the SC-880, the smallest unit of sound data used mainly for playing is called a Tone. The SC-880 contains 1,117 of these tones. Each tone has eight types of parameters that determine its sound. By editing these parameters, you can change the character of a tone in a variety of ways. (p. 28)

■ Combining Tones to Create Sounds: Patches

On the SC-880, the settings for one or more tones, combined with settings for effects to be applied to these tones are collectively referred to as a "Patch."

The SC-880 contains 256 such patches. Each patch consists of up to six "Parts" (A01–A06) plus effect settings (system effects, multi-effects). Since this lets you combine two or more types of sound (instead of playing just an individual tone), you can create richer and more complex sounds. A patch can be used not only to layer multiple sounds together to create a rich sound, but also can be used to make different tones sound in different areas of the keyboard ("split").

* At the factory settings, the 128 user patches also contain pre-programmed patches in addition to the 128 preset patches. (p. 168)

■ Playing Rhythm Instruments: Rhythm Sets

The SC-880 has 42 different rhythm sets, each of which consists only of rhythm instruments or sound effects.

In a rhythm set, a different rhythm instrument sound is assigned to each key (or note number of a MIDI message), meaning that the keyboard does not control the pitch in the usual way.

■ Playing an Ensemble: Performance

On the SC-880, settings that assign a tone or rhythm set to each of the 32 parts, together with effect settings (system effects and multi-effects) are collectively known as a "Performance." The SC-880 contains 16 of these performances, allowing you to begin composing immediately.

* When the SC-880 is shipped, the user performances contain the same data as the preset performances.

■ Applying Special Effects to the Sound: Effects

The SC-880 contains "effects," which can be used to modify the sound in various ways. There are two types of effects: "system effects," which are applied to all parts; and "multi-effects," which are applied to specific parts. System effects provide reverb, chorus, delay and equalizer. Multi-effects provide 64 different effect types.

About the Memory Areas

"Memory" refers to the location where tone and patch settings, etc. are kept. The memory of the SC-880 is organized into **system memory, user memory, and preset memory**. When you select a patch or performance, the data is called from memory into a place called the "temporary area," and this will be the data that you actually play or edit.

◆When you select a Patch   ◆When you select a Performance
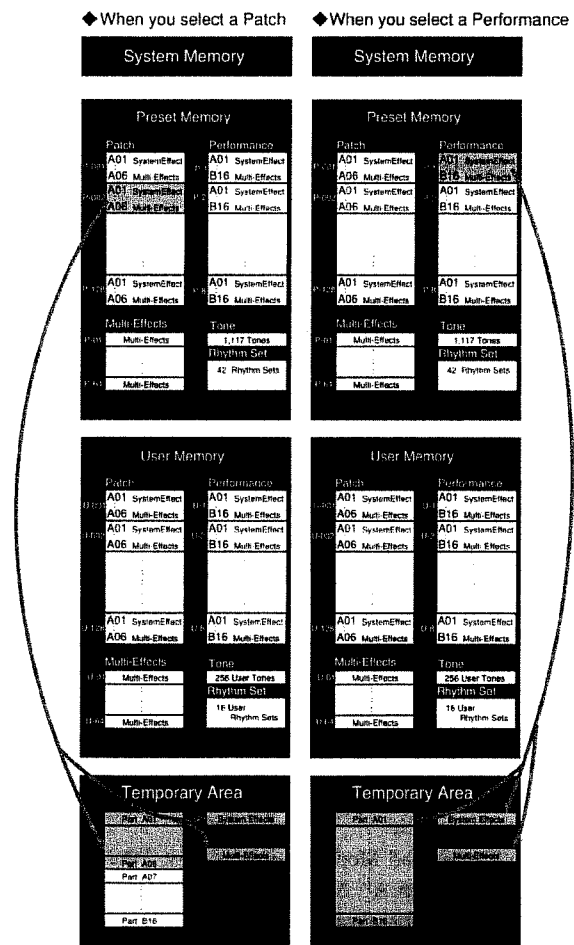
■ Memory for Storing Overall Settings: System Memory

System memory contains setting for the system parameters, which determine the operating environment of the entire SC-880, such as MIDI-related settings, etc.

■ Memory for Playing and Editing: Temporary Area

When you select a patch, performance or multi-effects for playing or editing, the selected patch, performance or multi-effects is called into a location known as the temporary area. The sounds produced by the SC-880 always use the data that is in the temporary area.

When you select a performance, all of the settings in the temporary area will be exchanged.

When you select a patch, the settings for parts A01–A06, the system effects and the multi-effects settings will be exchanged.

■ Rewritable Memory: User Memory

User memory is memory whose contents can be rewritten freely. It lets you store 256 tones, 128 patches, 16 rhythm sets, 64 multi-effects, and 8 performances.

* At the factory settings, the user patches already contain pre-programmed patches.

■ Non-Rewritable Memory: Preset Memory

Preset memory is memory that is permanent—its contents cannot be overwritten. Preset memory contains 1,117 tones, 128 patches, 8 performances, and 42 rhythm sets.

Changing between Performance mode and Patch mode

When you change from Patch mode to Performance mode, all data in the temporary area will be rewritten by data that is read from the performance in preset memory. When you change from Performance mode to Patch mode, the temporary area settings for "Part Group A" A01–A06, the system effects, and the multi-effects will be rewritten by data from the preset memory.

If the System mode setting "Patch Load Mode" is set to "Keep," the settings for "Part Group A" A07–A16, and "Part Group B" b01–b16 will remain as they were in Performance mode.

If the "Patch Load Mode" setting is "Init," the settings for "Part Group A" A07–A16, and "Part Group B" b01–b16 will be initialized.

The SC-880's Modes

The SC-880 has seven modes, which are differentiated by function or the way in which you wish to use the instrument. Select the appropriate mode depending on your playing style, the way you want to select sounds, or your situation.

The modes are organized as shown in the diagram.

The SC-880 is always operating in either Patch mode or Performance mode, and from either of these modes you can enter Tone mode, Rhythm mode or Multi-effects mode (M-FX) to access the same settings.
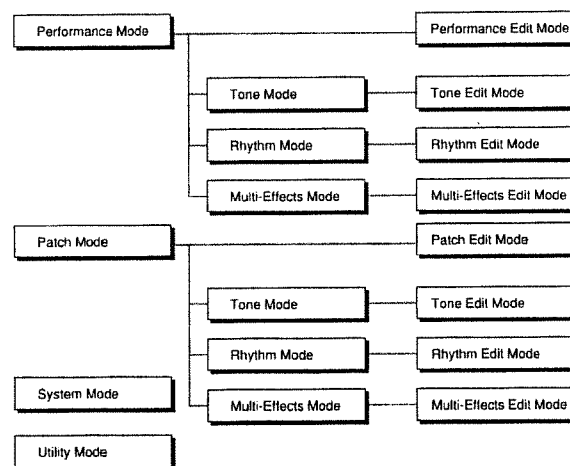
■ Performance Mode

In this mode you can select a performance and play an ensemble. Select this mode when you wish to connect a sequencer or computer and play an ensemble.

The main things you will do in Performance mode are to select performances and make settings that affect all parts. From Performance mode, you can enter Tone, Rhythm or Multi-effects modes.

Each performance contains settings for 32 parts, and settings for the system effects and multi-effects.

■ Patch Mode

In this mode you can select and play patches. Select this mode if you wish to use the SC-880 as an expansion sound module for your keyboard, etc.

The main things you will do in Patch mode are to select patches and make settings that affect all parts. From Patch mode, you can enter Tone, Rhythm or Multi-effects modes.

Each patch contains settings for parts A01–A06, and settings for the system effects and all multi-effects.

■ Tone Mode

In Tone mode you can select the tones that will be used for each part, edit a tone, and make part settings.
Tone mode can be selected from Performance mode or from Patch mode.

■ Rhythm Mode

In Rhythm mode you can select and edit rhythm sets.
Rhythm mode can be selected from Performance mode or from Patch mode.

* *At the factory settings, a rhythm set is assigned to part 10, and the rhythm set of part 10 will be selected in Rhythm mode.*

■ Multi-Effects Mode

In Multi-effects mode you can select the effect type that will be used, edit the effect parameters, and turn the effect on/off for each part.

■ System Mode

In System mode you can adjust the brightness of the display, and make sound generator settings such as MIDI input/output, etc.
System mode can be entered from any mode.

■ Utility Mode

In Utility mode you can transmit SC-880 settings to an external device, copy/delete/exchange part settings, or initialize the SC-880.
Utility mode can be entered from any mode.

About the Screen Display and Operation

The SC-880 is operated by using the various mode buttons to select the desired mode, CURSOR [▲] [▼] [◄] [►] to move the cursor in the display, the VALUE dial to modify the value of the selected parameter, and PART [◄] [►] to select the desired part.
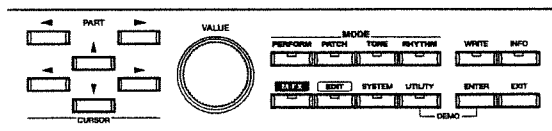
To display its large number of parameters, the SC-880 uses "pages."
Each page has a menu name, and the display will show the parameters that are related to that menu name.

Menu name

Parameters
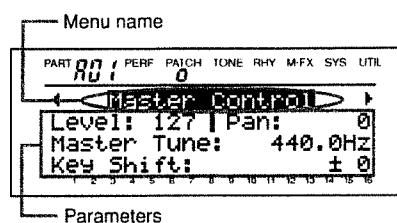
■ The Upper Part of the Display

The upper part of the display shows the currently selected part and the current mode.

■ The PART Display

The number in the [PART] field indicates the currently selected part.

The Part Display
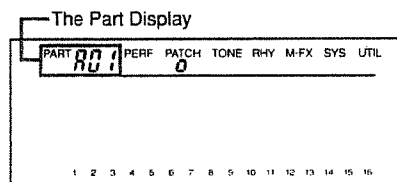
A01: Part A01 is currently selected.
b01: Part B01 is currently selected.

Pressing PART [►] will increase the value, and pressing PART [◄] will decrease the value. A value in the range of A01–A16–B01–B16 can be selected.

* *The Phrase Preview function will play the tone of the part that is shown in the display.*

To make big changes in the PART value

Use PART [◄] [►] to select the part.
You can use the following procedure to change the value in larger steps.

- To rapidly increase the value

Hold down PART [►] and press PART [◄].

- To rapidly decrease the value

Hold down PART [◄] and press PART [►].

You can also operate CURSOR [◄] [►] in the same way to move the cursor rapidly, which is convenient when you wish to switch pages, etc.

● The MODE Display

A " $\mathbf{Q}$ " symbol will appear below the name of the currently selected mode.

The Mode Display
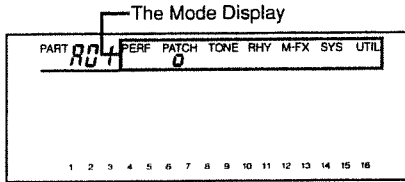
■ About Pages

From each mode, you can press [EDIT] to enter edit mode, and the parameter display pages will appear. Each page will show a menu name, and one or more parameters that are related to that menu name. If other pages exist at the left and/or right of the currently displayed page, a symbol will appear at the left and/or right of the menu name.

* The display will be different only for the multi-effects edit page.

Symbol
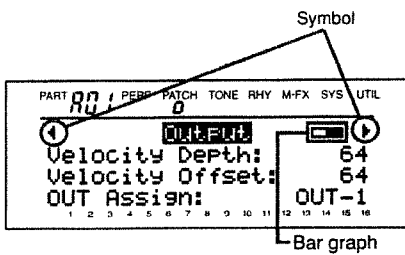
Bar graph

If there is more than one page with the same menu name, a bar graph will be displayed at the right of the menu name, telling you at a glance how many identically named pages there are.

ex. Pages 1/4
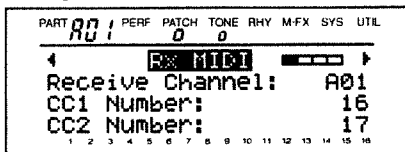
ex. Pages 3/4
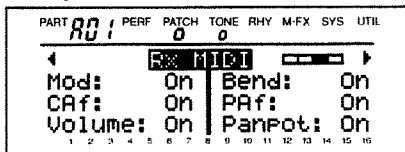
To move between pages, use the VALUE dial or CURSOR [◄] [►].

● Using the VALUE dial to Change Pages

When using the VALUE dial to change pages, you can access a display showing a list of menu names, and rapidly select the desired page.

1. Press [PATCH]-[TONE]-[EDIT] (the indicators light).
The following display will appear.

2. Use CURSOR [▲] to move the cursor to the menu name.
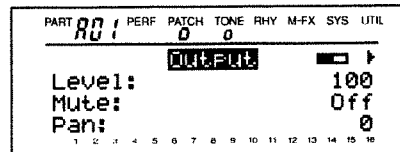
3. Press VALUE dial.
A list of the menu names will appear.
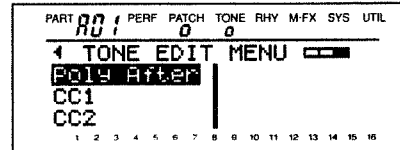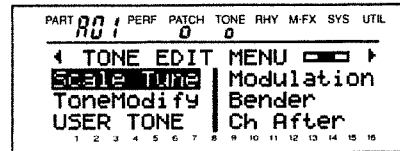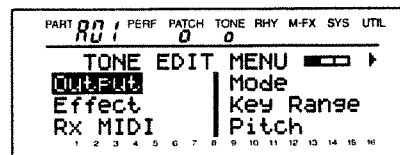
4. Rotate the VALUE dial to select the menu name.

5. Press [ENTER] or the VALUE dial to move to the selected page.

● Using CURSOR [◄] [►] to change pages

When using CURSOR [◄] [►] to change pages, you can step through the pages one at a time.

1. Press [PATCH]-[TONE]-[EDIT] (the indicators light).
The pages will appear as follows.
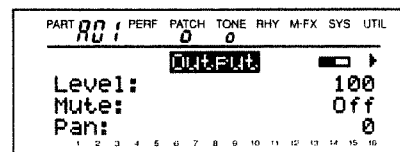
2. Make sure that the cursor is located at the menu name.
If it is not located at the menu name, press CURSOR [▲] to move the cursor to the menu name.

3. Use CURSOR [◄] [►] to change pages.

* *Even when the cursor is located at a parameter, you can use CURSOR [◄] [►] to change pages.*

■ About [INFO]

In Performance mode and Patch mode, the bar indicator will show only 16 parts at a time; either Part Group A or Part Group B , whichever is shown in the display. However, if you press [INFO], the bar indicator for all 32 parts will be displayed—with Part Group A in the upper section of the display, and Part Group B in the lower section.
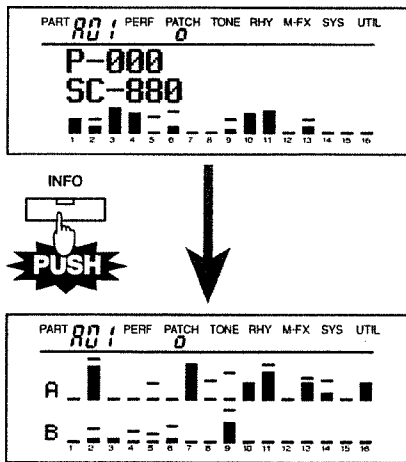
Additionally, in the case of parameters that can be set for each of the 32 parts, you can press [INFO] when the parameter is selected to switch between the 16-part or 32-part displays, making it easy to set parameters for all 32 parts.
The indicator of the [INFO] button also functions as a MIDI message indicator which lights when a MIDI message is received.

As an example, here's how to set the volume of each part.

1. Press [PATCH]-[TONE]-[EDIT] (the indicators light).

2. Use CURSOR [▲] to move the cursor to the menu name.

3. Rotate the VALUE dial to select "Output."
Output settings consist of two pages. Here we will select the first page.
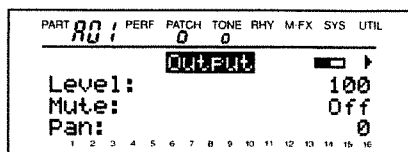
4. Use CURSOR [▼] to move the cursor to "Level."

5. Press [INFO].
The "Level" settings for parts A01–A16 will be displayed.
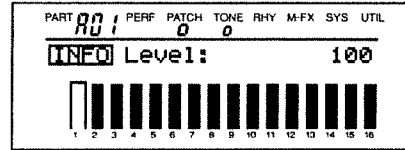
6. Use PART [◄] [►] to select the part whose settings you wish to modify.

* *If you select a part B01–B16, the display will show the settings for parts B01–B16.*

7. Rotate the VALUE dial to adjust the value.

8. Repeat steps 6–7 to make settings for all 32 parts.

* *In this owner's manual, parameters for which you can press [INFO] to make settings for all 32 parts are marked by a printed [INFO] symbol.*
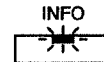
■ About [WRITE]

From each mode, you can press [WRITE] to save the contents of the temporary area to a User Performance, User Patch, User Rhythm, User Multi-effect, or User Tone, respectively.
When you press [WRITE], you can select the content to be saved from the following five pages.

    Performance Write (p. 38)
    Patch Write (p. 21)
    Rhythm Write (p. 36)
    Multi-FX Write (p. 49)
    User Tone Write (p. 32)
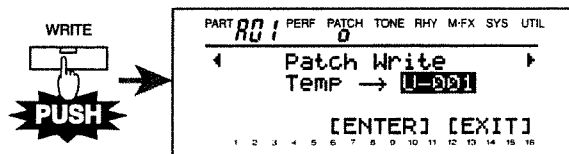
When in Patch mode, pressing [WRITE] will select the "Patch Write" page. In this way, pressing [WRITE] from each mode will automatically access the appropriate Write mode, so there is no need for you to select pages manually.

* *For details refer to the appropriate reference page.*

About Parts and Tones

The SC-880 is able to produce 32 different kinds of sound at once. An instrument such as the SC-880, a single unit which can simultaneously produce many sounds, is called a multi-timbral sound generator. A timbre is an instrumental sound. Being able to simultaneously play 32 sounds means that you can use 32 different instruments at once. In other words, you can create an orchestra-like ensemble of 32 musical parts. In the SC-880, the sound selected for each Part is called a Tone. (Tone List, p. 128–137) You can assign the sounds you want to each of 32 Parts to create your own ensemble.

There are two kinds of Parts—Normal Parts and Rhythm Parts. This is known as the Part Mode (p. 27). Normal Parts are used for playing melody or bass lines. Rhythm Parts are used for playing percussion instruments.

The SC-880 has three tone sets: Tone Set 1 contains the same sounds as the SC-55/SC-55mkII, Tone Set 2 contains the same sounds as the SC-88, and Tone Set 3 contains the SC-880's original sounds. (p. 17)

Here's how to select tones or tone sets to try out the sounds.

* *For details about Part Mode, refer to p. 27.*

■ Assigning Tones to Parts

1. Press [PATCH] (the indicator lights).

2. Rotate the VALUE dial to select "P-000 SC-880."

3. Press [TONE] (the indicator lights).

4. Use PART [◄] [►] to select the part for which you wish to make tone settings.
Press PART [◄] [►] to select the part number shown in the display: "A01.. A16, B01.. B16".

5. Use CURSOR [◄] [►] to move the cursor to the tone number.

Tone number
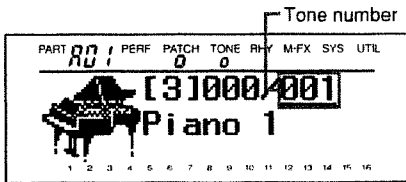
6. Rotate the VALUE dial to select the tone that you wish to assign to each part.
Rhythm sets will be selected for the rhythm part.

Displaying the bar indicator in Tone mode
In Tone mode, you can press [INFO] to select tones while viewing the bar indicator.
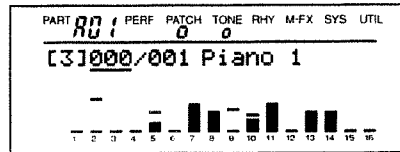
● About Tone Finder Function

The SC-880 provides a "Tone Finder" function that allows you to quickly find tones of a specified category.

1. Press [TONE] (the indicator lights).

2. Press the VALUE dial.
The Category Search page will appear. Tones are classified into 16 different categories.
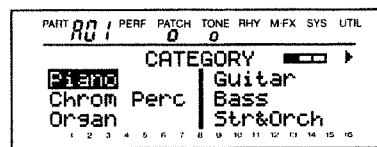
Piano
Chrom Perc
Organ
Guitar
Bass
Str&Orch
Ensemble
Brass
Reed
Pipe
Synth Lead
Synth Pad
Synth SFX
Ethnic
Percussive
SFX
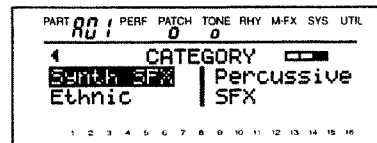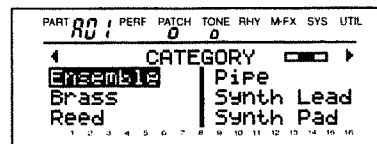
3. Rotate the VALUE dial to select "Category," and press the VALUE dial.

* *To cancel your selection, and return to TONE MODE, press [EXIT].*

4. A tone in the chosen category is selected.

* *When you choose a category, the last-used tone in that category will be selected.*

● Using the Same Sounds as the SC-88 or SC-55/55mkII

1. Press [PATCH] (the indicator lights).

2. Rotate the VALUE dial to select "P-000 SC-880."

3. Press [TONE] (the indicator lights).

4. Use CURSOR [◄] [►] to move the cursor to the tone set number.
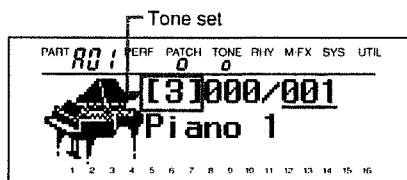
5. Rotate the VALUE dial to select the tone set.

On the SC-880, you can select from the following three tone sets.

> Tone Set 1: The same sounds as the SC-55/55Mk2.
> Tone Set 2: The same sounds as the SC-88.
> Tone Set 3: The original tone set of the SC-880.

* *The CM-64 sound map can also be selected. (p. 103)*

* *If you wish to remotely change the tone or tone set of a part from another MIDI device, refer to page 110.*

* *Some of the tones of the SC-880 will not sound above (or below) a given pitch. This is because the sounds have been created based on the pitch range that the actual instrument is able to cover.*

* *You can edit a tone to your taste and store it as a user tone. (p. 32)*

■ Making Variation Tone Settings

Each of the three tone sets of the SC-880 contain basic sounds **"capital tones"** and sounds with differing timbral nuances **"variation tones"**. The procedure on the previous page lets you select from the 128 capital tones (Tone list, p. 128–137). To select variation tones, use the following procedure.

1. Press [PATCH] (the indicator lights).

2. Rotate the VALUE dial to select "P-000 SC-880".

3. Press [TONE] (the indicator lights).

4. Use PART [◄] [►] to select the part for which you wish to make tone settings.

5. Use CURSOR [◄] [►] to move the cursor to the Variation number.
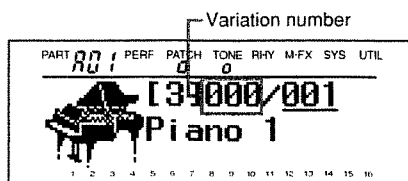
6. Rotate the VALUE dial to select the Variation number.

* *If the part has been specified as the rhythm part (p. 27), it is not possible to select variations. This is because rhythm sets do not have variations.*

* *Variation numbers are not always continuous.*

* *The CM-64 tone map consists of variation tones of tone set 1. Original tones that you yourself create (p. 32) will be variation tones of tone set 2 and tone set 3.*

■ Reading Tone and Variation Numbers

Each sound (tone) of the SC-880 has two numbers; an Tone number and a Variation number. Sounds with Variation number 000 are Capitals, and the sounds with numbers other than 000 are Variations.

Tone set 1

Tone set 2

Tone set 3
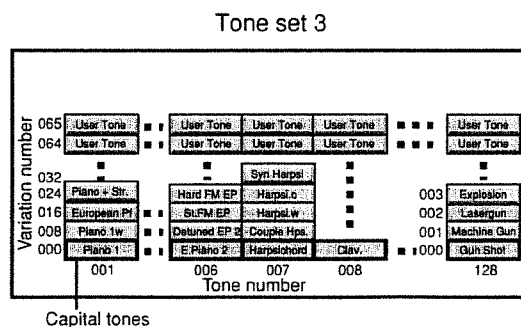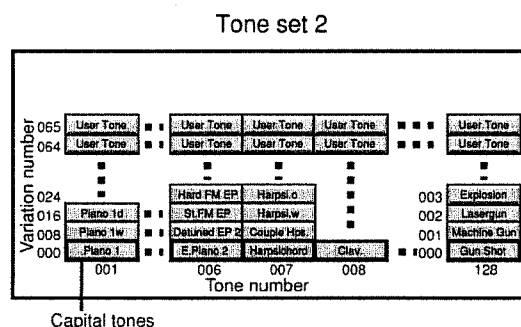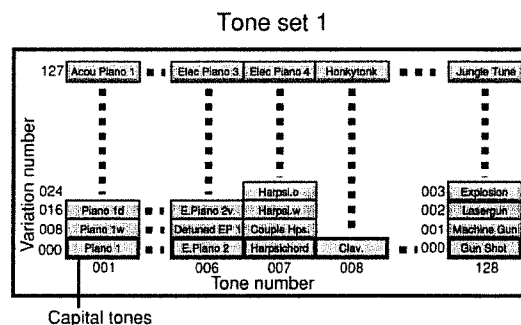
■ The MIDI Channel of a Part

To each of SC-880's 32 Parts, there is assigned a tone and also a channel. Channels are a concept used in MIDI to distinguish notes that should be played by different tones in an ensemble. Normally, there is no need to change the channel of a Part when using the SC-880. However, it could sometimes be interesting to set two Parts to the same channel, so two sounds simultaneously play the same musical line. To change the MIDI channel of a Part, use the following procedure.

* For details about MIDI, refer to p. 106.

1. Press [PATCH]-[TONE] (the indicators light).

2. Use PART [◀] [▶] to select the part whose settings you wish to change.

3. Press [EDIT] (the indicator lights).
You will enter Tone Edit mode.

4. Use CURSOR [▲] to move the cursor to the menu name.

5. Select "Rx MIDI," by rotating the VALUE dial.
"Rx MIDI" settings occupy four pages. Here we will select the first page.

6. Use CURSOR [▲] [▼] to move the cursor to "Receive Channel."

```
PART A01  PERF PATCH TONE RHY M·FX SYS UTIL
               O    O
◀        Rx MIDI     ▬▭▭      ▶
Receive Channel:          A01
CC1 Number:                16
CC2 Number:                17
  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
```
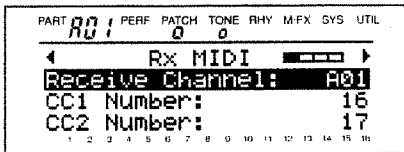
7. Rotate the VALUE dial to select the Channel.
The "Receive Channel" indication will change to "A01..A16 A– B01..B16 B–," select the desired MIDI channel number. Parts for which you specify "A–" or "B–" will ignore all MIDI messages other than system exclusive messages, and therefore will not sound.

■ Which MIDI IN Will Be Used by Each Part?

The SC-880 has two MIDI IN jacks. This is because there are only 16 MIDI channels, making it necessary to have two MIDI jacks in order to play 32 Parts.
Parts are classified into Part Group A (A01–A16) and Part Group B (B01–B16), with sixteen in each group. The MIDI channel assigned to each Part is also displayed in two groups as A01–A16 or B01–B16. At the factory settings, Part groups A and B correspond to SC-880's two MIDI IN jacks A and B. In other words, MIDI messages received at MIDI IN A are sent to the Part group A, and MIDI messages received at MIDI IN B are sent to the Part group B. For example, a MIDI message on channel 5 received at MIDI IN B will sound Part 5 of Part Group B (B05) (with the factory settings).

* Be aware that the way in which the data is sent from the two MIDI IN jacks to the various Parts will depend on the setting of the "Receive Connection" System parameter (Input Modes p. 94). Also, Exclusive messages received at MIDI IN A can be passed on to Parts in part group B, depending on the specified address. (p. 111)
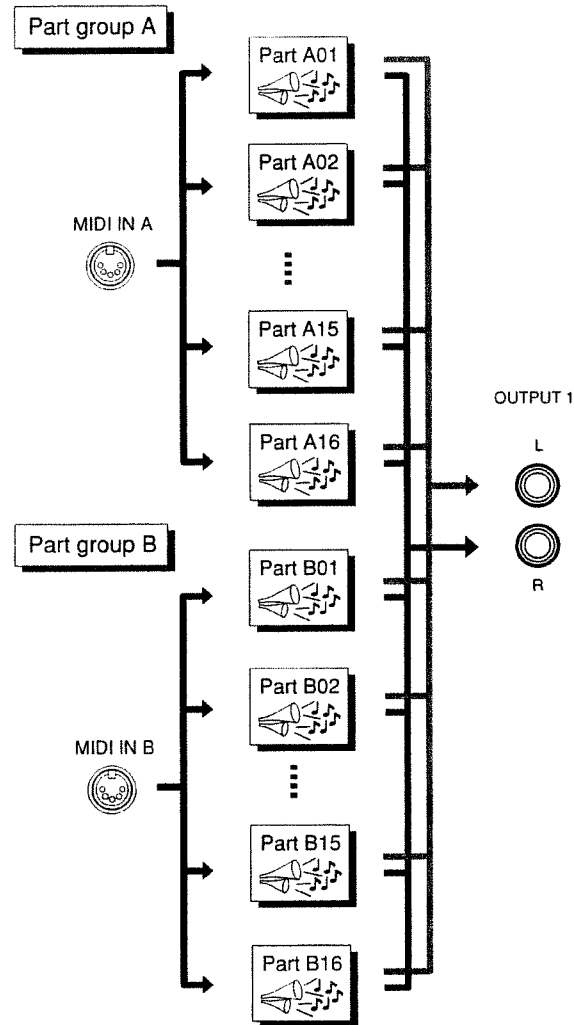
■ How Polyphony and Voices Are Related

The sounds of the SC-880 consist of units called **voices**. There is a limit to how many of these **voices** can sound at once, and in the case of the SC-880, up to 64 simultaneous voices can be used. Some sounds (Tones) use 1 voice and others use two voices (Tone list, p. 128–137). The main reason that some sounds use two voices is to allow different timbres to be produced by different velocity values.

If more than 64 voices are used at once, later-sounded notes will be given priority, so notes that have already been sounding will be turned off, beginning with the oldest ones. If you use only single-voice tones, you will be able to play 64 notes simultaneously; but if some of the tones use two voices, you won't be able to get 64 simultaneous notes. Even if a MIDI Note Off message (p. 107) is received, voices will be used for as long as the sound is heard. Keep this in mind when using sounds with a long release (p. 30).

* *If song data created with 64-voice playback in mind is played back on a sound module with fewer voices, some notes will drop out, and the musical result will not be as it should. The SC-55 has 24 voices, and the SC-55mkII has 28 voices.*

■ Concerning Legato-Enabled Sounds

The SC-880 provides legato-enabled sounds, which are ideally suited for legato playing, and which can realistically simulate this performance technique.

To understand this feature, consider how most string instruments produce sound. Usually, a brief attack-like sound will be heard only at the very instant the string is made to vibrate. After that a much mellower, attack-free sound continues to emanate during the string's vibration. The legato-enabled sounds simulates such variable attack-portion characteristics of string sounds by switching on or off certain special voices within an Instrument according to the way the keyboard is played.

Any Instrument that has a " :" at the end of its name (such as "Violin:") is a legato-enabled sound.

Try out one of these Patches to hear how it works. If you are using a keyboard, play a note and keep your finger on that key while playing another note.

You should hear a distinct attack portion with the first note you play, while the second one contains almost no attack components, and sounds much smoother.

Let's try using this tone to perform.

1. Press [PATCH]-[TONE] (the indicators light).

2. Use CURSOR [►] to move the cursor to the variation number.

3. Rotate the VALUE dial to select "[3] 000/041 Violin."

4. Try out one of these Patches to hear how it works.

You should hear a distinct attack portion with the first note you play, while the second one contains almost no attack components, and sounds much smoother.

At this time," L" will be displayed following " :" of the tone name.
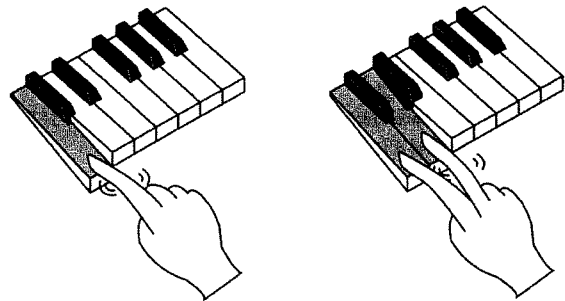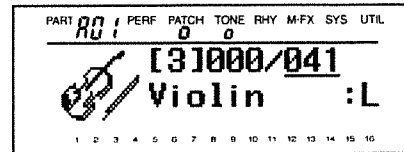
5. If you want to sound the attack portion each time, simply release your finger from a key before playing the next note.

At this time," L" will not be displayed following " :" of the tone name.
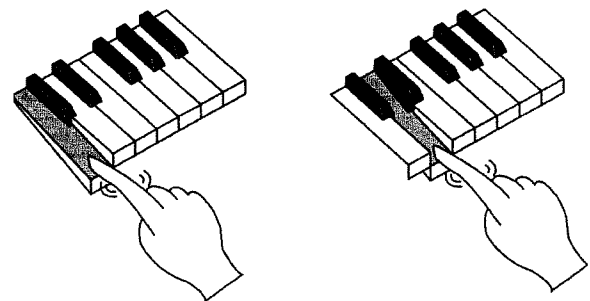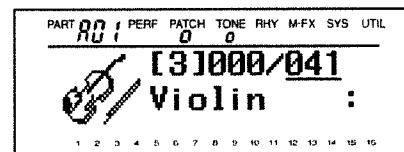
* *Legato Control cannot be switched on and off on an individual Tone basis. You should choose and edit an Tone that matches your intended usage.*

* *The legato indication is shown only in the Tone Name screen of the Tone mode.*

* *Tones which support legato can be selected only in Tone Set 3.*

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Chapter 2. Patch Mode Settings

About Patch Mode

In Patch mode you can play "patches," each of which consists of up to six parts A01–A06 plus effect settings (system effects and multi-effects).

The SC-880 provides 256 patches, each of which uses one or more high-quality tones, and also takes advantage of functionality such as effects to create the sound. (Patch List p. 166–173)

In Patch mode, you can create and save 128 of your own patches as User patches. Settings that you make in Patch mode can be divided into those that affect all parts, and those that are made independently for each part. Settings affecting all parts are made in Patch Edit mode, while settings that are independent for each part are made in Tone Edit mode.

* You can also make settings for parts A07–A16 and B01–B16, and save them as a User Performance. (p. 21)

* At the factory settings, preset patches are stored in P-001–P-128 and U-001–U-128. Patches P-001–P-128 are patches which use a maximum of 2 parts, and are the same as the patches of the SC-88 Pro. Patches U-001–U-128 are patches which use up to 6 parts, and are unique to the SC-880.

Figure shows how the Patch mode is organized.
The things that can be set in Tone mode, Rhythm mode, and M-FX mode are the same as what can be set in the Performance mode. For info on carrying out Tone or Rhythm mode editing while in Performance mode, refer to Chapter 2
Multi-effect mode (M-FX) is explained in Chapter 5 (p. 49).
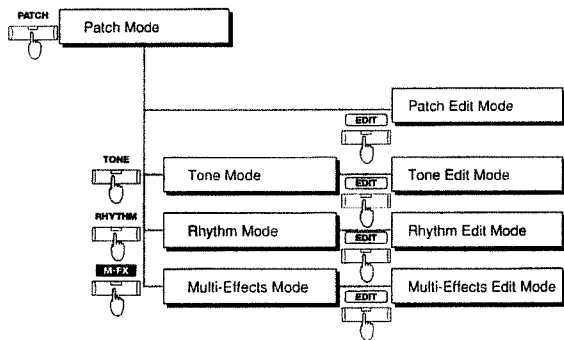
Each patch consists of the following structural elements.
Elements of a Patch
    Tones for parts A01–A06 and settings for each part
    Parameters common to all parts
    System effects settings
    Multi-effects settings

Unused parts in a preset patch are set to their initial values.
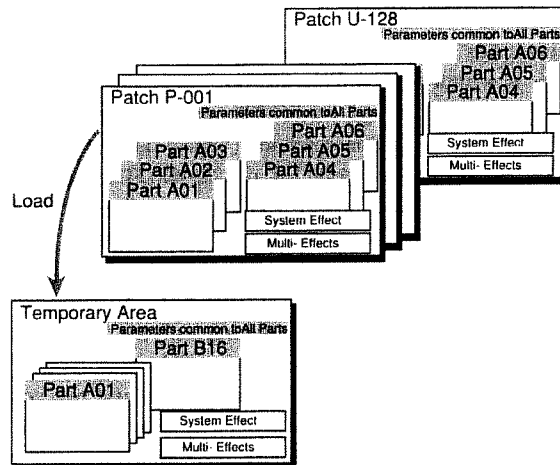
Patches can be selected only for Part Group A, and you can set parameters for effects (system effect, multi-effects) and for parts A01–A06.

By playing song data with Part Group B while you play the Part Group A Patches from a keyboard, etc., you can enjoy solo playing while adding unique effects.

Some sequencing software is unable to transmit data from the computer connector to play Part Group B. In this case, set the Input Mode to "Xconnect" so that the Part Group B will be played (p. 94).
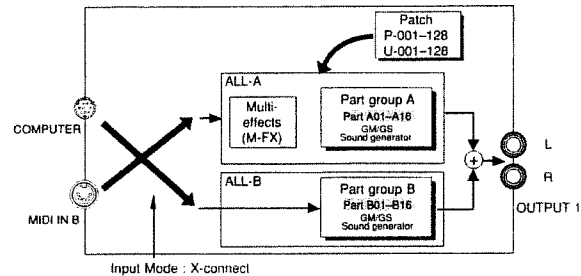
* If you select a patch in Double Module mode, the equalizer and delay settings will be ignored. Also, patches cannot be selected for Part Group B.

■ Selecting a Patch

On the SC-880, you can select from 256 different patches: Preset patches P-001–P128, and User patches U-001–U128. Preset patches have a "P" before their number, while user patches have a "U," as follows.

```
┌─── Preset Patch          ┌─── User Patch
┌──────────────────┐      ┌──────────────────┐
│ ℗-000            │      │ Ⓤ-001            │
│ SC-880           │      │ -USER PATCH 001- │
│ ---------------- │      │ ---------------- │
└──────────────────┘      └──────────────────┘
```

1. Press [PATCH] (the indicator lights).

2. Rotate the VALUE dial to select the patch.
If you hold down the VALUE dial while you rotate it, the patch number will change in steps of 10.

* *When the patch number reaches "P-128," the next selected patch will be "U-001."*

```
┌──────────────────┐          ┌──────────────────┐
│ P-128            │          │ U-001            │
│ 128 EPILOGUE     │ ◄──►    │ -USER PATCH 001- │
│ ---------------- │          │ ---------------- │
└──────────────────┘          └──────────────────┘
         ↑↓              ⟳         ↑↓
┌──────────────────┐          ┌──────────────────┐
│ P-000            │          │ U-128            │
│ SC-880           │          │ -USER PATCH 128- │
│ ---------------- │          │ ---------------- │
└──────────────────┘          └──────────────────┘
```
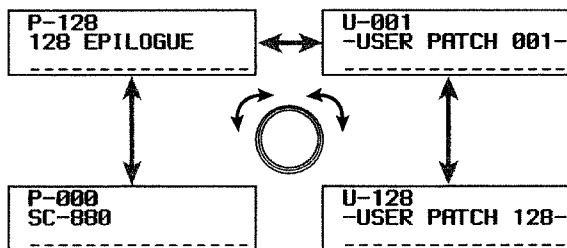
* *When you switch patches, the settings of parts A07–B16 will be determined by the "Patch Load Mode" setting. (p. 96)*

■ Saving a Patch

Patches that you create can be saved as one of 128 user patches U-001–U128. (p. 32)

1. Edit the patch.

2. Press [WRITE] (the indicator lights).

3. Use CURSOR [▲] to move the cursor to the menu name.

4. Select "Patch Write," by rotating the VALUE dial.

```
┌────────────────────────────────────┐
│ PART 𝘈𝘜 𝟣  PERF PATCH TONE RHY M-FX SYS UTIL │
│              0                     │
│ ◄    Patch Write             ►    │
│      Temp  →  U-001               │
│            [ENTER] [EXIT]          │
│ 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 │
└────────────────────────────────────┘
```
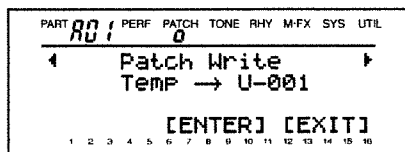
5. Use CURSOR [▼] to move the cursor to the user patch number.

6. Rotate the VALUE dial to select the user patch number at which you wish to save the data.
User patches can be saved in the 128 patches U-001–U-128.

7. Press [ENTER].
You will be asked to confirm that you wish to save the patch. If you decide not to save, press [EXIT].

8. Press [ENTER] to save the user patch.

* *When you save a patch as a user patch, the patch that was previously stored in that location when the instrument left the factory will be lost. If you wish to recall the factory-set patches, refer to p. 105.*

■ Saving as a Performance

You can save your settings as a performance which includes the patch. Settings for parts A01–A06 of the selected patch, effects (system effects and multi-effects), and part settings for parts A07–B16 can be saved as a user performance.
The user performance that you saved can be selected from Performance mode.

1. Carry out the editing in patch mode.

2. Press [WRITE] (the indicator lights).

3. Use CURSOR [▲] to move the cursor to the menu name.

4. Select "Performance Write," by rotating the VALUE dial.

```
┌────────────────────────────────────┐
│ PART 𝘈𝘜 𝟣  PERF PATCH TONE RHY M-FX SYS UTIL │
│              0                     │
│      Performance Write       ►    │
│      Temp  →  ▐U-1▌                │
│            [ENTER] [EXIT]          │
│ 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 │
└────────────────────────────────────┘
```
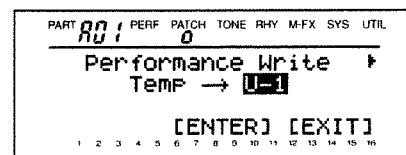
5. Use CURSOR [▼] to move the cursor to the user performance number.

6. Rotate the VALUE dial to select the user performance number at which you wish to save the data.
User performances can be saved in the 8 performances U-1–U-8.

7. Press [ENTER].
You will be asked to confirm that you wish to save the user performance. If you decide not to save, press [EXIT].

```
┌────────────────────────────────────┐
│ PART 𝘈𝘜 𝟣  PERF PATCH TONE RHY M-FX SYS UTIL │
│              0                     │
│      Performance Write            │
│      Temp  →  U-1                 │
│      Sure?  [ENTER] [EXIT]        │
│ 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 │
└────────────────────────────────────┘
```
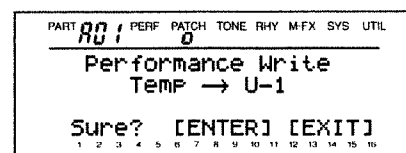
8. Press [ENTER] to save the user performance.

Creating a Patch (Patch Edit Mode)

To create a patch, you must assign a tone to each part of the patch, make settings for each part, and make effect settings. In Patch Edit mode, you can make settings for all parts and for the effects (system effects and multi-effects).
To enter Patch Edit mode, press [EDIT] from Patch mode.
Parameters in Patch Edit mode are set using the following procedure.

1. Press [PATCH] (the indicator lights).

2. Rotate the VALUE dial to select the patch that you wish to edit.

3. Press [EDIT] (the indicator lights).

4. Use CURSOR [▲] to move the cursor to the menu name.

5. Rotate the VALUE dial to select the page.

6. Use CURSOR [▲] [▼] [◄] [►] to select the parameter whose value you wish to change

7. Rotate the VALUE dial to adjust the value.
Patch Edit mode contains pages with the following menu names.

> Patch Name
> Master Control
> Reverb
> Chorus
> Delay
> Equalizer
> Multi-FX

Chapter 2 explains the parameters in the "Patch Name," "Master Control" pages.

* *Pages for "Reverb," "Chorus," "Delay" and "Equalizer" are explained in Chapter 4 System Effect. For details on "Multi-FX," refer to Chapter 5 Multi-effects.*
* *Since your editing will affect the data in the temporary area, the modified contents will be lost when you change patches or switch to Performance mode. To keep your edits, you must save them into user memory. (p. 21)*
* *A Patch whose parameter settings have been modified will be indicated by an asterisk (*) before the patch number.*

■ Naming a Patch

In the "Patch Name" page you can assign a name of up to 16 characters to a user patch.

1. Edit the patch.

2. Press [EDIT] (the indicator lights).
Enter the patch edit mode.

3. Use CURSOR [▲] to move the cursor to the menu name.

4. Select "Patch Name," by rotating the VALUE dial.
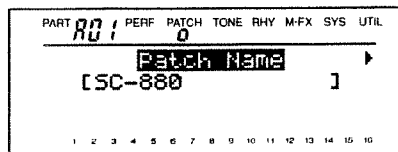
5. Press CURSOR [▼] to move the cursor to the patch name.

```
PART ຖ຿ ı  PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
     ฿ບ ı          0
          ▛▜▛▜▛ ▛▜▛▜▛▜       ►
     [SC-880            ]

     1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
```

6. Use CURSOR [◄] [►] to move the cursor to the character that you wish to change.

7. Rotate the VALUE dial to select the desired character.
The following characters can be selected:
   A–Z, a–z, 0–9, &#!?.,:;""+-/<=>()[]{}^_|$%@¥'-><-

8. Repeat steps 6–7 to input the name.

9. When you finish inputting the name, press [EXIT] to exit Patch Edit mode.
When you finish inputting the name, press [WRITE] to save the data as a User patch (p. 21). If you do not save the settings as a User patch, the name you input will be lost.

■ Making Settings that Affect All Parts

In the "Master Control" page, you can make settings for the following parameters which affect all parts.
   Level
   Pan
   Master Tune
   Key Shift

● Setting the Volume
Level: 0–127 (Master Level)
This parameter adjusts the volume of all the parts. As the displayed value increases, the volume will increase. The basic volume level of this entire unit is adjusted by the Volume knob. If the volume knob is at minimum position, there will be no sound even if you increase this parameter.

* *When the Level is 0, there will be no sound even if you move the SC-880's VOLUME knob to the maximum position.*

● Pan (stereo location) Settings
Pan: L63–0–R63 (Master Pan)
This parameter sets the Pan (stereo position) for all the parts. As the displayed L value increases the sound will move further left, and as the R value increases the sound will move further right.

* *For some tones, a bit of sound may be heard from the opposite speaker even if Pan has been set fully left or right.*

* *If you are listening to the SC-880 in mono, Pan settings will have no effect.*

● Matching the Pitch to Another Instrument

Master Tune: 415.3–466.2 Hz

When you are playing in an ensemble with other instruments or need to set the SC-880 to match the pitch of another instrument, adjust the Master Tune setting. The displayed value (e.g., 440.0 Hz) indicates the frequency of the A4 note's pitch (note number 69).

● Setting the Pitch of the Sound

Key Shift: -24–0–+24

Key Shift adjusts the pitch of the sound in semitone steps. For example, if you were playing back song data from a sequencer, you could use the Key Shift parameter to change the key of the song without changing the sequencer settings. Or, if you are singing along with sequence data, you can adjust Key Shift to move the song to the key most comfortable for your voice. As the displayed value rises (falls) one step, the pitch will rise (fall) one semitone. This means that 12 steps equal one octave.

* *Even if you adjust Key Shift for all parts, the pitch of the Rhythm Part will not be affected.*

Tone Edit Mode

In Tone Edit mode you can edit the settings for each part and the tone or rhythm set that is assigned to each part.
Use PART [◄] [►] to select the part that you wish to set. The current part will be shown in the PART field of the display.

Current Part
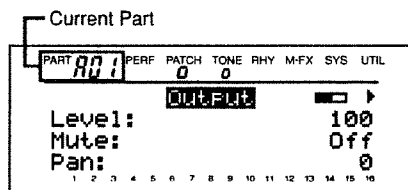
■ Settings for Each Part

Use the following procedure to set the parameters of each part.

1. Press [PATCH]-[TONE]-[EDIT] (the indicators light).
You will enter Tone Edit mode.

2. Use PART [◄] [►] to select the part for which you wish to make settings.

3. Use CURSOR [▲] to move the cursor to the menu name.

4. Rotate the VALUE dial to select the pages for which you wish to make settings.

5. Use CURSOR [▲] [▼] [◄] [►] to select the parameter that you wish to modify.

6. Rotate the VALUE dial to adjust the value.

Tone Edit mode contains pages with the following menu names.

Output
Effect Send
Rx MIDI
Mode
Keyboard Range
Pitch
Scale Tune
Part Tone Modify
USER TONE
Modulation
Bender
Channel After
Poly After
CC1
CC2

* *Pages for "Effect Send" is explained in Chapter 4 System Effect.*

■ Settings for the Output of Each Part

In the "Output" page, you can make the following settings related to the output of the part.

Level
Mute
Pan
Velocity Depth
Velocity Offset
OUT Assign

● Setting the Volume

Level: 0–127 (Part Level) [INFO]

This parameter adjusts the volume of each part. Higher values result in a louder sound.

● Muting

Mute: On/Off (Part Mute) [INFO]

This function allows you to mute the sound of a specific part so that it will not be heard. When "MUTE" is turned On, the part shown in the upper left of the display will be muted. For example, you can use a sequencer to play back a recorded ensemble, and mute one of the parts so you can play that part yourself. The lowest dot on the bar display indicates the mute on/off status of each part. The dot will be off for parts for which Part Mute is turned on.

* *When a General MIDI System On or GS Reset message (p. 109, 110) is received, muting will be canceled. If you do not wish mute to be canceled, turn on Mute Lock (p. 97).*

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● Pan (stereo location) Settings

Pan: Rnd, L63–0–R63 (Part Pan)

Pan refers to the position in the stereo field. For example, you might place the drum set and bass in the center, the guitar at the right, and the keyboard at the left. To place the sound in the center, set this value to 0. As the L-number increases the sound will move further to the left, and as the R-number increases the sound will move further to the right. With a setting of "Rnd" (random), each note will be placed at an unpredictable location.

Velocity Depth = 64
Velocity Offset = 64
Fig. 1   MIDI Velocity

Velocity Depth = 32
Velocity Offset = 64
Fig. 2   MIDI Velocity

Velocity Depth = 127
Velocity Offset = 64
Fig. 3   MIDI Velocity

Velocity Depth = 64
Velocity Offset = 32
Fig. 4   MIDI Velocity

Velocity Depth = 64
Velocity Offset = 96
Fig. 5   MIDI Velocity

Velocity Depth = 64
Velocity Offset = 127
Fig. 6   MIDI Velocity

Keyboard — Bass — Guitar — Drum Set

L63 Left Speaker ◄————— 0 Center —————► R63 Right Speaker
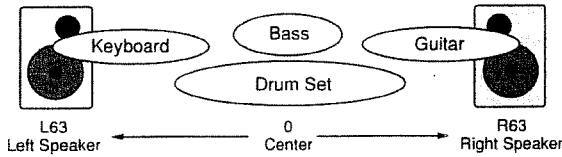
* *In the case of a Drum Set, the pan position has been fixed for each percussion instrument. Adjusting the Pan of a Drum Set will shift the overall set to left or right.*

* *For some tones, some sound may be heard from the opposite speaker even if Pan has been set fully left or right.*

* *If your amp/speaker system is monaural, Pan will have no effect.*

● Setting the Relation Between Keyboard Dynamics and Loudness

Velocity Depth: 0–127
Velocity Offset: 0–127

The force with which you play a note on MIDI keyboard is transmitted as MIDI Velocity data. Strongly played notes will have a higher velocity value. The Velocity Depth and Velocity Offset parameters determine the relation between the force of your keyboard playing and the loudness of the sound that results.

If Velocity Depth is increased, small differences in your playing dynamics will make a large difference in the loudness of the sound (Fig.3). If Velocity Depth is decreased, even large differences in your playing dynamics will make only a small difference in the loudness of the sound (Fig.2).

If Velocity Offset is set higher than 64, even softly played notes (i.e., notes with a low velocity) will be sounded loudly (Fig.5). If Velocity Offset is set lower than 64, even strongly played notes (i.e., notes with a high velocity) will be sounded softly (Fig.4).

* *For some settings, there may be no sound. If so, increase Velocity Depth or Velocity Offset.*
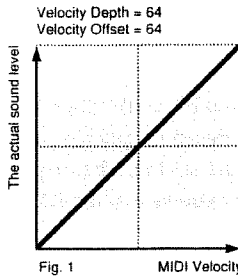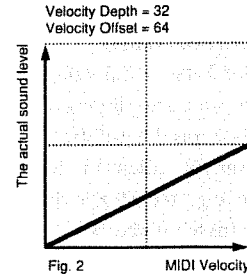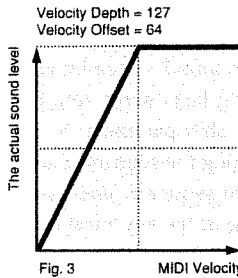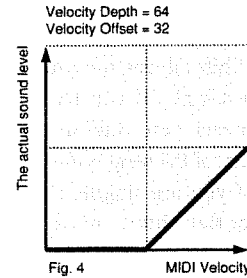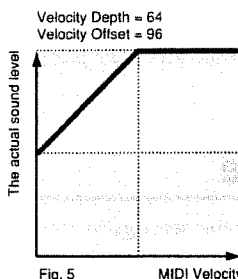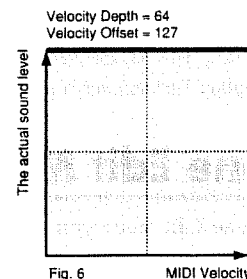
● Setting the Output Destination

OUT Assign: OUT-1/OUT-2/OUT-2L/OUT-2R

Specifies the output jack from which the sound of each part will be output.

OUT-1: The sound together with the effect sound will be output in stereo from the OUTPUT 1 jacks.

OUT-2: The direct sound without the effect sound will be output in stereo from the OUTPUT 2 jacks.

OUT-2L: The direct sound without effects will be output from the OUTPUT 2L jack. (The Pan setting will have no effect.)

OUT-2R: The direct sound without effects will be output from the OUTPUT 2R jack. (The Pan setting will have no effect.)

* *The headphones jack will output the sound of OUTPUT 1. This means that the sound of parts assigned to OUTPUT 2 will not be heard from the headphone jack.*

* *This is valid only when System OUT Mode (p. 96) is set to Select. Be aware that if it is set to Fixed, the above settings will be ignored.*

* *At the factory settings, all parts are set to OUT-1.*

* *The sound from OUTPUT 2 is output at a fixed volume, unaffected by the position of the volume knob.*

■ MIDI-Related Settings for Each Part

In the "Rx MIDI" page you can make the following MIDI-related settings for each part.

Receive Channel
CC1 Number
CC2 Number
Bank
Bank L
NRPN
RPN
PC
CC
Mod
Bend
CAf
PAf
Volume
Panpot
Expres
Hold-1
Porta
Soste
Soft

● MIDI Receive Channel Setting

Receive Channel: A01–A16, A--, B01–B16, B-- ⌐→米⌐

This sets the MIDI receive channel of the part.

● Setting the Controller Numbers

CC1 Number: 1-95 INFO
CC2 Number: 1-95 ⌐→米⌐

Specifies the controller numbers that will be used when controlling the CC1 and CC2 parameters (p. 31) via MIDI.

For example, if you set CC1 Number to 16, the value of an incoming MIDI controller number 16 message will affect the sound as specified by the setting of the CC1 parameter.

● Restricting MIDI Reception

The "Rx MIDI" page provides the following parameters, which allow the reception of MIDI messages to be tailored in various ways.

Bank, Bank L, NRPN, RPN, PC, CC, Mod, Bend, CAf, PAf, Volume, Panpot, Expres, Hold-1, Porta, Soste, Soft

Bank: On/Off (Rx Bank Select) (Bank Select Receive Switch) ⌐→米⌐

To remotely select the SC-880's sounds from another MIDI device, you can send Bank Select messages and Program Change messages to the SC-880. If Bank is turned on, these MIDI messages can select Variation tones (p. 17) and User tones (p. 32). If this parameter is turned off, bank select messages will be ignored, meaning that MIDI messages cannot select Variation tones or User tones (they will select Capital tones).

For details on using MIDI messages to select tones, refer to p. 110.

Bank L: On/Off (Rx Bank Select LSB) ⌐→米⌐

When you wish to switch the SC-880's tone sets from another MIDI device, set the lower byte (p. 178) of the Bank Select message to specify the desired tone set.

When at "Bank: On," a setting of "Bank L" On will cause the tone set to be selected by the lower byte of the bank select message. A setting of "Bank L" Off will cause the lower byte of the bank select message to be ignored, so that MIDI messages will not change the tone set. When at "Bank: Off," the lower byte of the bank select message will be ignored regardless of when "Bank L" is turned On/Off, so that MIDI messages will not change the tone set.

NRPN: On/Off (Rx NRPN) ⌐→米⌐

NRPN (Non-registered Parameter Number p. 109) messages allow you to modify vibrato, filter and envelope values (p. 179) via MIDI. If Rx NRPN is on, these sound parameters can be modified by MIDI messages. If Rx NRPN is off, this will not be possible.

* When a "General MIDI System On" is Received, the Bank Select Receive and NRPN Receive switches will be Turned OFF.

* When a "GS Reset" is received, the Bank Select Receive and NRPN Receive switches will be turned ON.

RPN: On/Off ⌐→米⌐

RPN (Registered Parameter Numbers p. 108) are used when you wish to use MIDI messages to modify the Pitch Bend Sensitivity, Master Fine Tuning, or Master Coarse Tuning (p. 180) values. If RPN is On, MIDI messages can be used to modify the values of these parameters. If this is Off, MIDI messages cannot be used to modify the values of these parameters.

PC: On/Off ⌐→米⌐

Program Change messages can be used to remotely switch the tones of the SC-880 using another MIDI device. If "PC" is On, program change messages can be used to select tones. If "PC" is Off, program change messages will be ignored, so it will not be possible to use MIDI messages to select tones.

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CC: On/Off

Control Change messages can be used to control the modulation, pan, etc., of the SC-880 from another MIDI device. If "CC" is On, control change messages can be used to control modulation or pan, etc. If "CC" is Off, control change messages will be ignored, so it will not be possible to control modulation or pan, etc., regardless of the On/Off settings of "Mod," "Volume," "Panpot," "Exprs," "Hold 1," "Porta," "Sosten," or "Soft."

* *Even if "CC" is turned Off, channel mode messages will not be ignored. (p. 180)*

Mod: On/Off

To control the vibrato of the SC-880 from another device, use control change number 1. When "Mod" is turned On, control change number 1 will adjust the depth of the vibrato. If "Mod" is turned Off, control change number 1 will be ignored, so that it will not be possible to use MIDI messages to adjust the vibrato depth.

Bend: On/Off

To convey the bender lever (or pitch bend wheel) movements of another device to the SC-880, use pitch bender messages. When "Bend" is turned On, pitch bender messages will convey movements of the bender level. When "Bend" is turned Off, pitch bender messages will be ignored, so that it will not be possible to use MIDI messages to convey movements of the bender level.
The result of the bender level movements will depend on the setting of the "Bender" page. (p. 31)

CAf: On/Off

To convey channel aftertouch (channel pressure) usage on another device to the SC-880, use channel pressure messages. When "CAf" is turned On, channel pressure messages will convey the amount of pressure that is applied to an external keyboard. When "CAf" is turned Off, channel pressure messages will be ignored, so it will not be possible to use MIDI messages to convey the usage of aftertouch.
The result of the aftertouch will depend on the setting of the "Channel After" page. (p. 31)

PAf: On/Off

To convey polyphonic aftertouch (polyphonic key pressure) usage on another device to the SC-880, use polyphonic key pressure messages. When "PAf" is turned On, polyphonic key pressure messages will convey the amount of pressure that is applied to an external keyboard. When "PAf" is turned Off, polyphonic key pressure messages will be ignored, so that it will not be possible to use MIDI messages to convey aftertouch usage.
The result of the aftertouch will depend on the setting of the "Poly After" page. (p. 31)

Volume: On/Off

To control the part volume of the SC-880 from another device, use control change number 7 messages. When "Volume" is turned On, control change number 7 can be used to set the volume. When "Volume" is turned Off, control change number 7 will be ignored, so that it will not be possible to use MIDI messages to set the volume.

Panpot: On/Off

To control the part pan of the SC-880 from another MIDI device, use control change number 10 messages. When "Panpot" is turned On, control change number 10 can be used to set the pan. When "Panpot" is turned Off, control change number 10 will be ignored, so that it will not be possible to use MIDI messages to set the pan.

Expres: On/Off

To control the part expression of the SC-880 from another MIDI device, use control change number 11 messages. When "Exprs" is On, control change number 11 can be used to adjust the expression. When "Exprs" is Off, control change number 11 will be ignored, so that it will not be possible to use MIDI messages to control expression.

Hold-1: On/Off

To convey damper pedal movements from another device to the SC-880, use control change number 64. When "Hold 1" is On, control change number 64 can be used to convey damper pedal movements. When "Hold 1" is Off, control change number 64 will be ignored, so that it will not be possible to use MIDI messages to convey damper pedal movements.

Porta: On/Off

To switch the SC-880's portamento effect from another MIDI device, use control change number 65. When "Porta" is On, control change number 65 can be used to apply portamento. When "Porta" is Off, combination number 65 will be ignored, so that it will not be possible to use MIDI messages to apply portamento.

Soste: On/Off

To convey sostenuto pedal movements from another device to the SC-880, use control change number 66. When "Sosten" is On, control change number 66 can be used to convey sostenuto pedal movements. When "Soste" is Off, control change number 66 will be ignored, so that it will not be possible to use MIDI messages to convey sostenuto pedal movements.

Soft: On/Off

To convey soft pedal movements from another device to the SC-880, use control change number 67. When "Soft" is On, control change number 67 can be used to convey soft pedal movements. When "Soft" is Off, control change number 67 will be ignored, so that it will not be possible to use MIDI messages to convey soft pedal movements.

■ Settings That Determine How a Part Will Sound

In the "Mode" page you can make settings for the following parameters.

> Part Mode
> Mono/Poly Mode
> Assign Mode

In the "Keyboard Range" page you can make settings for the following parameters.

> Low
> High

In the "Pitch" page you can make settings for the following parameters.

> Key Shift
> Fine Tune

In the "Scale Tune" page you can make settings for the following parameters.

> C, C#, D, D#, E, F, F#, G, G#, A, A#, B

● Specifying the Part Mode

Part Mode: Normal/Rhythm 1/Rhythm 2

For parts playing conventional instrument sounds, select Norm (Normal mode). For parts playing percussion or drums, select Rhythm 1 or Rhythm 2. Rhythm Parts play a different sound (Instrument) for each MIDI note number (p. 107). In other words, a single part can play many different percussion instrument sounds (Rhythm set list p. 138–150).

The Rhythm 1 and Rhythm 2 Parts allow you to simultaneously use two Rhythm sets. For example, if Rhythm Parts are set as shown below, when you change the STANDARD 1 Rhythm set of Part A10 to the TR-808, the selection for Part A12 will also change to TR-808. For details on how to assign a Rhythm set to a part, refer to p. 33.

Part name	(Part Mode)	Name of Rhythm set
Part A10	(Rhythm 1)	STANDARD 1
Part A11	(Rhythm 2)	JAZZ
Part A12	(Rhythm 1)	STANDARD 1

● Specifying How the Tone will Sound

Mono/Poly Mode:Mono/Poly

If a part is set to Mono (Mono Mode), that part will play only one note at a time. It is effective to select Mono Mode for parts that are playing a naturally monophonic instrument such as a trumpet or sax. Select Poly Mode for parts that are playing chords.

* For a Rhythm part, changing the Mono/Poly Mode setting will not affect the sound.

● Specifying How Simultaneously Played Notes will Sound

Assign Mode: Single/Lmtd Multi/Full Multi

The "Assign Mode" setting specifies how notes will sound when the same key is played two or more times in an overlapping way.

If "Assign Mode" is set to Single, notes played on a key (note number) that is already sounding will cause the older note to be silenced, and the new note will sound in its place. For the rhythm part, a setting of Single is the default setting.

If "Assign Mode" is set to Lmtd Multi (Limited Multi), notes played on a key (note number) that is already sounding will produce the impression that the notes are overlapping, but the number of voices that will actually sound will be limited to fewer than the actual number of times that the key was pressed. For normal parts, Lmtd Multi is the default setting.

If "Assign Mode" is set to Full Multi, repeated notes on the same key will use as many voices as the number of times that the key was actually repeated.

● Specifying the Range in which Notes will Sound

Low: C-1–G9
High: C-1–G9

The Key Range parameters determine the pitch range over which the instrument will be sounded. Keyboard Range Low (the lowest note) and Keyboard Range High (the highest note) will determine the range of notes that will sound. These values are displayed as key names. You can specify a value between C-1 and G9 (0–127), and middle C is C4 (60).
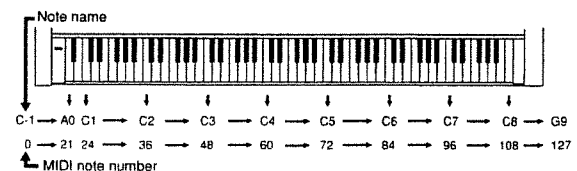
For example, if you assign two parts to the same MIDI channel and set the Keyboard Range of one to C-1–B3 and the other to C4–G9. Then you could assign different sounds to each part, and play two different sounds on either side of C4. Or, you could set the keyboard ranges of two parts to overlap, and layer the two sounds.

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* *Be aware that if Keyboard Range High is set to a note name lower than Keyboard Range Low, there will be no sound.*
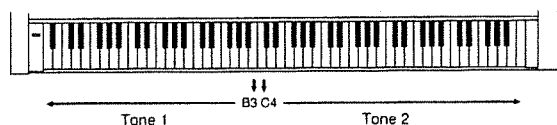
● Transposing

Key Shift: -24–0–+24 ☐※☐

This parameter transposes the part. As the value increases (decreases) the pitch will rise (fall) in steps of a semitone. 12 steps make a difference of 1 octave. With a setting of 0 the pitch will not be affected.

● Making Fine Adjustments to the Pitch

Fine Tune: -100.0–+100.0 cent ☐※☐

Use this parameter when you wish to make fine adjustments to the tuning of a part. Positive (+) settings will raise the pitch, and negative (-) settings will lower the pitch. If two or more parts are set to the same MIDI channel and the same tone, you can spread their Fine Tuning settings apart to add rich depth and breath to the sound.

* *To adjust the pitch of all parts, use the Master Tune parameter (p. 23).*

* *To transposes the part, use the KEY SHIFT parameter (p. 28).*

● Specifying the Pitch of Each Note in the Octave

Scale Tune C-B: -64–+63

Scale Tuning is a parameter that makes fine adjustments to the pitch of each note in the octave. These settings are for one octave of notes, and will simultaneously adjust the pitch of that note in all octaves. By using Scale Tuning, you can perform using a variety of temperaments other than equal temperament. Here we will give three settings as examples.

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 default setting of the SC-880's Scale Tune function is Equal Temperament.

Just Intonation (tonic 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 become ambiguous if you transpose. Here is an example of the settings for a tonic of C.

Arabian-Style Tuning

A variety of ethnic tunings can be achieved by using the Scale Tuning function. Here are settings for a tuning representative of Arabian-style scales.

Example settings (values are in units of cents)

Note name	Equal temperament	Just intonation (tonic of C)	Arabian-style scale
C	0	0	-6
C#	0	-8	+45
D	0	+4	-2
D#	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
A#	0	+14	-10
B	0	-12	-49

■ Tone Parameters for Creating Sounds

On the SC-880, you can modify the values of a variety of parameters in order to create the sound most suitable for your playing. A **parameter** is something that affects the sound. The process of modifying parameter values is called **editing**. Sound parameters affect the volume, timbre and pitch of the sound.

You can set the following parameters.

Vibrato: Rate, Depth, Delay
Filter: Cutoff Frequency, Resonance
Envelope: Attack Time, Decay Time, Release Time

The "Part Tone Modify" and "USER TONE" pages contain the following parameters.

Vibrato Rate
Vibrato Depth
Vibrato Delay
Cutoff
Reso
Attack
Decay
Release

* *After editing the parameters of the "USER TONE" page, the edited parameters will not be saved even if you save the patch or performance. After editing parameters in the "USER TONE" page, you must save them as a User Tone. (p. 32)*

* *User Patches and User Performances contain only the parameters of the "Part Tone Modify" page.*
If you wish to create a Patch or Performance which contains a User Tone, you should first edit the "USER TONE" parameters, and save the resulting Tone as a User Tone. Then assign the User Tone to a Part, and save the User Patch or User Performance.

* *A USER TONE whose parameter settings have been modified will be indicated by an asterisk (*) after the tone number.*

■ Parameter Functions

The values of the "Part Tone Modify" parameters are set for each part. In other words, parameter values belong to parts, and not to sounds (Instruments). For example, if you set Vibrato Rate to +20 and then select a different sound for that part, the Vibrato Rate of +20 will apply to the newly selected sound (not the initial value of ±0).

Parameter values that you set in "Part Tone Modify" are stored in the user patch or user performance, and not in the user tone.

Parameter values that you set in "USER TONE" are set for the tone itself.

The way in which the tone will actually sound is determined by the sum of the "Part Tone Modify" parameter value and the "USER TONE" parameter value. For example, if the "Part Tone Modify" parameter "Vibrato Rate" is set to +20, and the "USER TONE" parameter "Vibrato Rate" is set to -5, the "Vibrato Rate" of the actual sound will be 20-5=+15.

MIDI messages can be used only to adjust the "Part Tone Modify" parameters; "USER TONE" values cannot be modified using MIDI messages.
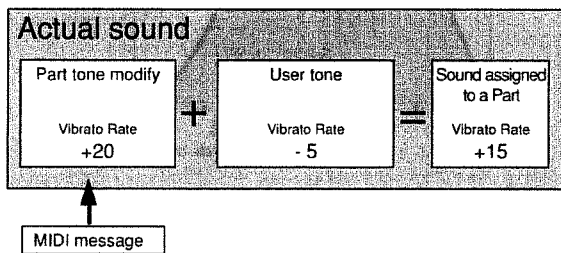
● Modulating the Sound (Vibrato)

Vibrato is created by modulating the pitch. Applying vibrato makes the sound more expressive.
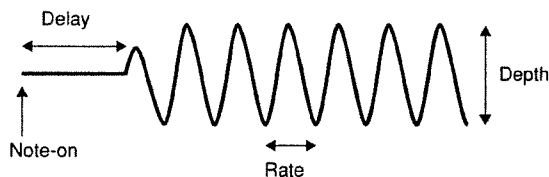
Setting the Speed of Pitch Modulation

Vibrato Rate: -64~+63 [INFO]

This parameter adjusts the speed (frequency) of the pitch modulation. Positive (+) settings make the pitch modulation faster, and negative (-) settings make it slower.

Setting the Depth of Pitch Modulation

Vibrato Depth: -64~+63 [INFO]

This parameter adjusts the depth of the pitch modulation. Positive (+) settings make the pitch modulation deeper, and negative (-) settings make it shallower.

Setting the Time Until Vibrato Is Applied

Vibrato Delay: -64~+63 [INFO]

This parameter adjusts the time required for the vibrato effect to begin. Positive (+) settings increase the time before vibrato will begin, and negative settings shorten the time.

● Adjusting the Tonal Character (Filter)

By modifying the filter settings, you can control the timbre (tone) of the sound. The type of filters in the SC-880 are called Low Pass Filters, and allow only frequencies lower than a specified frequency to pass. This frequency is called the Cutoff Frequency. By modifying the setting of the Cutoff Frequency you can make the sound brighter or darker. The Cutoff Frequency can change over time, controlled by the "envelope". By adjusting the filter and envelope settings, you can create sounds that have movement and expression.
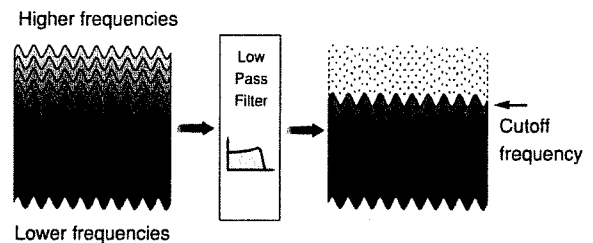
Adjusting the Brightness

Cutoff: -64~+63 (Cutoff Frequency) [INFO]

Positive settings of Cutoff will raise the cutoff frequency. Negative settings will lower the cutoff frequency. As you set this value higher in the positive direction, more overtones will be allowed to pass, and the sound will become harder (brighter). The further this value is set in the negative direction, the fewer overtones will be allowed to pass, and the sound will become softer (darker).

* For some tones, positive (+) settings of Cutoff will cause no noticeable change in the sound.

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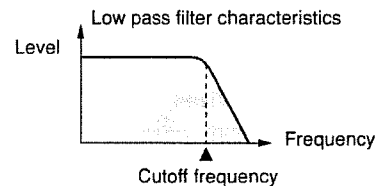
Giving the Sound a Distinctive Character

Reso: -64–+63 (Resonance) ┌─米─┐

When the Reso value is increased, the overtones in the vicinity of the cutoff frequency will be emphasized, creating a sound with a strong character.

* For some tones, negative (-) settings of Reso will cause no noticeable change in the sound.
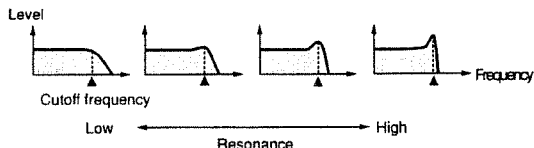
● Modifying the Changes in Volume (Envelope)

The volume of an instrument changes over time, from the moment the note begins to sound, until the time it disappears. This change can be indicated on a graph as shown in the following diagram. This shape is unique to each instrument, and is an important factor in determining how we distinguish the sounds we hear. This shape is called the "envelope." The envelopes of musical instrument sounds can change depending on how the instrument is played. For example, if a trumpet is played abruptly and powerfully, the attack will be quick and the sound will be sharp. But if a trumpet is played lightly and softly, the attack will be mellower. In order to adjust the attack of a sound, we can modify the Attack Time of the envelope. By modifying the values of the envelope we can simulate the characteristics of many different instruments.

The envelope shape that we create in this way will also affect the way in which the cutoff frequency changes. If the cutoff frequency had been lowered, it will rise as the envelope rises, and will fall as the envelope falls.
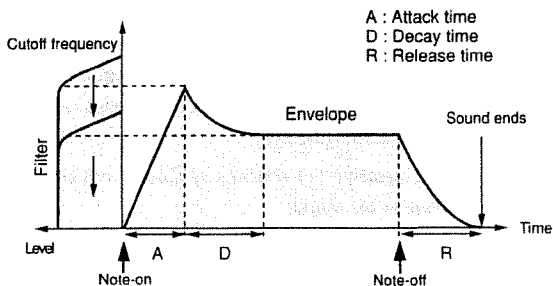
Adjusting the Attack Time

Attack: -64–+63 (Attack Time) ┌─米─┐

This parameter adjusts the sharpness of the beginning of the sound.

Adjusting the Time Over which the Steady-State Volume is Reached

Decay : -64–+63 (Decay Time) ┌─米─┐

This parameter adjusts the time over which the sound will fall from the highest point of the attack down to the sustain level (Fig.1).

* Some sounds have a sustain level of 0 (Fig.2). Piano and guitar sounds are in this category.

Adjusting the Time Over which the Sound Disappears

Release : -64–+63 (Release Time) ┌─米─┐

This parameter adjusts the time over which the sound will decay after the note is released until it is no longer heard. The cutoff frequency will also fall according to this.

* For some sounds, modifying the various Time settings of the envelope will cause no noticeable change in the sound.

Fig.1
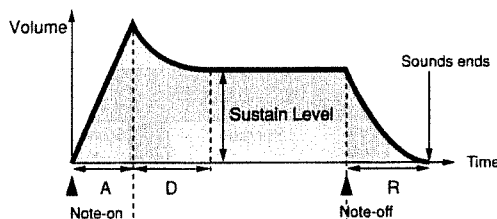
Fig.2
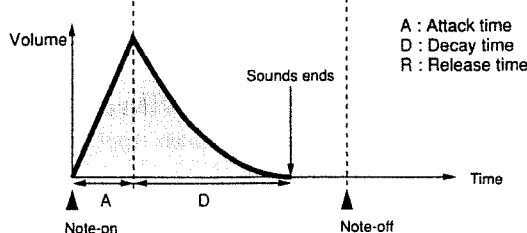
■ Applying Real-time Changes to the Sound

When a MIDI keyboard, etc., is connected to the SC-880, you can use the modulation lever, pitch bend lever, and after-touch functions, etc., of the MIDI keyboard to modify the sound in real time.

Tone Edit mode contains pages with the following menu names.

    Modulation
    Bender
    Channel After
    Poly After
    CC1
    CC2

Example

Here, we will show how you can use the modulation lever of a MIDI keyboard to modify the sound in real time.

1. Press [PATCH]-[TONE]-[EDIT] (the indicators light).
You will enter Tone Edit mode.

2. Use CURSOR [▲] to move the cursor to the menu name.

3. Select "Modulation," by rotating the VALUE dial.

4. Use CURSOR [▲] [▼] [◄] [►] to move the cursor to "LFO 1 Pitch."

At the factory settings this is set to 10.

```
PART ロロ   PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
    ロÜ               Ö     Ö
 ◄        Modulation    ▭▬▭    ►
              LFO 1
   Rate:   ± 0 │ Pitch:    10
   TVF:      0 │ TVA:       0
    1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
```

5. Rotate the VALUE dial to set the value to 0.

6. Use CURSOR [▲] [▼] [◄] [►] to move the cursor to "LFO 1 TVA."

7. Rotate the VALUE dial to set the value to 60.

8. While playing the keyboard, use the modulation lever to modify the sound.

Tremolo (cyclic modulation of volume) will be applied to the tone.

● Modulation

When you move the modulation lever or modulation wheel of a MIDI keyboard, modulation messages are transmitted, modifying the sound. Parameters in the "Modulation" page specify how the sound will change when this message is received. At the factory settings, the "LFO 1 Pitch" value is set to 10, so that moving the modulation lever or modulation wheel will apply vibrato to the sound.

● Bender

When you move the pitch bend lever or pitch wheel of a MIDI keyboard, pitch bend messages are transmitted, modifying the sound. Parameters in the "Bender" page specify how the sound will change when this message is received. At the factory settings, the "Range" is set to +2, so that moving the pitch bend lever will change the pitch.

● Channel After (Channel Aftertouch)

On some MIDI keyboards, pressing down on the key after a note is played will cause aftertouch messages to be transmitted. There are two types of aftertouch; channel pressure and polyphonic key pressure. In the "Channel After" page you can make settings for channel pressure. When these messages are received, the sound can be modified in various ways. The parameters of the "Channel After" page specify how the sound will change when channel pressure messages are received. At the factory settings, the "Channel After" parameter is set so that these messages will produce no effect.

* Check whether your MIDI keyboard is able to transmit aftertouch (channel pressure) messages.

● Poly After

On some MIDI keyboards, pressing down on the key after a note is played will cause aftertouch messages to be transmitted. There are two types of aftertouch; channel pressure and polyphonic key pressure. In the "Poly After" page you can make settings for polyphonic key pressure. When these messages are received, the sound can be modified in various ways. The parameters of the "Poly After" page specify how the sound will change when polyphonic key pressure messages are received. At the factory settings, the "Poly After" parameter is set so that these messages will produce no effect.

* Check whether your MIDI keyboard is able to transmit aftertouch (polyphonic key pressure) messages.

● CC1, CC2

Some MIDI keyboards allow controller numbers to be assigned to the sliders. When these sliders are moved, messages of the specified controller number are transmitted, causing the sound to be modified. The parameters of the "CC1" and "CC2" pages specify how the sound will be affected by the control change messages of the numbers you select. You can set "CC1 Number" and "CC2 Number" (p. 25) to specify the control change numbers assigned to "CC1" and "CC2."

● Parameters That Modify the Sound

The "Modulation," "Bender," "Channel After," "Poly After," "CC1" and "CC2" pages contain the following parameters.

    Range
    Cutoff
    Amplitude
    LFO 1 Rate
    LFO 1 Pitch
    LFO 1 TVF
    LFO 1 TVA
    LFO 2 Rate
    LFO 2 Pitch
    LFO 2 TVF
    LFO 2 TVA

* When these settings are at 0, there will be no effect.

Range: -24-+24

Specifies the maximum pitch change that will occur when the corresponding message is received. A setting of 12 allows 1 octave of change, and a setting of 24 allows 2 octaves of change. With a setting of 0, there will be no pitch change.

* *For some sounds, the pitch may not rise as high as specified by the Range setting.*

* *The "Range" setting for "Bender" can be set only in the range of 0–+24.*

Cutoff: -64-+63 (Cutoff frequency)

Specifies how the cutoff frequency will change when the corresponding message is received. Higher values will cause the cutoff frequency to rise. Positive (+) settings allow the sound to be made brighter, and negative (-) settings allow the sound to be made more mellow.

Amplitude: -64-+63

Specifies the way in which the sound will change when the corresponding message is received. Higher values allow a greater increase in volume.

LFO 1 Rate: -64-+63
LFO 2 Rate: -64-+63

These parameters specify the way in which the LFO frequency will change when the corresponding message is received, adjusting the speed at which the sound is modulated or varied. Higher values allow the modulation or variation to be speeded up.

LFO 1 Pitch: 0-127
LFO 2 Pitch: 0-127

These parameters specify the way in which the depth of the vibrato effect (cyclic modulation of pitch) will change when the corresponding message is received. Higher values allow the modulation effect to be increased.

LFO 1 TVF: 0-127
LFO 2 TVF: 0-127

These parameters specify the way in which the depth of the growl effect (cyclic modulation of tone) will change when the corresponding message is received. Higher values allow the growl effect to be increased.

LFO 1 TVA: 0-127
LFO 2 TVA: 0-127

These parameters specify the way in which the depth of the tremolo effect (cyclic modulation of volume) will change when the corresponding message is received. Higher values allow the tremolo effect to be increased.

Creating and Saving a Sound (USER TONE)

A tone that you edited in the "USER TONE" pages can be saved in internal memory.
A tone that has been saved in this way is called a User Tone.
A total of 256 user tones can be saved: tones 1–128 of variation number 64, and tones 1–128 of variation number 65.
"USER TONE" parameter values and the tone type will be saved as a User Tone.

1. Edit the tone.

2. Press [WRITE] (the indicator lights).

3. Use CURSOR [▲] to move the cursor to the menu name.

4. Select "USER TONE Write," by rotating the VALUE dial.

Variation number
Tone number
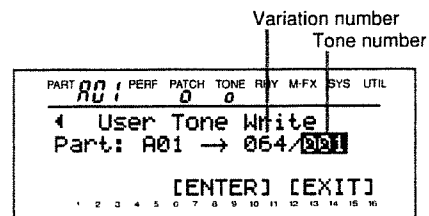
5. Use CURSOR [▼] to move the cursor to the variation number.
Select the variation number of the user tone that you wish to save.

6. Rotate the VALUE dial to adjust the variation number.
Select either variation number 64 or 65 as the variation number at which the user tone will be saved.

7. Use CURSOR [►] to move the cursor to the tone number.

8. Rotate the VALUE dial to adjust the tone number.
Select the tone number 1–128 in which the tone will be saved.

9. Press [ENTER].
You will be asked to confirm that you wish to save the user tone. If you decide not to save, press [EXIT].

10. Press [ENTER] to save the user tone.

* *The same contents are saved in Tone Set [3] and Tone Set [2].*

So that you can determine the tone set of the user tone that was saved, a symbol will be displayed before the user tone name, as shown below.
If the user tone was saved in Tone Set [3], the symbol will not be shown.

Tone set 1   Tone set 2
└▯Piano 1   └�Piano 1
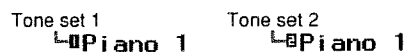
Rhythm Mode

In Rhythm mode you can select parts that have been specified as Rhythm parts, select a rhythm set for these parts, and edit rhythm sets.

On the SC-880, part A and part B can each use two rhythm sets, meaning that a total of four rhythm sets can be used simultaneously.

* *At the factory settings and for the preset performances, the rhythm part is set to part A10.*

■ Specifying the Rhythm Parts

A Rhythm Part has assigned to it a collection of various percussive instrument sounds, known as a "Rhythm Set." Unlike a normal part, a Rhythm Part sounds a different instrument for each note number. Since a Rhythm Part needs to simultaneously produce a wide variety of sounds such as bass drum, snare, tom and cymbal, this is very convenient. A collection of such sounds each assigned to their own note number is called a Rhythm Set. Each sound within a Rhythm Set is called a Rhythm tone. (Rhythm Set list; p. 138–150) In order to assign a rhythm set to a part, the part must first be set as a Rhythm Part.

1. Press [RHYTHM] (the indicator lights).
You will enter Rhythm mode.

2. Press [INFO] (the indicator lights).
The rhythm part setting page will appear.
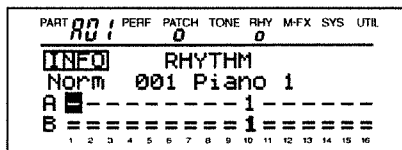
3. Use PART [◄] [►] to select the part whose settings you wish to modify.

4. Rotate the VALUE dial to select the rhythm part.
For Part Group A, you can select either -, 1, or 2.

    -: normal part
    1: rhythm part   Rhythm1
    2: rhythm part   Rhythm2

For Part Group A, you can select either =, 1, or 2.

    =: normal part
    1: rhythm part   Rhythm1
    2: rhythm part   Rhythm2

* *The Rhythm part setting can also be changed by the Part Mode parameter of Tone Edit mode. (p. 23–32)*

■ Selecting a Rhythm Set

The SC-880 contains 42 different rhythm sets.

1. Press [RHYTHM] (the indicator lights).
In Rhythm mode, the display will show the rhythm module number, tone set number, rhythm set number, and rhythm set name.
A rhythm set is selected by specifying the tone set number and the rhythm set number.
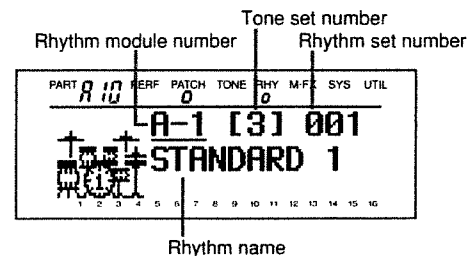
2. Use CURSOR [◄] [►] to move the cursor to the rhythm set number.

3. Rotate the VALUE dial to select the rhythm set.
If no rhythm part has been specified, the following display will appear. Set one of the parts to be the rhythm part. (p. 27)
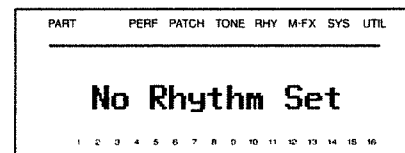
* *A rhythm set whose parameter settings have been modified will be indicated by an asterisk (✳) after the rhythm set number.*

● Selecting the Tone Set

The rhythm sets of the SC-880 are organized into the following three tone sets.

    Tone Set 1: The same sounds as the SC-55/55Mk2.
    Tone Set 2: The same sounds as the SC-88.
    Tone Set 3: The original tone set of the SC-880.

About Selecting a Rhythm Set

Tone set [1] contains 10 types of rhythm sets, tone set [2] contains 14 types, and tone set [3] contains 25 types. If a rhythm set of the same number does not exist when the tone set is switched, the closest rhythm set, of the next lowest number will be selected.

EXAMPLE

When tone set [3] 029 TR-606 is selected and you switch to tone set [2] or [1], the rhythm set will be selected as follows.

    tone set [3] 029 TR-606
       ▼
    tone set [2] 027 DANCE
       ▼
    tone set [1] 026 TR-808

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● Selecting the Rhythm Module

The rhythm module number will be A-1 or A-2 for "Part group A" rhythm parts Rhythm 1 and Rhythm 2 respectively, and will be B-1 or B-2 for "Part group B" rhythm parts Rhythm 1 and Rhythm 2 respectively.

For example, if the rhythm parts have been set as follows, the rhythm module numbers of parts A10 and parts A12 will be the same.

If you switch the rhythm set of rhythm module A-1 from Standard 1 to TR-808, the rhythm set of parts A10 and A12 will also change to TR-808.

When you press PART [◄] [►], the part of the same rhythm module number will be selected.

Part name	Part Mode	Name of Rhythm set	rhythm module number
Part A10	Rhythm 1	STANDARD 1	A-1
Part A11	Rhythm 2	JAZZ	A-2
Part A12	Rhythm 1	STANDARD 1	A-1
Part B10	Rhythm 1	ETHNIC	B-1

■ Creating an Original Rhythm Set (Rhythm Edit)

On the SC-880, you can create your own original rhythm set by assigning rhythm tones from any of the 42 rhythm sets to each note. Use the "Tone Set," "Src Set" and "Src Key" parameters to specify the desired rhythm tone.
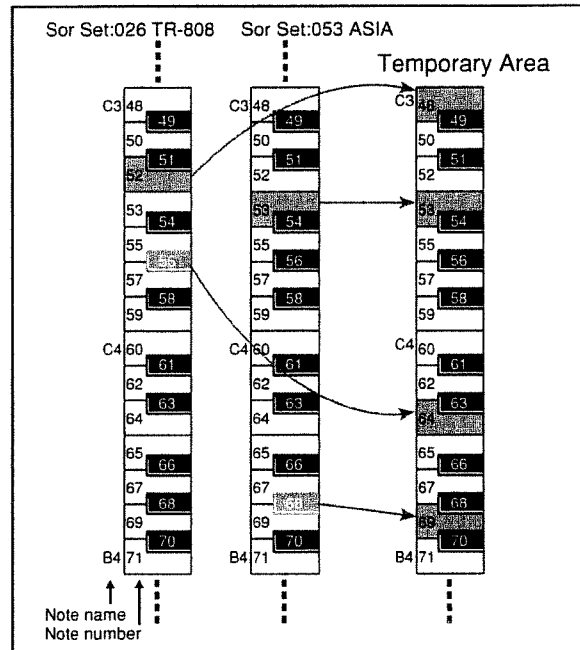
The SC-880 also lets you modify various parameters for each rhythm tone, to create the perfect sound for your needs. For each instrument (Rhythm tone) of the currently selected Rhythm Set, you can modify the values for the following parameters. These parameter values are set independently

for each Rhythm tone assigned to a note number:
Volume, Pan (stereo position), Pitch, Reverb Send Level, Chorus Send Level, Delay Send Level, Assign Group.
Use Rhythm Edit mode to create your own original rhythm set.
Rhythm Edit mode contains the "Rhythm Name" and "Rhythm Key" pages.

● Assigning a Name to the Rhythm Set

* *The rhythm set that you named will be lost unless you save it as a User Rhythm Set.*

1. Press [RHYTHM]-[EDIT] (the indicators light).

2. Use CURSOR [▲] to move the cursor to the menu name.

3. Select "Rhythm Name," by rotating the VALUE dial.
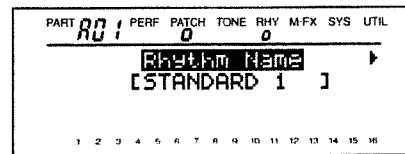
4. Press CURSOR [▼] to move the cursor to the rhythm name.

5. Use CURSOR [◄] [►] to move the cursor to the character that you wish to change.

6. Rotate the VALUE dial to select the desired character.
The following characters can be selected:
A–Z, a–z, 0–9, &#!?.,:;""*+-/<=>()[]{}^_|$%@¥'-><-

7. Repeat steps 5–6 to input the name.
When you finish inputting the name, press [WRITE] to save the data as a User Rhythm set (p. 36). If you do not save the settings as a User rhythm set, the name you input will be lost

● Editing a Rhythm Tone

On the SC-880, you edit a rhythm set by assigning a rhythm tone to each note, and modifying the value of the parameters.
In the "Rhythm Key" page, the name of the note being edited will be displayed below the menu name.
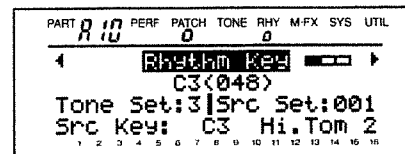
When creating your own original rhythm set, any desired rhythm tone from any rhythm set can be assigned to each note.

* *Overall settings for the entire rhythm set are made in Tone Edit mode.*

"Rhythm Key" settings occupy two pages, and the following parameters can be set.

Tone Set
Src Set
Src Key
Level
Pan
Reverb
Chorus
Delay
Pitch
Assign Group

1. Press [RHYTHM]-[EDIT] (the indicators light).
You will enter Rhythm Edit mode.

2. Use CURSOR [▲] to move the cursor to the menu name.

3. Select "Rhythm Key," by rotating the VALUE dial.
"Rhythm Key" settings occupy three pages. Here we will select the first page.

4. Use CURSOR [▼] to move the cursor to the note name.

Note name (Note number)

```
PART ค ก ı P RF PATCH TONE RHY M-FX SYS UTL
     ค ก ı        ก        ก
◄            Rhythm Key  ■ᴄ⊡  ►
                  C3(48)
Tone Set:3 Src Set:001
Src Key:   C3  Hi.Tom 2
  1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
```
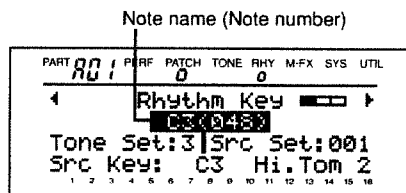
Select the note number that you wish to edit.
A note number in the range of 0–127 can be selected.
For this example, select "C3(48)."

5. Use CURSOR [▲] [▼] [◄] [►] to move the cursor to the parameter.
Use "Tone Set," "Src Set," and "Src Key" to select the rhythm tone that will be assigned to the note.

6. Rotate the VALUE dial to adjust the value.
For this example, repeat steps 5–6 to set "Tone Set: 3," "Src Set: 012" and "Src Key: 50." This will assign the "TR-808 High Tom" from the TECHNO set of Tone Set: 3 to the "C3 (48)" note of the currently selected rhythm set. Next, try editing the sound of the rhythm tone that you just assigned.

7. Use CURSOR [▲] [▼] [◄] [►] to move the cursor to the parameter.
Edit the "Level," "Pan," "Reverb," "Chorus," "Delay," "Pitch," and "Assign Group" parameters as desired.

8. Rotate the VALUE dial to adjust the value.

9. Repeat steps 4–8 to create your own original rhythm set.

Tone Set: 1–3

Selects the tone set of the rhythm tone that you wish to edit.

Tone Set 1: The same sounds as the SC-55/55Mk2.
Tone Set 2: The same sounds as the SC-88.
Tone Set 3: The original tone set of the SC-880.

Src Set: 001–128

Selects the rhythm set of the rhythm tone that you wish to edit.
For the available rhythm sets, refer to the rhythm set list. (p. 138–150)

Src Key: C- –G9

Selects the note name of the rhythm tone that you wish to edit.
For assigning a rhythm tone to each note, refer to p. 138–150.

Level: 0–127

Specifies the volume of the rhythm tone. Higher values result in a louder sound.

Pan: Rnd, L63–0–R63

Specifies the stereo location at which the rhythm tone will play back.
To place the sound in the center, set this value to 0. As the L-number increases the sound will move further to the left, and as the R-number increases the sound will move further to the right. With a setting of "Rnd" (random), each note will be placed at an unpredictable location.

Reverb: 0–127

Specifies the depth of reverb that will be applied to the rhythm tone. As the value is decreased, the reverb will become shallower. As the value is increased, the reverb will become deeper.

Chorus: 0–127

Specifies the depth of chorus that will be applied to the rhythm tone.
As the value is decreased, the chorus will become shallower. As the value is increased, the chorus will become deeper.

Delay: 0–127

Specifies the depth of delay that will be applied to the rhythm tone.
As the value is decreased, the delay will become shallower. As the value is increased, the delay will become deeper.

About the Chorus and Delay Applied to the Rhythm Tone

In the case of a Rhythm tone, it is not possible to simultaneously use both chorus and delay. When you set the Chorus value, the Delay field will be displayed as —, and only chorus will be applied. When you set the Delay value, the Chorus field will be displayed as —, and only delay will be applied. In other words, either chorus or delay will be applied, whichever was set later.
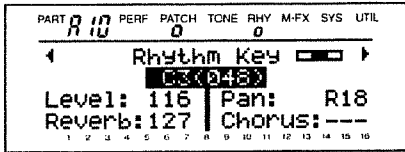
About the reverb/chorus/delay/equalizer that is applied to a rhythm set

For the above mentioned "Reverb," "Chorus" and "Delay," the parameters are the send levels which can be set individually for each rhythm tone. The amount of effect that is actually applied to each rhythm tone will be determined by the send level for each rhythm tone, the send level for each part, and each system effect level setting, as shown in the following diagram.
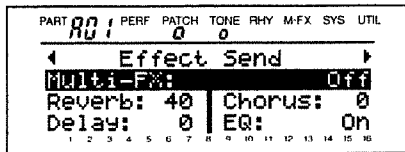
Pitch: 0–127

Specifies the pitch of the rhythm tone. As the value increases the pitch will rise. As the value decreases the pitch will fall.

Assign Group: Non/1–127

Each instrument can be given a number, and instruments with the identical number are treated as an Assign Group. No two instruments of the same Assign Group will sound together. If while one instrument is sounding, a MIDI message is received to play another instrument in the same Assign Group, the first instrument will be turned off first. This is a useful way to prevent two instruments from sounding simultaneously that would not normally do so. For example, since it is obviously impossible for a hi-hat to simultaneously produce both an open hi-hat sound and a closed hi-hat sound, these two sounds could be set to the same Assign Group (the same number) so that they would not sound together.

Numbers from Non, 1 to 127 can be selected, but instruments for which Non is selected will not be turned off by other instruments. In other words, instruments with a setting of Non will not be treated as an Assign Group.

* *Be aware that if you select a different Rhythm Set, the parameter values will be initialized.*

■ Saving a Rhythm Set

A rhythm set that you edited can be saved as a User Rhythm.

Sixteen user rhythms can be saved in U01–U16.

1. Edit the rhythm set. (p. 34)

2. Press [WRITE] (the indicator lights).

3. Use CURSOR [▲] to move the cursor to the menu name.

4. Select "Rhythm Write," by rotating the VALUE dial.
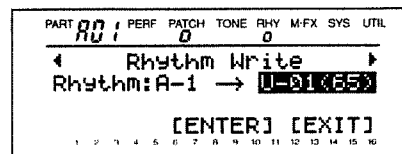
5. Use CURSOR [▼] to move the cursor to the user rhythm number.

6. Rotate the VALUE dial to select the user rhythm number at which you wish to save the data.

Sixteen user rhythm sets can be saved in U01–U16.

7. Press [EDIT].

You will be asked to confirm that you wish to save the rhythm set. If you decide not to save, press [EXIT].

8. Press [ENTER] to save the user rhythm.

Chapter 3. Performance Mode Settings

About Performance Mode

In Performance mode you can play "Performances," each of which consists of 32 parts (A01–A16 and B01–B16) plus effect settings (system effects, multi-effects).

The SC-880 provides 8 performances, which bring together high-quality tones suitable for particular genres of music and make full use of effects and other functionality. (Preset performance list p. 174–177)

In Performance mode you can make settings suitable for a given style of music or frequently-used instrumental ensembles, and save them as one of eight User Performances.

* *At the factory settings, preset performances are stored in P-0–P-8. When the SC-880 is shipped, the user performances contain the same data as the preset performances.*

Performance mode is structured as shown in the diagram.

The parameters and functions that can be set in Tone mode, Rhythm mode and Multi-effect mode are the same as in Performance mode. For details on Tone mode and Rhythm mode, refer to Chapter 2 (p. 20). Details on Multi-effect mode (M-FX) will be given in Chapter 5 (p. 49).
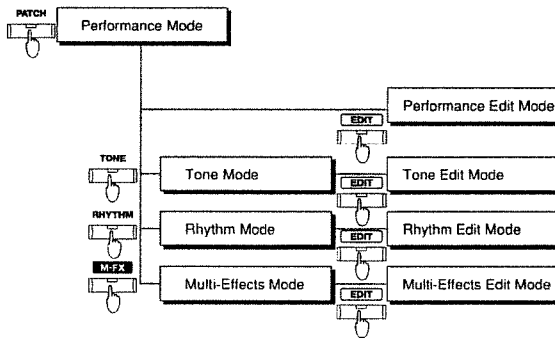
Each performance consists of the following structural elements.

Elements of a Performance
   Tones for parts A01–A16, B01–B16 and settings for each part
   Parameters common to all parts
   System effect settings
   Multi-effect settings
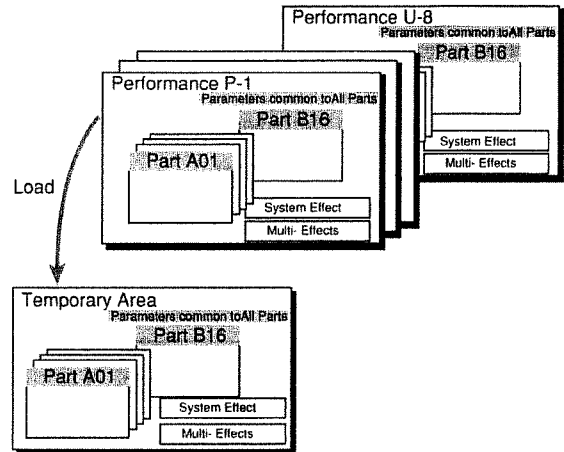
■ Selecting a Performance

On the SC-880 you can select from sixteen performances: preset performances P-1–P-8 and user performances U-1–U-8.

Preset performances are indicated by a "P" before the number, and user performances by a "U," as follows.
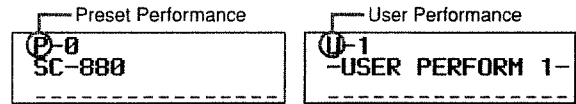
1. Press [PERFORM] (the indicator lights).

2. Rotate the VALUE dial to select the performance.

* *When the Performance number reaches "P-8," the next selected Performance will be "U-1."*
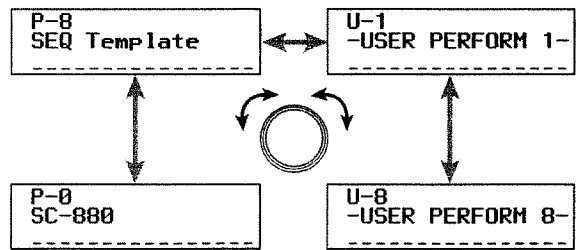
■ Saving a Performance

performances that you create can be saved as one of 8 user performances U-1–U-8.

1. Carry out the editing in Performance mode.

2. Press [WRITE] (the indicator lights).

3. Use CURSOR [▲] to move the cursor to the menu name.

4. Select "Performance Write," by rotating the VALUE dial.

```
PART ΠΠ / PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
     ΠU / Π
      Performance Write    ▶
         Temp  →  U-1

              [ENTER] [EXIT]
      1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
```

5. Use CURSOR [▼] to move the cursor to the user performance number.

6. Rotate the VALUE dial to select the user performance number at which you wish to save the data.

User performances can be saved in the 8 performances U-1–U-8.

7. Press [ENTER].

You will be asked to confirm that you wish to save the patch. If you decide not to save, press [EXIT].

```
PART ΠΠ / PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
     ΠU / Π
      Performance Write    ▶
         Temp  →  U-1

      Sure?  [ENTER] [EXIT]
      1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
```
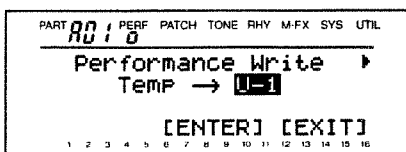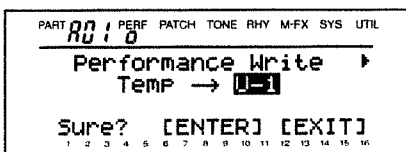
8. Press [ENTER] to Save the User Performance.

Creating a Performance (Performance Edit Mode)

To create a Performance you must assign a tone to each part of the Performance, make settings for each part, and make effect settings. In Performance Edit mode, you can make settings for all parts and for the effects (system effects and multi-effects).

To enter Performance Edit mode, press [EDIT] from Performance mode.

Parameters in Performance Edit mode are set using the following procedure.

1. Press [PERFORM] (the indicator lights).

2. Rotate the VALUE dial to select the performance that you wish to edit.

3. Press [EDIT] (the indicator lights).

4. Use CURSOR [▲] to move the cursor to the menu name.

5. Rotate the VALUE dial to select the page.

6. Use CURSOR [▲] [▼] [◄] [►] to select the parameter whose value you wish to change

7. Rotate the VALUE dial to adjust the value.

Performance Edit mode contains pages with the following menu names.

> Performance Name
> Master Control
> Reverb
> Chorus
> Delay
> Equalizer
> Multi-FX

The parameters of the "Master Control" pages are the same as in Patch mode. Refer to the explanations in Chapter 2 (p. 20).

* *Parameters for "Reverb," "Chorus," "Delay" and "Equalizer" are explained in Chapter 4 System Effect. For details on "Multi-FX," refer to Chapter 5 Multi-FX.*

* *Since your editing will affect the data in the temporary area, the modified contents will be lost when you change performances or switch to Patch mode. To keep your edits, you must save them into user memory. (p. 38)*

* *A Performance whose parameter settings have been modified will be indicated by an asterisk (*) before the Performance number.*

■ Naming a Performance

In the "Performance Name" page you can assign a name of up to 16 characters to a user Performance.

1. Edit the performance.

2. Press [EDIT] (the indicator lights).
Enter the performance edit mode.

3. Use CURSOR [▲] to move the cursor to the menu name.

4. Select "Performance Name," by rotating the VALUE dial.
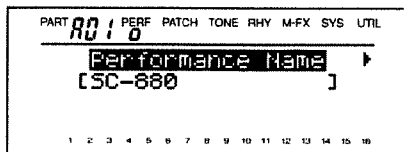
5. Press CURSOR [▼] to move the cursor to the patch name.

```
PART AU I  PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
        A 0
       ▛Performance Name▜  ►
       [SC-880          ]

     1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
```

6. Use CURSOR [◄] [►] to move the cursor to the character that you wish to change.

7. Rotate the VALUE dial to select the desired character.
The following characters can be selected:
A–Z, a–z, 0–9, &#!?.,:;'""+-/<=>()[]{}^_|$%@¥'-><-

8. Repeat steps 6–7 to input the name.

9. When you finish inputting the name, press [EXIT] to exit Performance Edit mode.
When you finish inputting the name, press [WRITE] to save the data as a User performance (p. 38). If you do not save the settings as a User performance, the name you input will be lost.

Tone Edit Mode

In Tone Edit mode you can edit the settings for each part and the tone or rhythm set that is assigned to each part.
Use PART [◄] [►] to select the part that you wish to set. The current part will be shown in the PART field of the display.

■ Parameter Settings

Use the following procedure to set the parameters of each part.

1. Press [PERFORM]-[TONE]-[EDIT] (the indicators light).
Enter the performance mode.

2. Use PART [◄] [►] to select the part for which you wish to make settings.

3. Use CURSOR [▲] to move the cursor to the menu name.

4. Rotate the VALUE dial to select the pages for which you wish to make settings.

5. Use CURSOR [▲] [▼] [◄] [►] to select the parameter that you wish to modify.

6. Rotate the VALUE dial to adjust the value.
Tone Edit mode contains the following pages. The parameters which can be set and their functions are the same as in Patch mode. For details on each parameter, refer to Chapter 2. In the procedural explanations for each parameter in Chapter 2, read [PATCH] as [PERFORM].

> Output (p. 23)
> Effect Send (p. 47)
> Rx MIDI (p. 25)
> Mode (p. 27)
> Keyboard Range (p. 27)
> Pitch (p. 28)
> Scale Tune (p. 28)
> Part Tone Modify (p. 28)
> USER TONE (p. 28)
> Modulation (p. 31)
> Bender (p. 31)
> Channel After (p. 31)
> Poly After (p. 31)
> CC1 (p. 31)
> CC2 (p. 31)

39

How the SC-880's Effects Are Structured

The SC-880 has two types of effects: System effects (p. 40) and Multi-effects (p. 49).

As system effects, you can use eight types of reverb to reverberate the sound, eight types of chorus to make the sound richer and more spacious, ten types of delay to create echo effects, and a two-band equalizer to modify the tonal character of the sound.

As multi-effects, you can use one of 64 different effects to distort or modulate the sound, or combine multiple effects together.

System effects and multi-effects differ not only by their effect type, but also in the processing path within the SC-880.

■ What Are System Effects?

The system effects reverb/chorus/delay process a portion of the sound of each part to create a new effect sound (reverberation, etc.), which is then added to the original sound.

The amount of sound that is sent to the effect from each part is adjusted by the Send Level. As this value is increased, more sound will be sent to the effect, which will cause the effect to be applied more deeply.

For the Equalizer system effect, you can specify whether or not the sound of each part will be passed through the effect; i.e., to switch the equalizer on/off for each part.

■ What Are Multi-Effects?

Multi-effects can be applied to a part to modify the sound itself, transforming it into a sound with a very different tonal character. The SC-880 provides 64 different power effects of various types.

As shown in the diagram, the effect structure lets you make settings for one multi-effect, and turn it on/off for each part. However, since only one type of multi-effect can be used at a time, all parts for which the multi-effect is turned on will be processed by the same multi-effect. In the case of a part for which the multi-effect has been turned on, it will not be possible to adjust the individual system effect send levels for that part. The signal from such parts will be sent to the system effects as adjusted by the send level for all parts for which the multi-effect is switched on (p. 49).

About System Mode settings

The effects that are available for the system effect and the multi-effect will depend on the System Mode setting (p. 101).

In Single Module Mode (Single), you can use one effect each for Reverb, Chorus, Delay, and Equalizer.

In Double Module Mode (Double), equalizer and delay cannot be used, but you can use two effects each for Reverb and Chorus. This is useful when you wish to apply different types of effects or different effects settings to several parts. Also, multi-effects can be used only for Part Group A. This is very convenient when you wish to apply a unique effect to a solo part, etc.

System mode provides a parameter that lets you switch the effects (system effect, multi-effect) on/off (p. 92). If this parameter is switched off, no effects will be applied to the tones at all, which can be convenient when you are editing or auditioning tones.

* *For details on Single Module mode and Double Module mode, refer to p. 101.*

* *The explanations in this chapter assume that you are in Patch mode. If you are making these settings from Performance mode, simply substitute [PERFORM] for [PATCH].*

Single Module Mode

Double Module Mode

* You can apply the Multi-effects to the Part in Group B, if the Receive Channel is set to A01 - A16.
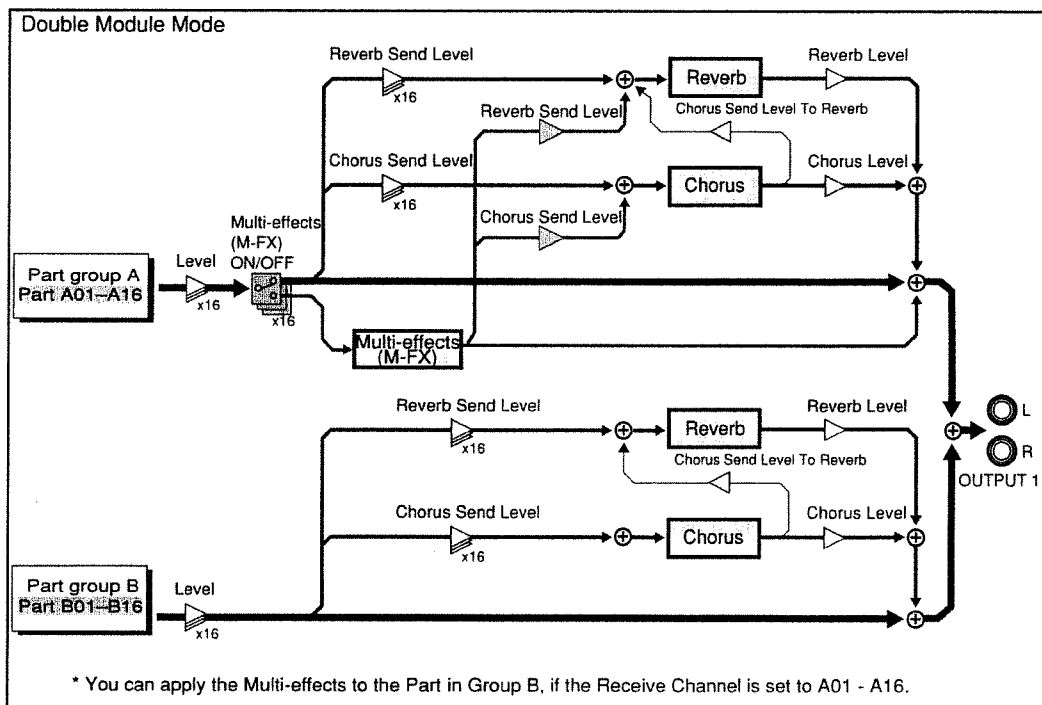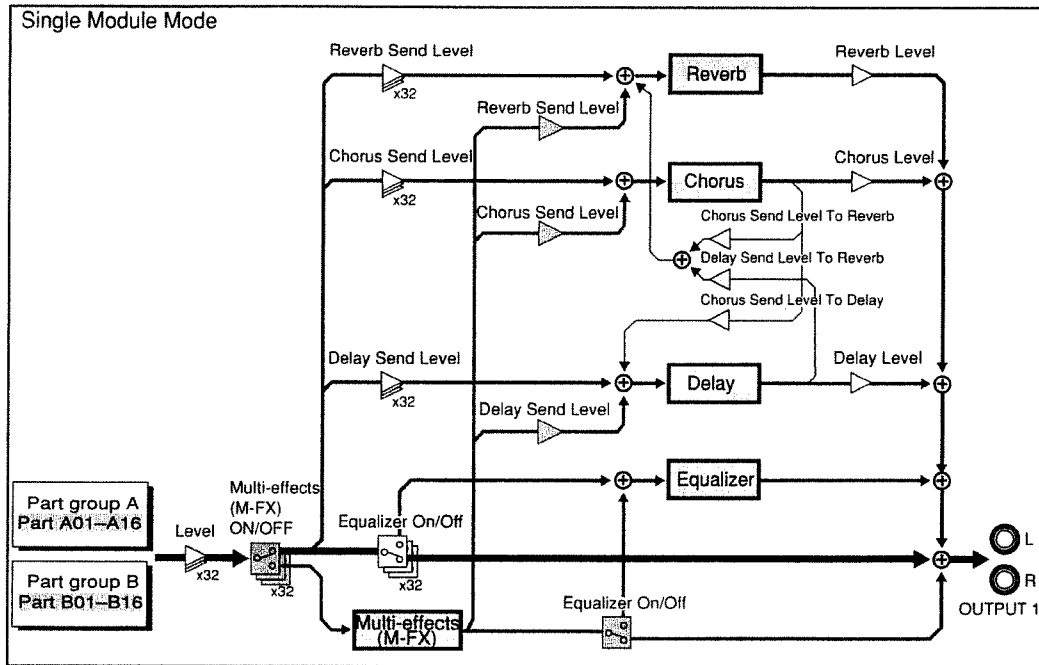
* *Single Module mode is the Normal mode in which you can use 32 Parts, and Double Module mode is the mode in which you can use the SC-880 as two sound modules (Part Groups A and B). For details refer to p. 101.*

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Applying Reverberation to the Sound (Reverb)

Reverb is an effect that adds reverberation to a sound, much like what you would hear in a concert hall.

Reverb settings can be made in Patch Edit mode or in Performance Edit mode. The amount of reverb that is applied to the sound of each part is determined by the Reverb Level (p. 42) and by the Reverb Send Level (p. 47) that is set in Tone Edit mode. Send Level specifies the amount of sound that is sent from each part to the reverb.

■ Reverb Settings and the Function of Each Parameter

Here you can make settings for the reverb which will be applied to the sound that is sent from each part.

Reverb settings consist of seven parameters, allowing you to create the desired character of reverb.

1. Press [PATCH]-[EDIT] (the indicators light).
Enter Patch Edit mode.

2. Use CURSOR [▲] to move the cursor to the menu name.

3. Select "Reverb," by rotating the VALUE dial.

```
PART RO ₁ PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
         O
◄         Reverb    ▭      ►
Type:              Hall 2
Level: 64|Character: 4
Pre-LPF:0|Time:      64
  1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16
```

```
PART RO ₁ PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
         O
◄         Reverb    ▭      ►
Delay Feedback:        0
Pre Delay Time:   0msec

  1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16
```
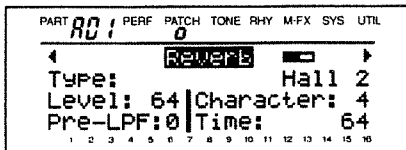
"Reverb" settings occupy two pages, and consist of seven parameters.

    Type
    Level
    Character
    Pre-LPF
    Time
    Delay Feedback
    Pre Delay Time

4. Use CURSOR [▲] [▼] [◄] [►] to select the parameter that you wish to modify.

5. Rotate the VALUE dial to modify the parameter value.

6. Press and hold the VOLUME knob to hear the result of the parameters that you modified.

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7. Repeat steps 4–6 to set the parameters.

* *If you wish to quit making settings, press [EXIT].*

● Type (Reverb Type)
You can choose from 8 types of reverb.

Room 1   Room 2   Room 3
These reverbs simulate the reverberation of a room. They provide a well-defined spacious reverberation.

Hall 1   Hall 2
These reverbs simulate the reverberation of a concert hall. They provide a deeper reverberation than the Room reverbs.

Plate
This simulates a plate reverb (a studio device using a metal plate).

Delay
This is a conventional delay that produces echo effects.

Panning Delay
This is a special delay in which the delayed sounds move left and right. It is effective when you are listening in stereo.
When you change the Reverb Type, the following parameter values will automatically change. This is so that the parameter values will have the settings most appropriate for the selected Reverb Type. You can select these parameters (p. 42, 43) and modify the values to adjust the effect to your taste.

● Level: 0–127 (Reverb Level)
Sets the amount of the reverberant sound. Higher values result in louder reverberation.

* *If the send level (Reverb Send Level p. 47) value is 0, no reverb will be applied to that part.*

● Character: 0–7 (Reverb Character)
This parameter selects only the type of reverb. 0–5 are reverb effects; and 6 and 7 are delay effects.

● Pre-LPF: 0–7 (Reverb Pre-LPF)
A low pass filter can be applied to the sound coming into the reverb to cut the high frequency range. Higher values will cut more of the high frequencies, resulting in a more mellow reverberation.

● Time: 0–127 (Reverb Time)
Sets the time over which the reverberation will continue. Higher values result in longer reverberation.

● Delay Feedback: 0–127 (Reverb Delay Feedback)
This parameter is used when the Reverb Charac. is set to 6 or 7, Reverb Type is set to Delay or Panning Delay. It sets the way in which delays repeat. Higher values result in more delay repeats.

● Pre Delay Time: 0–127 msec (Reverb Pre-Delay Time)

Sets the delay time until the reverberant sound is heard. Higher values result in a longer pre-delay time, simulating a larger reverberant space.

* *Reverb Pro-Delay Time cannot be used when Double Module Mode (p. 101) is selected.*

About Reverb Type

When you change the Reverb Type, the above-listed six reverb parameters (including Reverb Character) will be automatically adjusted to the optimal values. Rather than individually adjusting each reverb parameter, it is easier to first set the Reverb Type (listed in the MIDI implementation as [REVERB MACRO]; p. 192), and then modify only those parameters that you wish to modify. In particular when using MIDI exclusive messages, this method of making settings will minimize the amount of data.

Type	Room 1	Room 2	Room 3	Hall 1	Hall 2	Plate	Delay	PanDelay
Level	64	64	64	64	64	64	64	64
Character	0	1	2	3	4	5	6	7
Pre-LPF	3	4	0	4	0	0	0	0
Time	80	56	64	72	64	88	32	64
Delay Feedback	0	0	0	0	0	0	40	32
Pre Delay Time	0	0	0	0	0	0	0	0

Adding Breadth to the Sound (Chorus)

Chorus broadens the spatial image of the sound, adding depth and richness.

Chorus settings can be made in Patch Edit mode or in Performance Edit mode. The amount of chorus that is applied to the sound of each part is determined by the Chorus Level (p. 44) and by the Chorus Send Level (p. 47) that is set in Tone Edit mode. Send Level specifies the amount of sound that is sent from each part to the chorus.

■ Chorus Settings and the Function of Each Parameter

Here you can make settings for the chorus which will be applied to the sound that is sent from each part.

Chorus settings consist of nine parameters, allowing you to create the desired character of chorus.

1. Press [PATCH]-[EDIT] (the indicators light).
Enter Patch Edit mode.

2. Use CURSOR [▲] to move the cursor to the menu name.

3. Select "Chorus," by rotating the VALUE dial.

```
PART AU I  PERF PATCH TONE RHY  M FX  SYS  UTIL
               0
◄         Chorus      ■□       ►
Type:              Chorus 3
Level: 64 FeedBack:    8
Pre-LPF:0 Delay:      80
  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
```

```
PART AU I  PERF PATCH TONE RHY  M FX  SYS  UTIL
               0
◄         Chorus      □■       ►
Rate:       3 Depth:     19
Send to Reverb:          0
Send to Delay:           0
  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
```
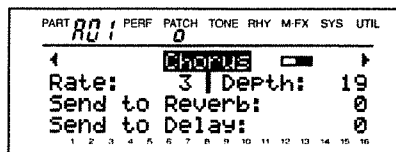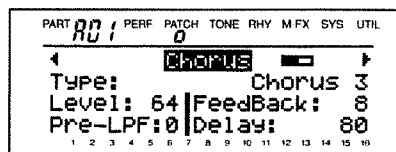
"Chorus" settings occupy two pages, and consist of nine parameters.

> Type
> Level
> Feedback
> Pre-LPF
> Delay
> Rate
> Depth
> Send to Reverb
> Send to Delay

4. Use CURSOR [▲] [▼] [◄] [►] to select the parameter that you wish to modify.

5. Rotate the VALUE dial to modify the parameter value.

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6. Press and hold the VOLUME knob to hear the result of the parameters that you modified.

7. Repeat steps 4–6 to set the parameters.

* *To quit making settings, press [EXIT].*

● Type (Chorus Type)

You can choose from 8 types of chorus.

Chorus 1   Chorus 2   Chorus 3   Chorus 4

These are conventional chorus effects that add spaciousness and depth to the sound.

Feedback Chorus

This is a chorus with a flanger-like effect and a soft sound.

Flanger

This is an effect sounding somewhat like a jet airplane taking off and landing.

Short Delay

This is a delay with a short delay time.

Short Delay Fb

This is a short delay with many repeats.

When you change the Chorus Type, the following parameter values will automatically change. This is so that the parameter values will have the settings most appropriate for the selected Chorus Type. You can select these parameters (p.51) and modify the values to adjust the effect to your taste.

● Level: 0–127 (Chorus Level)

Sets the amount of the chorus sound.
Higher values will cause the chorus sound to be louder.

* *If the send level (Chorus Send Level p. 47) value is 0, no chorus will be applied to that part.*

● Feedback: 0–127 (Chorus Feedback)

Sets the level at which the chorus sound is returned (fed back) into the chorus. By using feedback, a denser chorus sound can be created. Higher values result in a greater feedback level.

● Pre-LPF: 0–7 (Chorus Pre-LPF)

A low pass filter can be applied to the sound coming into the chorus to cut the high frequency range. Higher values will cut more of the high frequencies, resulting in a more mellow chorus sound.

● Delay: 0–127 (Chorus Delay)

Sets the delay time of the chorus effect. Higher values will cause greater deviation in pitch of the chorus sound.

● Rate: 0–127 (Chorus Rate)

Sets the speed (frequency) at which the chorus sound is modulated. Higher values result in faster modulation.

● Depth: 0–127 (Chorus Depth)

Sets the depth at which the chorus sound is modulated. Higher values result in deeper modulation.

● Send to Reverb: 0–127 (Chorus Send Level To Reverb)

Sets the amount of chorus sound that will be sent to the reverb. Higher values result in more sound being sent.

● Send to Delay: 0–127 (Chorus Send Level To Delay)

Sets the amount of chorus sound that will be sent to the delay. Higher values result in more sound being sent.

* *Chorus Send Level To Delay cannot be used when Double Module Mode (p. 101) is selected.*

About the Chorus Type

When you change the Chorus Type, the above-listed eight Chorus parameters (including Chorus Character) will be automatically adjusted to the optimal values. Rather than individually adjusting each Chorus parameter, it is easier to first set the Chorus Type (listed in the MIDI implementation as [CHORUS MACRO]; p. 192), and then modify only those parameters that you wish to modify. In particular, when using MIDI exclusive messages, this method of making settings will minimize the amount of data.

Type	Chorus 1	Chorus 2	Chorus 3	Chorus 4	FbChorus	Flanger	SDelay	SDelayFb
Level	64	64	64	64	64	64	64	64
Feedback	0	5	8	16	64	112	0	80
Pre-LPF	0	0	0	0	0	0	0	0
Delay	112	80	80	64	127	127	127	127
Rate	3	9	3	9	2	1	0	0
Depth	5	19	19	16	24	5	127	127
Send to Reverb	0	0	0	0	0	0	0	0
Send to Delay	0	0	0	0	0	0	0	0

Adding Echo to the Sound (Delay)

Delay creates echoes. It is also possible to give depth and breadth to a sound by adding a short delay to the original sound.

Delay settings can be made in Patch Edit mode or in Performance Edit mode. The amount of delay that is applied to the sound of each part is determined by the Delay Level (p. 45) and by the Delay Send Level (p. 47) that is set in Tone Edit mode. Send Level specifies the amount of sound that is sent from each part to the delay.

■ Delay Settings and the Function of Each Parameter

Here you can make settings for the delay which will be applied to the sound that is sent from each part.

Delay settings consist of eleven parameters, allowing you to create the desired character of delay.

1. Press [PATCH]-[EDIT] (the indicators light).
Enter Patch Edit mode.

2. Use CURSOR [▲] to move the cursor to the menu name.

3. Select "Delay," by rotating the VALUE dial.

```
PART AA I  PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
     AU I         0
◀          DELAY       ▭▭   ▶
Type:              Delay 1
Level: 64|FeedBack:+16
Pre-LPF:0|ToReverb:   0
   1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
```

```
PART AA I  PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
     AU I         0
◀          DELAY       ▭▭   ▶
Time Center:    340msec
Time Ratio Left:    4%
Time Ratio Right:   4%
   1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
```

```
PART AA I  PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
     AU I         0
◀          DELAY       ▭▭   ▶
Level Center:      127
Level Left:          0
Level Right:         0
   1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
```

"Delay" settings occupy three pages, and consist of eleven parameters.

    Type
    Level
    Feedback
    Pre-LPF
    ToReverb
    Time Center
    Time Ratio Left

Time Ratio Right
Level Center
Level Left
Level Right

4. Use CURSOR [▲] [▼] [◀] [►] to select the parameter that you wish to modify.

5. Rotate the VALUE dial to modify the parameter value.

6. Press and hold the VOLUME knob to hear the result of the parameters that you modified.

7. Repeat steps 4–6 to set the parameters.

* Press [EXIT] at any time if you change your mind, and decide you do not want to modify the setting.

* In Double Module mode (p. 101), delay cannot be used.

● Type (Delay Type)

You can choose from 10 types of delay.

Delay 1   Delay 2   Delay 3
These are conventional delays. Delay 1, Delay 2 and Delay 3 have progressively longer delay times.

Delay 4
This is a delay with a rather short delay time.

Panning Delay 1   Panning Delay 2   Panning Delay 3
The delay sound moves between left and right. This is effective when listening in stereo. Pan Delay 1, Pan Delay 2 and Pan Delay 3 have progressively longer delay times.

Panning Delay 4
This is a rather short delay with the delayed sound moving between left and right. It is effective when listening in stereo.

Delay to Reverb
Reverb is added to the delay sound which moves between left and right. It is effective when listening in stereo.

Panning Repeat
The delay sound moves between left and right, but the localization is different than the effects listed above. It is effective when listening in stereo.

When you change the Delay Type, the following parameter values will automatically change. This is so the parameter values will have the settings most appropriate for the selected Delay Type. You can select these parameters (p. 45, 46) and modify the values to adjust the effect to your taste.

● Level: 0–127 (Delay Level)

Sets the overall volume of the three delays (center, left, and right). Higher values result in a louder overall delay.

* If the send level (Delay Send Level; p. 47) value is 0, no delay will be applied to that part.

● FeedBack: -64-0-+63
(Delay Feedback)

This parameter affects the number of times the delay will repeat. With a value of 0, the delay will not repeat. With higher values there will be more repeats. With negative (-) values, the center delay will be fed back with inverted phase. Negative values are effective with short delay times.

● Pre-LPF: 0-7 (Delay Pre-LPF)

A low pass filter can be applied to the sound coming into the delay to cut the high frequency range. Higher values will cut more of the high frequencies, resulting in a more mellow delay sound.

● ToReverb: 0-127
(Delay Send Level To Reverb)

Sets the amount of delay sound that is sent to the reverb. Higher values result in more sound being sent.

● Time Center: 0.1 msec-1 sec
(Delay Time Center)

The delay effect of the SC-880 allows you to set three delay times; center, left and right (when listening in stereo). Delay Time Center sets the delay time of the delay located at the center.

● Time Ratio Left: 4%-500%
(Delay Time Ratio Left)

Sets the delay time of the delay located at the left as a percentage of the Delay Time Center. (up to a max. of 1.0 sec)

● Time Ratio Right: 4%-500%
(Delay Time Ratio Right)

Sets the delay time of the delay located at the right as a percentage of the Delay Time Center. (up to a max. of 1.0 sec)

● Level Center: 0-127
(Delay Level Center)

Sets the volume of the central delay. Higher values result in a louder center delay.

● Level Left: 0-127 (Delay Level Left)

Sets the volume of the left delay. Higher values result in a louder left delay.

● Level Right: 0-127
(Delay Level Right)

Sets the volume of the right delay. Higher values result in a louder right delay.

About the Delay Type

When you change the Delay Type, the above-listed ten Delay parameters (including Delay Character) will be automatically adjusted to the optimal values. Rather than individually adjusting each Delay parameter, it is easier to first set the Delay Type (listed in the MIDI implementation as [DELAY MACRO]; p. 192), and then modify only those parameters that you wish to modify. In particular, when using MIDI exclusive messages, this method of making settings will minimize the amount of data.

Type	Delay 1	Delay 2	Delay 3	Delay 4	Panning Delay 1	Panning Delay 2	Panning Delay 3	Panning Delay 4	Delay To Reverb	Panning Repeat
Level	64	64	64	64	64	64	64	64	64	64
Feedback	+16	+16	+8	+8	+10	+7	+9	+8	-3	-24
Pre-LPF	0	0	0	0	0	0	0	0	0	0
ToReverb	0	0	0	0	0	0	0	0	36	0
Time Center	340 m	550 m	1 sec	130 m	500 m	700 m	1 sec	260 m	700 m	750 m
Time Ratio Left	4%	4%	4%	4%	50%	50%	50%	50%	50%	88%
Time Ratio Right	4%	4%	4%	4%	100%	100%	100%	100%	100%	133%
Level Center	127	127	127	127	0	0	0	0	0	97
Level Left	0	0	0	0	125	125	120	120	114	127
Level Right	0	0	0	0	60	60	64	64	60	67

Setting the Send Level (Reverb/Chorus/Delay)

On the SC-880, you can adjust the Send Levels to specify the amount of system effect (Reverb, Chorus, Delay) that will be applied to the sound of each part. Send Levels can be set independently for each part, and the amount of system effect that actually results is determined by the Send Level value and the levels of each system effect (p. 42, 44, 45).

1. Press [PATCH]-[TONE]-[EDIT] (the indicators light).
Enter Tone Edit mode.

2. Use CURSOR [▲] to move the cursor to the menu name.

3. Use PART [◄] [►] to select the part whose settings you wish to modify.
The settings of the selected part will be shown in the upper left of the display.

4. Select "Effect Send," by rotating the VALUE dial.

```
PART AU 1  PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
              0     0
◄        Effect Send                        ►
Multi-FX:                       Off
Reverb:  40  | Chorus:           0
Delay:    0  | EQ:              On
  1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16
```
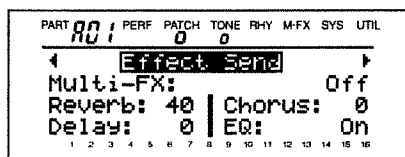
In the "Effect Send" page you can set the following parameters.

Multi-FX ⌐※¬

Specifies whether the sound of the part will be sent to the multi-effect (On) or not (Off). If this is turned On, the "Reverb," "Chorus," "Delay" and "EQ" settings of "Effect Send" will be ignored. If you wish to apply a system effect to a part for which Multi-FX is On, refer to p. 50.

Reverb (Reverb Send Level) ⌐※¬

The portion of the sound of the part sent to the reverb. Increasing this value will increase the amount sent to reverb, and the reverb will be applied more deeply. Decreasing this value will decrease the amount sent to the reverb, and the reverb will be applied less deeply.

Chorus (Chorus Send Level) ⌐※¬

The portion of the sound of the part sent to the chorus. Increasing this value will increase the amount sent to chorus, and the chorus will be applied more deeply. Decreasing this value will decrease the amount sent to the chorus, and the chorus will be applied less deeply.

Delay (Delay Send Level) ⌐※¬

The portion of the sound of the part sent to the delay. Increasing this value will increase the amount sent to delay, and the delay will be applied more deeply. Decreasing this value will decrease the amount sent to the delay, and the delay will be applied less deeply.

EQ ⌐※¬

Specifies whether the sound of the part will be sent through the equalizer (On) or not (Off).
If this is turned On, the sound of the part will be sent through the equalizer. If this is turned Off, the equalizer will not apply.

5. Use CURSOR [▲] [▼] [◄] [►] to select the parameter that you wish to modify.

6. Rotate the VALUE dial to adjust the value.

7. Repeat steps 3–6 to make settings for all parts.

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Modifying the Tonal Character (Equalizer)

The SC-880 has a two-band equalizer (high range, low range). An equalizer lets you boost or cut specified frequency ranges of a sound to adjust the tone. For each range, high and low, you can specify the frequency and the amount of boost or cut (gain).

For each part you can specify whether or not the equalizer will be applied.

■ Equalizer Settings and the Function of Each Parameter

Here you can make settings for the equalizer which will be applied to the sound that is sent from each part.

Equalizer settings consist of four parameters, allowing you to create the desired character of equalizer.

* In Double Module mode (p. 101), equalizer cannot be used.

1. Press [PATCH]-[EDIT] (the indicators light).
Enter Patch Edit mode.

2. Use CURSOR [▲] to move the cursor to the menu name.

3. Select "Equalizer," by rotating the VALUE dial.

```
PART A0  PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
     A0 1              0
 ◄         EQUALIZER            ►
 Low Fq:  200 High Fq:3k
 LowGain:± 0 HiGain:± 0

 1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
```
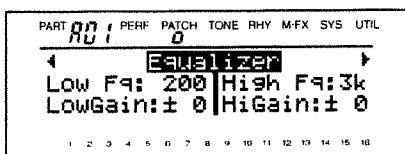
"Equalizer" settings consist of the following four parameters.

    Low Fq
    High Fq
    LowGan
    HiGain

4. Use CURSOR [▲] [▼] [◄] [►] to select the parameter that you wish to modify.

5. Rotate the VALUE dial to adjust the value.

6. Rotate the VALUE dial to modify the parameter value.

7. Repeat steps 4–6 to set the parameters.

* To quit making settings, press [EXIT].

● Low Fq (Equalizer Low Frequency) 200/400 (Hz)
● High Fq (Equalizer High Frequency) 3/6 k (Hz)

These parameters set the cutoff frequencies of the ranges boosted or cut by the equalizer.

● LowGain (Equalizer Low Gain) -12-0-+12 (dB)
● HiGain (Equalizer High Gain) -12-0-+12 (dB)

Specifies the amount of boost or cut (gain) for the high frequency range (high) and the low frequency range (low). Positive (+) settings will boost, and negative (-) settings will cut.

* With a Gain setting of 0, the equalizer will have no effect.

■ Turning the Equalizer On/Off for Each Part

On the SC-880 you can switch the equalizer on/off for each part.

1. Press [PATCH]-[TONE]-[EDIT] (the indicators light).
Tone Patch Edit mode.

2. Use CURSOR [▲] to move the cursor to the menu name.

3. Select "Effect Send," by rotating the VALUE dial.

4. Use PART [◄] [►] to select the part whose settings you wish to modify.
The settings of the selected part will be shown in the upper left of the display.

5. Use CURSOR [▲] [▼] [◄] [►] to move the cursor to "EQ."

6. Rotate the VALUE dial to turn the setting on/off. Rotate the VALUE dial toward the right to turn the setting on, or toward the left to turn the setting off.

7. Repeat steps 4–6 to turn the equalizer on/off for each part.

* To quit making settings, press [EXIT].

About Multi-Effects

Separately from the system effects, the SC-880 provides "multi-effects," which are specially designed to be applied to specific parts. 64 different multi-effects are provided, including individual effects which distort the waveform, modulate the sound, or add reverberation to the sound, as well as multiple effects that are connected in series or parallel. Since appropriate parameters are provided for each effect, you can make fine adjustments to the sound for professional-level control. You can also save 64 different effects settings of your own as User multi- effects.

* For details on System effects and Multi-effects, and on the effect structure of the SC-880, refer to p. 40.

* When the SC-880 is shipped, the user performances contain the same data as the preset performances.

Multi-effects can be applied independently to individual parts.

* The procedural explanations in this chapter will be given in Patch mode. If you are making these settings from Performance mode, read [PATCH] as [PERFORM].

■ Selecting a Multi-Effects

On the SC-880 you can select from 64 preset multi-effects (P-01–P-64), and 64 user multi-effects (U-01–U-64).
Preset multi-effects are indicated by a "P" before the number, and user multi-effects by a "U," as follows.
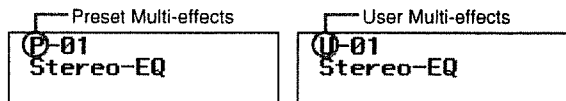
┌─ Preset Multi-effects   ┌─ User Multi-effects
```
(P)-01             (U)-01
Stereo-EQ          Stereo-EQ
```

1. Press [M-FX] (the indicator lights).

2. Rotate the VALUE dial to select the multi-effect that you wish to apply.
Simply selecting a multi-effect will not cause it to be applied to a tone or patch.
Multi-effects can be turned on/off for each part.
Now, try turning the setting on/off for each part.

3. Press [INFO] (the indicator lights).
The display will show the multi-effect on/off setting for each of the 32 parts.
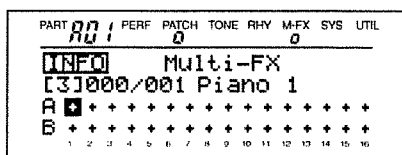
4. Use CURSOR [▲] [▼] [◄] [►] to select the part that you wish to modify.

5. Rotate the VALUE dial to turn the setting on/off.
Rotate the VALUE dial toward the right to turn the setting on, or toward the left to turn the setting off.

6. When you finish making settings, press [EXIT] to leave the setting page.

■ Saving a Multi-Effects

After you have modified the parameters of a multi-effect to your taste, you can save it as a user multi-effects. 64 user multi-effects can be saved.

1. Set the parameters of the multi-effects.

2. Press [WRITE] (the indicator lights).

3. Use CURSOR [▲] to move the cursor to the menu name.

4. Select "Multi-FX Write," by rotating the VALUE dial.

5. Use CURSOR [▼] to move the cursor to the user multi-effects number.
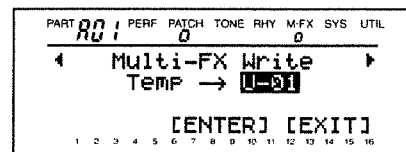
6. Rotate the VALUE dial to select the user multi-effects number at which you wish to save the data.
User multi-effects can be saved in the 64 multi-effects U-01–U-64.

7. Press [ENTER].
You will be asked to confirm that you wish to save the patch. If you decide not to save, press [EXIT].
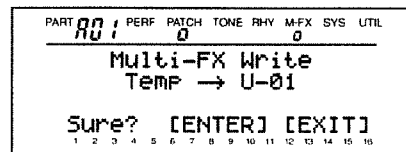
8. Press [ENTER] to save the user multi-effects.

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Making Multi-Effects Settings

There are two types of multi-effects settings: settings that are made in Patch Edit mode and Performance Edit mode, and settings that are made in Multi-effect mode.

■ Adjust the send level

In Patch (Performance) Edit mode, you can adjust the send levels to specify how much of the sound of parts to which the multi-effect was applied will be sent to the system effects (reverb, chorus, delay). For the equalizer, you can specify that it be applied (on) or not (off). The send level is common to all parts for which the multi-effect is turned on, and the amount of the system effect that will actually result will be determined by the send level value and by the level of each system effect (p. 42, 44, 45).

1. Press [PATCH]-[EDIT] (the indicators light).

2. Use CURSOR [▲] to move the cursor to the menu name.

3. Select "Multi-FX," by rotating the VALUE dial.
"Multi-FX" consists of two pages. Here we will select the following page.
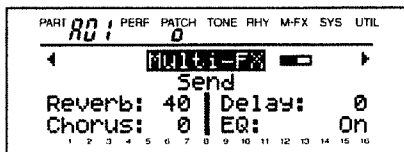
4. Use CURSOR [▲] [▼] [◄] [►] to select the parameter that you wish to modify.

5. Rotate the VALUE dial to adjust the value.

◆ Reverb: 0–127 (Send to Reverb)
Part of the sound of parts for which multi-effects is switched ON will be sent to the reverb. Increasing this value will increase the amount that is sent to the reverb, causing the reverb to be applied more deeply. Decreasing the value will decrease the amount that is sent to the reverb, causing the reverb to be applied less deeply.

◆ Chorus: 0–127 (Send to Chorus)
Part of the sound of parts for which multi-effects is switched ON will be sent to the chorus. Increasing this value will increase the amount that is sent to the chorus, causing the chorus to be applied more deeply. Decreasing the value will decrease the amount that is sent to the chorus, causing the chorus to be applied less deeply.

◆ Delay: 0–127 (Send to Delay)
Part of the sound of parts for which multi-effects is switched ON will be sent to the delay. Increasing this value will increase the amount that is sent to the delay, causing the delay to be applied more deeply. Decreasing the value will decrease the amount that is sent to the delay, causing the delay to be applied less deeply.

◆ EQ: On/Off (Send to Equalizer)
Specify whether the sound of parts for which multi-effect is switched ON will be sent through the equalizer (On) or not (Off). If this is On, the sound of the part will be sent through the equalizer. If this is Off, the equalizer will not apply.

About Reverb/Chorus/Delay for Parts to which Multi-Effects Are Applied

When the multi-effect is turned on, the Send Level (p. 47) that was set in Tone Edit mode for that part will be ignored, and the value will be displayed as—in the screen.
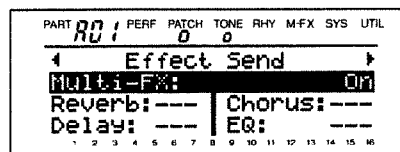
If you wish to apply system effects (reverb, chorus, delay, EQ) to parts for which multi-effect is On, make settings for the above "Reverb," "Chorus," "Delay," and "EQ" parameters.

■ Settings Made in Multi-Effect Mode

In Multi-effect mode you can set the parameters of the multi-effects.

1. Press [M-FX] (the indicator lights).

2. Rotate the VALUE dial to select the multi-effect that you wish to use.
Here let's select P-01 Stereo-EQ.
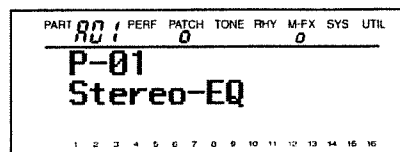
3. Press [EDIT] (the indicator lights).
The display will show the effect algorithms, and the currently selected algorithm will be enclosed in a box. Below it will be displayed the parameters related to the selected algorithm.

The number of the currently selected multi-effect is shown in the upper left.

Algorithm area   Multi-Effects Number

```
PART P0 1  PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
           0            0
■■■-MID1-MID2-HI-OUT
Low Frequency:    400Hz
Low Gain:           + 5
1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
```
↳Parameters
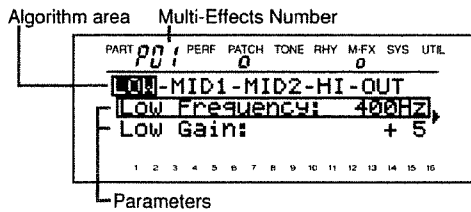
4. Use CURSOR [▲] to move the cursor to the algorithm area.

5. Rotate the VALUE dial to select the desired algorithm.

6. Use CURSOR [▲] [▼] [◄] [►] to move the cursor to the parameter that you wish to modify.

7. Rotate the VALUE dial to adjust the value.

8. Press and hold the VOLUME knob to hear how the effect changes.

You will hear the tone of the part that was selected in the PART display before you entered edit mode.

9. Repeat steps 4–8 to make the desired settings.

10. Press [EXIT] to exit the editing page.

An effect whose parameter settings have been modified will be indicated by an asterisk (*) before the effect name.

```
PART A0 1  PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
           0            0
*P-01
Stereo-EQ
1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
```
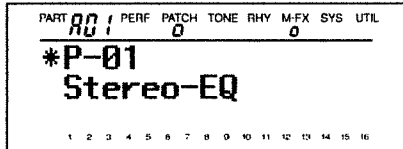
Be aware that when you change the Effect Type, the effect parameters will be initialized. To save your parameter values, it is convenient to use a User Multi-Effects. (p. 49)

* *To switch pages, move the cursor to the algorithm area and use CURSOR [◄] [►] or the VALUE dial. Alternatively, if the cursor is located at a parameter, you can also use CURSOR [◄] [►] to switch pages.*

* *It takes a while until the sound can be heard after you change the Patch and performance.*

* *If a monaural multi-effect is turned on, the settings for Part Pan (p. 24) and Master Pan (p. 22) will be ignored. Monaural multi-effects are those such as P-02: Spectrum and P-35: OD → Chorus. In the case of stereo multi-effects, however, the settings for Part Pan (p. 24) and Master Pan (p. 22) will be effective when the multi-effect is on. Stereo multi-effects are those that maintain discrete L/R channels all the way to the output stage such as P-01: Stereo-EQ and P-16: Hexa Chorus.*

* *If the Multi-effect is turned on for two or more parts, the sound of each part will be mixed.*
   It will not be possible to set reverb/chorus/delay/equalizer independently for these parts. (p. 50)

* *When P-00 Thru is selected, the multi-effects will not be applied.*

■ Using Controllers to Modify Effect Parameters

Controllers can be used to modify the values of multi-effects parameters.

Using MIDI messages to modify effect parameters during a song would require a large amount of data if you were to use only Exclusive messages. Thus, the SC-880 allows you to use controllers to set the main effect parameters. Since you can use Control Change messages to modify parameter values, the amount of data will not be excessively large, even if you modify parameter values during a song.

Also, if you are using a keyboard or other instrument to play, you can use controllers to modify the values in real time.

    Src1 (Control Source 1)
    Depth1 (Control Depth 1)
    Src2 (Control Source 2)
    Depth2 (Control Depth 2)

As an example, we will explain how to use "Src1" "Depth 1" to control the multi-effect from a MIDI keyboard.

1. Press [PATCH]-[EDIT] (the indicators light).

2. Use CURSOR [▲] to move the cursor to the menu name.

3. Select "Multi-FX," by rotating the VALUE dial.

"Multi-FX" consists of two pages. Here we will select the following page.

```
PART A0 1  PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
           0
◄      ■Multi-FX■ ■■
            Control
Src1:  Off   Depth1:±    0
Src2:  Off   Depth2:±    0
1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
```
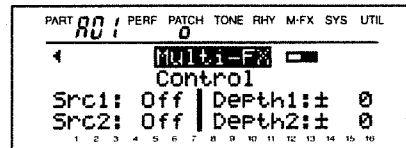
4. Use CURSOR [▲] [▼] [◄] [►] to move the cursor to "Src1."

5. Rotate the VALUE dial to adjust the value.
For this example, select "CC16."

6. Use CURSOR [▲] [▼] [◄] [►] to move the cursor to "Depth1."

```
PART A0 1  PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
           0
◄        Multi-FX ■■
            Control
Src1:CC16  ■Depth1:±   ■
Src2: Off   Depth2:±    0
1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
```
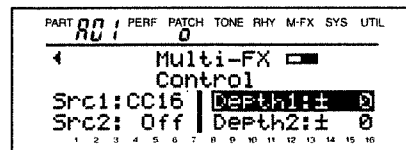
7. Rotate the VALUE dial to adjust the value.
For this example, select "+100."

8. Set the controller of the MIDI keyboard to transmit "CC16."

For details, refer to the owner's manual of your MIDI keyboard.

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Now the controller of the MIDI keyboard will be able to control the multi-effect.

"Src1" (Control Source 1) can be used to control the multi-effect parameters that are marked with a "+".

● Src1: Off/CC1-95/CAf/Bend (Control Source 1)
● Src2: Off/CC1-95/CAf/Bend (Control Source 2)

Specifies the controllers that you wish to use. "Src1" he parameter marked with a "+" at the left of the parameter name. "Src2" will control the parameter marked with a "#" at the left of the parameter name.

CC 1–95: Controller numbers 1–95
CAf: Channel aftertouch
Bend: Pitch bend

* For CC 1–95, make sure that the setting matches the controller number of the device that is transmitting the MIDI messages.

● Depth1: -100-+100 (%) (Control Depth 1)
● Depth2: -100-+100 (%) (Control Depth 2)

These specify the percentage of the full parameter range in which change will actually occur when a controller is used. Higher values will allow a greater range of change. If this value is set to 0, the controller will not affect the effect parameter. With negative (-) settings, the change will be inverted. The controller will increase/decrease the value of the effect parameter relative to the value that was set from the panel. At this time, the value displayed on the Display will not change.

When Depth has a positive (+) setting
Display setting value + value from controller x depth (%) / 100

When Depth has a negative (-) setting
Display setting value–value from controller x depth (%) / 100

< Example >
The Drive parameter of P-05: Overdrive normally changes in the range of 0–127.
When this parameter is modified by a controller, it will change in the range of 0–127 if the Control Depth value is +100. With a value of +50, it will change in the range of 0–64 (i.e., 50% of 127).

Normally	→ 0–127
Depth = +100%	→ 0–127
Depth = +50%	→ 0–64
Depth = -100%	→ 127–0

Types of Multi-Effects

Effect types can be broadly grouped into the following categories.

Individual Effects
Effects that modify the tone color (filter type) (P-01–P-04)
Effects that distort the sound (distortion type) (P-05–P-06)
Effects that modulate the sound (modulation type) (P-07–P-13)
Effects that affect the level (compressor type) (P-14–P-15)
Effects that broaden the sound (chorus type) (P-16–P-20)
Effects that add reverberation to the sound (delay/reverb type) (P-21–P-28)
Effects that modify the pitch (pitch shift type) (P-29–P-30)
Others (P-31–P-34)

Series Effects
Effects that connect two types of effect in series (series 2) (P-35–P-46)
Effects that connect three or more types of effect in series (series 3/series 4/series 5) (P-47–P-55)

Parallel Effects
Effects that connect two types of effect in parallel (parallel 2) (P-56–P-64)

In the explanations that follow, the hexadecimal values used when making settings via exclusive messages are given at the end of the effect type line. The parameter number is given in decimal form at the end of the Effect Parameter line. Use these values when you use MIDI messages to set parameters. For details on using exclusive messages, refer to p. 90, 91, 181.

The algorithm connection is shown below the effect name. The various parameters explained below are grouped by their algorithm.

< Example >

P-01: Stereo-EQ (Stereo equalizer)
[01H, 00H]

This means that the value for Address 40H 03H 00H is MSB: 01H, LSB: 00H.

For example, if you wish to set the effect type to **P-01: Stereo-EQ**, use an exclusive message such as the following:

F0 41 10 42 12 40 03 00 01 00 3C F7
address value

The algorithm connection

LOW-MID 1-MID 2-HI-OUT

Low Frequency	200Hz/400Hz [1]
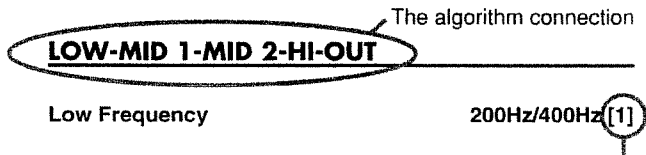
[1] Describes that it's the first parameter.

Parameter numbers and Exclusive message addresses correspond as follows. (p. 186, 187)

[1]	40 03	03	[11]	40 03	0D
[2]		04	[12]		0E
[3]		05	[13]		0F
[4]		06	[14]		10
[5]		07	[15]		11
[6]		08	[16]		12
[7]		09	[17]		13
[8]		0A	[18]		14
[9]		0B	[19]		15
[10]		0C	[20]		16

* *Parameters with "+" or "#" symbols allow you to modify their value using specified controller, such as pitch bend lever and sliders, or with control change messages. (p. 51)*

When Using 3D Effects

The following four 3D effects utilize RSS (Roland Sound Space) technology to create a spaciousness that cannot be produced by delay, reverb, or chorus, etc.

    P-20: 3D Chorus
    P-28: 3D Delay
    P-31: 3D Auto
    P-32: 3D Manual

When using these effects, we recommend that you place your speakers as follows. Also, make sure that the speakers are at a sufficient distance from the walls on either side.
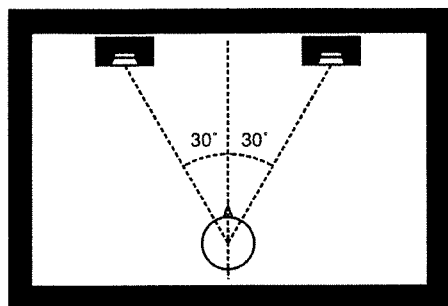
If the left and right speakers are too far apart, or if there is too much reverberation, the full 3D effect may not appear.
Each of these effects has an "Output Mode" parameter. If the sound from the OUTPUT jacks will be heard through speakers, set this parameter to Speaker. If the sound will be heard through headphones, set it to Phones. This will ensure that the optimal 3D effect will be heard. If this parameter is not set correctly, the full 3D effect may not appear.

■ Individual Effects

P-00: Thru [00H, 00H]

No Effect will be applied. When a General MIDI System On or GS Reset messages (p. 110) is received, P-00: Thru will be selected for multi-effects.
When "P-00 Thru" is selected, pressing [EDIT] will access the following display. If you wish to edit the multi-effects, you must first select the multi-effects type.
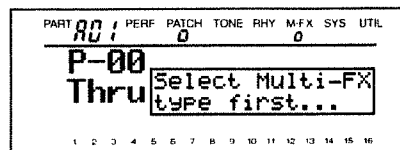
● Effects that modify the tone color (filter type)

P-01: Stereo-EQ (Stereo equalizer) [01H, 00H]

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

LOW-MID1-MID2-HI-OUT

[LOW]
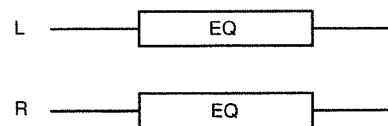
Low Frequency   200Hz/400Hz [1]
Selects the frequency of the low range (200 Hz/400 Hz).

Low Gain   -12–+12 (dB)[2]
Adjusts the gain of the low frequency.

[MID1]

Mid1 Freq. (Mid 1 Frequency)   200Hz–6.3kHz [5]
Adjusts the frequency of Mid 1 (mid range 1).

Mid1 Q   0.5/1.0/2.0/4.0/9.0 [6]
This parameter adjusts the width of the area around the Mid 1 Freq parameter that will be affected by the Gain setting. Higher values of Q will result in a narrower area being affected.

Mid1 Gain   -12–+12(dB) [7]
Adjusts the gain for the area specified by the Mid 1 Freq parameter and Mid 1 Q parameter settings.

[MID2]

Mid2 Freq. (Mid 2 Frequency)   200Hz–6.3kHz [8]
Adjusts the frequency of Mid 2 (mid range 2).

Mid2 Q   0.5/1.0/2.0/4.0/9.0 [9]

This parameter adjusts the width of the area around the Mid 2 Freq parameter that will be affected by the Gain setting. Higher values of Q will result in a narrower area being affected.

Mid2 Gain   -12–+12(dB) [10]

Adjusts the gain for the area specified by the Mid 2 Freq parameter and Mid 2 Q parameter settings.

[HI]

High Frequency   4k/8kHz [3]

Selects the frequency of the high range (4 kHz/8 kHz).

High Gain   -12–+12(dB) [4]

Adjusts the gain of the high frequency.

[OUT]

+Output Level   0–127 [20]

Adjusts the output level.

P-02: Spectrum   [01H, 01H]

Spectrum is a type of filter that modifies the timbre by boosting or cutting the level at specific frequencies. It is similar to an equalizer, but has 8 frequency points fixed at locations most suitable for adding character to the sound.

W (1-2-3-4-5-6-7-8)-OUT

[W]
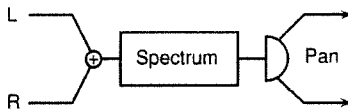
Band Width   0.5/1.0/2.0/4.0/9.0 [9]

Adjusts the width of the frequency bands whose gain is being modified (common to all bands). Higher settings will make the frequency band narrower.

[1]

Band 1 (Band 1 Gain)   -12–+12(dB) [1]

Adjusts the 250 Hz level.

[2]

Band 2 (Band 2 Gain)   -12–+12(dB) [2]

Adjusts the 500 Hz level.

[3]

Band 3 (Band 3 Gain)   -12–+12(dB) [3]

Adjusts the 1000 Hz (1 kHz) level.

[4]

Band 4 (Band 4 Gain)   -12–+12(dB) [4]

Adjusts the 1250 Hz level.

[5]

Band 5 (Band 5 Gain)   -12–+12(dB) [5]

Adjusts the 2000 Hz level.

[6]

Band 6 (Band 6 Gain)   -12–+12(dB) [6]

Adjusts the 3150 Hz level.

[7]

Band 7 (Band 7 Gain)   -12–+12(dB) [7]

Adjusts the 4000 Hz level.

[8]

Band 8 (Band 8 Gain)   -12–+12(dB) [8]

Adjusts the 8000 Hz level.

[OUT]

+Pan (Output Pan)   L63–0–R63 [19]

Adjusts the stereo location of the output sound. L63 is far left, 0 is center, and R63 is far right.

#Level (Output Level)   0–127 [20]

Adjusts the output level.

P-03: Enhancer   [01H, 02H]

The Enhancer controls the overtone structure of the high frequencies, adding sparkle and tightness to the sound.
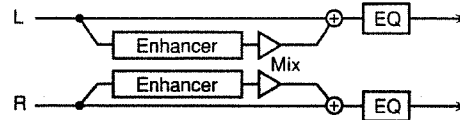
ENHANCER-OUTPUT

[ENHANCER]

+Sensitivity   0–127 [1]

Adjusts the sensitivity of the enhancer.

#Mix Level   0–127 [2]

Adjusts the ratio by which the overtones generated by the enhancer are combined with the direct sound.

[OUTPUT]

Low Gain   -12–+12(dB) [17]

Adjusts the gain of the low frequency range.

High Gain   -12–+12(dB) [18]

Adjusts the gain of the high frequency range.

Output Level   0–127 [20]

Adjusts the output level.

P-04: Humanizer [01H, 03H]

This adds a vowel character to the sound, making it similar to a human voice.
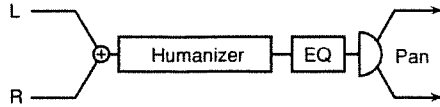
DRIVE-VOWEL-OUTPUT

[DRIVE]

Drive	**0–127 [1]**

Adjusts the depth of distortion.

Drive Switch	**Off/On [2]**

Turns Drive on/off.

[VOWEL]

+Vowel	**a/i/u/e/o [3]**

Selects the vowel.

Accel	**0–15 [4]**

Adjusts the time over which the sound will move to the specified Vowel. Smaller values will require more time.

[OUTPUT]

L Gain (Low Gain)	**-12–+12(dB) [17]**

Adjusts the low frequency gain.

H Gain (High Gain)	**-12–+12(dB) [18]**

Adjusts the high frequency gain.

Output Pan	**L63–0–R63 [19]**

Adjusts the stereo position of the output sound. L63 is far left, 0 is center, and R63 is far right.

#Output Level	**0–127 [20]**

Adjusts the output volume.

● Effects that distort the sound (distortion type)

P-05: Overdrive [01H, 10H]

This effect creates a soft distortion similar to that produced by tube amplifiers.

OVERDRIVE-AMP-OUTPUT

[OVERDRIVE]

+Drive	**0–127[1]**

Adjusts the degree of distortion.

[AMP]

Amp Type (Amp Simulator Type)

Small/Built-in/Double Stack/Triple Stack [2]

Selects the type of guitar amp.

Small:	small amp
Built-in:	single-unit type amp
Double Stack:	large double stack amp
Triple stack:	large triple stack amp

Amp Switch	**Off/On [3]**

Turns the Amp Type on/off.

[OUTPUT]

L Gain (Low Gain)	**-12–+12(dB) [17]**

Adjusts the gain of the low frequency range.

H Gain (High Gain)	**-12–+12(dB) [18]**

Adjusts the gain of the high frequency range.

#Output Pan	**L63–0–R63 [19]**

Adjusts the stereo location of the output sound. L63 is far left, 0 is center, and R63 is far right.

Output Level	**0–127 [20]**

Adjusts the output level.

P-06: Distortion [01H, 11H]

This effect produces a more intense distortion than Overdrive.
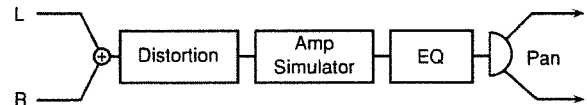
DISTORTION-AMP-OUTPUT

[DISTORTION]

+Drive	**0–127 [1]**

Adjusts the degree of distortion.

[AMP]

Amp Type (Amp Simulator Type)

Small/Built-in/Double Stack/ Triple Stack [2]

Selects the type of guitar amp.

Small:	small amp
Built-in:	single-unit type amp
Double Stack:	large double stack amp
Triple stack:	large triple stack amp

Amp Switch	**Off/On [3]**

Turns the Amp Type on/off.

[OUTPUT]

L Gain (Low Gain)	**-12–+12(dB) [17]**

Adjusts the gain of the low frequency range.

Chapter 5

H Gain (High Gain)   -12–+12(dB) [18]

Adjusts the gain of the high frequency range.

#Output Pan   L63–0–R63 [19]

Adjusts the stereo location of the output sound. L63 is far left, 0 is center, and R63 is far right.

Output Level   0–127 [20]

Adjusts the output level.

● Effects that modulate the sound (modulation type)

P-07: Phaser   [01H, 20H]

A phaser adds a phase-shifted sound to the original sound, producing a twisting modulation that creates spaciousness and depth.
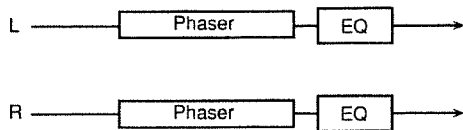
PHASER-OUTPUT

[PHASER]

+Manual   100Hz–8.0kHz [1]

Adjusts the basic frequency from which the sound will be modulated.

#Rate   0.05–10.0(Hz) [2]

Adjusts the frequency (period) of modulation.

Depth   0–127 [3]

Adjusts the depth of modulation.

Resonance   0–127 [4]

Adjusts the amount of emphasis added to the frequency range surrounding the basic frequency determined by the Manual parameter setting.

[OUTPUT]

Mix Level   0–127 [5]

Adjusts the ratio by which the phase-shifted sound is combined with the direct sound.

L Gain (Low Gain)   -12–+12(dB) [17]

Adjusts the gain of the low frequency range.

H Gain (High Gain)   -12–+12(dB) [18]

Adjusts the gain of the high frequency range.

Output Level   0–127 [20]

Adjusts the output level.

P-08: Auto Wah   [01H, 21H]

The Auto Wah cyclically controls a filter to create cyclic change in timbre.

WAH-MODULATION-OUTPUT

[WAH]
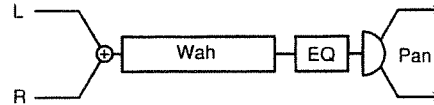
Filtype (Filter Type)   LPF/BPF [1]

Selects the 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.

Sens (Sensitivity)   0–127 [2]

Adjusts the sensitivity with which the filter is controlled. If this value is increased, the filter frequency will change more readily in response to the input level.

+Manual   0–127 [3]

Adjusts the center frequency from which the effect is applied.

Peak   0–127 [4]

Adjusts the amount of the wah effect that will occur in the vicinity of the center frequency. Lower settings will cause the effect to be applied in a broad area around the center frequency. Higher settings will cause the effect to be applied in a more narrow range. In the case of LPF, decreasing the value will cause the wah effect to change less.

[MODULATION]

#Rate   0.05–10.0Hz [5]

Adjusts the speed of the modulation.

Depth   0–127 [6]

Adjusts the depth of the modulation.

Polarity   Down/Up [7]

Sets the direction in which the frequency will change when the filter is modulated. With a setting of Up, the filter will change toward a higher frequency. With a setting of Down it will change toward a lower frequency.

[OUTPUT]

L Gain (Low Gain)   -12–+12(dB) [17]

Adjusts the gain of the low frequency range for EQ.

H Gain (High Gain)   -12–+12(dB) [18]

Adjusts the gain of the high frequency range for EQ.

Output Pan   L63–0–R63 [19]

Adjusts the stereo location of the output sound. L63 is far left, 0 is center, and R63 is far right.

Output Level   0–127 [20]
Adjusts the output level.

P-09: Rotary   [01H, 22H]

The Rotary effect simulates the sound of a classic rotary speakers. 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.
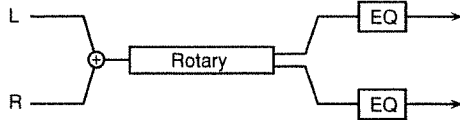
LOW-HIGH-SP-OUTPUT

[LOW]

Slow Rate (Low Frequency Slow Rate)   0.05–10.0Hz [1]
Adjusts the slow speed (Slow) of the low frequency rotor.

Fast Rate (Low Frequency Fast Rate)   0.05–10.0Hz [2]
Adjusts the fast speed (Fast) of the low frequency rotor.

Accel (Low Frequency Acceleration)   0–15 [3]
Adjusts the time it takes for the low frequency rotor to reach the newly selected speed when switching from fast to slow (or slow to fast) speed. Lower values will require longer times.

Level (Low Frequency Level)   0–127 [4]
Adjusts the volume of the low frequency rotor.

[HIGH]

Slow Rate (High Frequency Slow Rate)   0.05–10.0Hz [5]
Adjusts the slow speed (Slow) of the high frequency rotor.

Fast Rate (High Frequency Fast Rate)   0.05–10.0Hz [6]
Adjusts the fast speed (Fast) of the high frequency rotor.

Accel (High Frequency Acceleration)   0–15 [7]
Adjusts the time it takes for the high frequency rotor to reach the newly selected speed when switching from fast to slow (or slow to fast) speed. Lower values will require longer times.

Level (High Frequency Level)   0–127 [8]
Adjusts the volume of the high frequency rotor.

[SP]

Separation   0–127 [9]
Adjusts the spatial dispersion of the sound.

+Speed   Slow/Fast [11]
Simultaneously switch the rotational speed of the low frequency rotor and high frequency rotor.

     Slow: Slow down the rotation to the specified speed (the [Low] Slow Rate parameter/[High] Slow Rate parameter values).

     Fast: Speed up the rotation to the specified speed (the [Low] Fast Rate parameter/[High] Fast Rate parameter values).

[OUTPUT]

Low Gain   -12–+12(dB) [17]
Adjusts the gain of the low frequency range for EQ.

High Gain   -12–+12(dB) [18]
Adjusts the gain of the high frequency range for EQ.

#Output Level   0–127 [20]
Adjusts the output level.

P-10: Stereo Flanger   [01H, 23H]

This is a stereo flanger. It produces a metallic resonance that rises and falls like a jet airplane taking off or landing. A filter is provided so that you can adjust the timbre of the flanged sound.
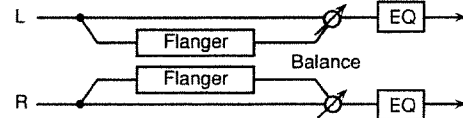
FIL-FLANGR-OUTPUT

[FIL]

Pre Filter Type   Off/LPF/HPF [1]
Selects the type of filter.
     Off: a filter will not be used
     LPF: cut the frequency range above the Cutoff parameter
     HPF: cut the frequency range below the Cutoff parameter

Cutoff Freq.(Cutoff Frequency)   250Hz–8 kHz [2]
Adjusts the basic frequency of the filter.

[FLANGR]

Pre Dly (Pre Delay Time)   0–100 m(s) [3]
Adjusts the time delay from when the direct sound begins until the processed sound is heard.

Depth   0–127 [5]
Adjusts the depth of modulation.

+Rate   0.05–10.0(Hz) [4]
Adjusts the rate of modulation.

Phase   0–180 [7]
Adjusts the spatial spread of the sound.

#Feedback Level   -98%–+98% [6]
Adjusts the amount (%) of the processed sound that is returned (fed back) into the input. Negative (-) settings will invert the phase.

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[OUTPUT]

Bal (Effect Balance)

Dry100, Effect 0–Dry 0,Effect100 [16]

Adjusts the volume balance between the direct and the processed sound.

L Gain (Low Gain) -12–+12(dB) [17]

Adjusts the gain of the low frequency range.

H Gain (High Gain) -12–+12(dB) [18]

Adjusts the gain of the high frequency range.

Output Level 0–127 [20]

Adjusts the output level.

P-11: Step Flanger [01H, 24H]

The Step Flanger is an effect in which the flanger pitch changes in steps.
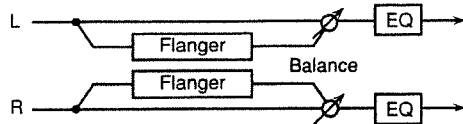
MOD-STEP FLANGER-OUT

[MOD]

PreDelay Time 0–100msec [1]

Adjusts the time delay from when the direct sound begins until the processed sound is heard.

Rate 0.05–10.0Hz [2]

Adjusts the rate of modulation.

Depth 0–127 [3]

Adjusts the depth of modulation.

[STEP FLANGER]

+Feedback Level -98%–+98% [4]

Adjusts the amount (%) of the processed sound that is returned (fed back) into the input. Negative (-) settings will invert the phase.

Phase 0–180 [5]

Adjusts the spatial spread of the sound.

#Step Rate 0.05–10.0Hz [6]

Adjusts the rate (period) of pitch change.

[OUT]

Bal (Effect balance)

Dry100, Effect 0–Dry 0,Effect100 [16]

Adjusts the volume balance between the direct and the processed sound.

L Gain (Low Gain) -12–+12(dB) [17]

Adjusts the gain of the low frequency range.

H Gain (High Gain) -12–+12(dB) [18]

Adjusts the gain of the high frequency range.

Output Level 0–127 [20]

Adjusts the output level.

P-12: Tremolo [01H, 25H]

Tremolo cyclically modulates the volume to add tremolo effect to the sound.

TREMOLO-OUTPUT

[TREMOLO]

Modulation Wave

∿ / ⎍⎍ / ∿ / ⩗ / ⩘ [1]

Selects the type of modulation.

∿ : The sound will be modulated like a triangle wave.

⎍⎍ : The sound will be modulated like a square wave.

∿ : The sound will be modulated like a sine wave.

⩗ ⩘ : The sound will be modulated like a sawtooth wave.

+Modulation Rate 0.05–10.0(Hz) [2]

Adjusts the speed of modulation.

#Modulation Depth 0–127 [3]

Adjusts the depth of modulation.

[OUTPUT]

Low Gain -12–+12(dB) [17]

Adjusts the gain of the low frequency range.

High Gain -12–+12(dB) [18]

Adjusts the gain of the high frequency range.

Output Level 0–127 [20]

Adjusts the output level.

P-13: Auto Pan [01H, 26H]

The Auto Pan effect cyclically modulates the stereo location of the sound.
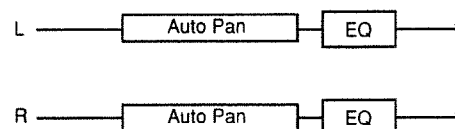
AUTO PAN-OUTPUT

[AUTO PAN]

Modulation Wave

∿∿ / ⊓⊔⊓ / ∿∿ / ⌐∿ / ∿⌐ [1]

Selects the type of modulation.

∿∿ : The sound will be modulated like a triangle wave.

⊓⊔⊓ : The sound will be modulated like a square wave.

∿∿ : The sound will be modulated like a sine wave.

⌐∿ ∿⌐ : The sound will be modulated like a sawtooth wave.

+Modulation Rate   0.05–10.0(Hz) [2]

Adjusts the frequency of modulation.

#Modulation Depth   0–127 [3]

Adjusts the depth of modulation.

[OUTPUT]

Low Gain   -12–+12(dB) [17]

Adjusts the gain of the low frequency range.

High Gain   -12–+12(dB) [18]

Adjusts the gain of the high frequency range.

Output Level   0–127 [20]

Adjusts the output level.

● Effects that affect the level (compressor type)

P-14: Compressor   [01H, 30H]

The Compressor flattens out high levels and boosts low levels, smoothing out unevenness in volume.

COMPRESSOR-OUTPUT

[COMPRESSOR]

Attack   0–127 [1]

Adjusts the attack time of an input sound.

Sustain   0–127 [2]

Adjusts the time over which low level sounds are boosted until they reach the specified volume.

Increasing the value will shorten the time. When the value is modified, the level will also change.

Post Gain   0/+6/+12/+18 [3]

Adjusts the output gain.

[OUTPUT]

L Gain (Low Gain)   -12–+12(dB) [17]

Adjusts the low frequency gain.

H Gain (High Gain)   -12–+12(dB) [18]

Adjusts the high frequency gain.

+Output Pan   L63–0–R63 [19]

Adjusts the stereo location of the output sound. L63 is far left, 0 is center, and R63 is far right.

#Output Level   0–127 [20]

Adjusts the output level.

P-15: Limiter   [01H, 31H]

The Limiter compresses signals that exceed a specified volume level, preventing distortion from occurring.
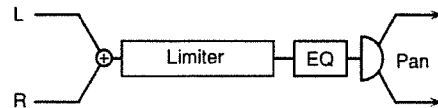
LIMITER-OUTPUT

[LIMITER]

Threshold Level   0–127 [1]

Adjusts the volume at which compression will begin.

Comp. Ratio (Compression Ratio)

1/1.5, 1/2, 1/4, 1/100 [2]

This adjusts the compression ratio for signals that are louder than the Threshold Level. 1/100 is the highest compression ratio, and the output level will decrease.

Release (Release Time)   0–127 [3]

Adjusts the time from when the volume falls below the Threshold Level until compression is no longer applied.

PostG (Post Gain)   0/+6/+12/+18 [4]

Adjusts the output gain.

[OUTPUT]

L Gain (Low Gain)   -12–+12(dB) [17]

Adjusts the low frequency gain.

H Gain (High Gain)   -12–+12(dB) [18]

Adjusts the high frequency gain.

+Output Pan   L63–0–R63 [19]

Adjusts the stereo location of the output sound. L63 is far left, 0 is center, and R63 is far right.

#Output Level   0–127 [20]

Adjusts the output level.

Chapter 5

● Effects that broaden the sound (chorus type)

P-16: Hexa Chorus [01H, 40H]

Hexa-chorus uses a six-phase chorus (six layers of chorused sound) to give richness and spatial spread to the sound.
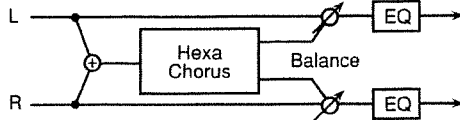
DLY-HEXA CHO-OUTPUT

[DLY]

PreDelay Time 0–100 msec [1]

Adjusts the time delay from when the direct sound begins until the processed sound is heard.

PreDelay Deviation 0–20 [4]

The Pre Delay is the time from when the original sound begins until the chorus sound is heard. This adjusts the difference in Pre Delay between each of the six phases of chorus sound.

[HEXA CHO]

+Rate 0.05–10.0(Hz) [2]

Adjusts the rate of modulation.

Depth 0–127 [3]

Adjusts the depth of modulation.

Depth Deviation -20–+20 [5]

Adjusts the difference in modulation depth between each of the six phases of chorus sound.

Pan Deviation 0–20 [6]

Adjusts the difference in stereo position between each of the six phases of chorus sound. With a setting of 0, all the chorus sound will be located in the center. With a setting of 20, each chorus sound will be placed in 30 degree intervals relative to the center position.

[OUTPUT]

#Bal (Effect Balance)
Dry100, Effect 0–Dry 0, Effect100 [16]

Adjusts the volume balance between the direct and the processed sound.

L Gain (Low Gain) -12–+12(dB) [17]

Adjusts the low frequency gain.

H Gain (High Gain) -12–+12(dB) [18]

Adjusts the high frequency gain.

Output Level 0–127 [20]

Adjusts the output level.

P-17: Tremolo Chorus [01H, 41H]

Tremolo Chorus is a chorus effect with added Tremolo (cyclic modulation of volume).
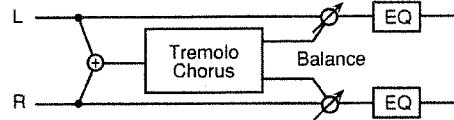
CHORUS-TREMOLO-OUTPUT

[CHO]

PreDelay Time 0–100msec [1]

Adjusts the time delay from when the direct sound begins until the chorus sound is heard.

Chorus Rate 0.05–10.0Hz [2]

Adjusts the modulation speed of the chorus effect.

Chorus Depth 0–127 [3]

Adjusts the modulation depth of the chorus effect.

[TREMOLO]

Tremolo Phase 0–180 [4]

Adjusts the width of the tremolo sound.

+Tremolo Rate (Tremolo Rate) 0.05–10.0Hz [5]

Adjusts the modulation speed of the tremolo effect.

Tremolo Separation 0–127 [6]

Adjusts the spatial spread of the tremolo effect.

[OUTPUT]

#Bal (Effect Balance)
Dry100, Effect 0–Dry 0, Effect100 [16]

Adjusts the volume balance between the direct and the processed sound.

L Gain (Low Gain) -12–+12(dB) [17]

Adjusts the low frequency gain.

H Gain (High Gain) -12–+12(dB) [18]

Adjusts the high frequency gain.

Output Level 0–127 [20]

Adjusts the output level.

P-18: Stereo Chorus [01H, 42H]

This is a stereo chorus. A filter is provided so that you can adjust the timbre of the chorus sound.
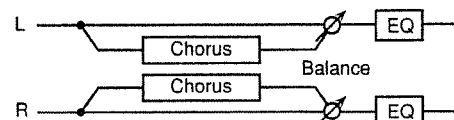
FIL-CHORUS-OUTPUT

[FIL]

Pre Filter Type   Off/LPF/HPF [1]
Selects the type of filter.
    Off: a filter will not be used
    LPF: cut the frequency range above the cutoff
    HPF: cut the frequency range below the cutoff

Cutoff Freq.(Cutoff Frequency)   250Hz–8kHz [2]
Adjusts the center frequency of the filter for the chorus sound for the chorus sound.

[CHORUS]

PreDelay Time   0–100msec [3]
Adjusts the time delay from when the direct sound begins until the processed sound is heard.

+Rate   0.05–10.0Hz [4]
Adjusts the rate of modulation.

Depth   0–127 [5]
Adjusts the depth of modulation.

Phase   0–180 [7]
Adjusts the spatial spread of the sound.

[OUTPUT]

#Bal (Effect Balance)
                        Dry100, Effect 0–Dry 0, Effect100 [16]
Adjusts the volume balance between the direct and the processed sound.

L Gain (Low Gain)   -12–+12(dB) [17]
Adjusts the gain of the low frequency range.

H Gain (High Gain)   -12–+12(dB) [18]
Adjusts the gain of the high frequency range.

Output Level   0–127 [20]
Adjusts the output level.

P-19: Space D   [01H, 43H]

Space-D is a multiple chorus that applies two-phase modulation in stereo. It gives no impression of modulation, but produces a transparent chorus effect.
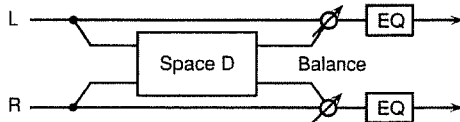
SPACE D-OUTPUT

[SPACE D]

PreDelay Time   0–100msec [1]
Adjusts the time delay from when the direct sound begins until the processed sound is heard.

+Rate   0.05–10.0Hz [2]
Adjusts the rate of modulation.

Depth   0–127 [3]
Adjusts the depth of modulation.

Phase   0–180 [4]
Adjusts the spatial spread of the sound.

[OUTPUT]

#Bal (Effect Balance)
                        Dry100, Effect 0–Dry 0, Effect100 [16]
Adjusts the volume balance between the direct and the processed sound.

L Gain (Low Gain)   -12–+12(dB) [17]
Adjusts the gain of the low frequency range.

H Gain (High Gain)   -12–+12(dB) [18]
Adjusts the gain of the high frequency range.

Output Level   0–127 [20]
Adjusts the output level.

P-20: 3D Chorus   [01H, 44H]

This applies a 3D effect to the chorus sound. The chorus sound will be positioned 90 degrees left and 90 degrees right.
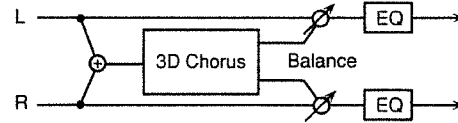
3D CHORUS-OUTPUT

[3D CHORUS]

PreDelay Time   0–100msec [1]
Adjusts the time delay from when the direct sound begins until the processed sound is heard.

+Rate (Chorus Rate)   0.05–10.0(Hz) [2]
Adjusts the modulation speed of the chorus sound.

Depth (Chorus Depth)   0–127 [3]
Adjusts the modulation depth of the chorus sound.

Output Mode   Speaker/Phones [15]
Specifies the method that will be used to hear the sound which is output to the OUTPUT jacks. The optimal 3D effect will be achieved if you select Speaker when using speakers, or Phones when using headphones (p. 53).

[OUTPUT]

#Bal (Effect balance)
                        Dry100, Effect 0–Dry 0, Effect100 [16]
Adjusts the volume balance between the direct and the processed sound.

L Gain (Low Gain)   -12–+12(dB) [17]
Adjusts the gain of the low frequency range.

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H Gain (High Gain)   -12–+12(dB) [18]
Adjusts the gain of the high frequency range.

Output Level   0–127 [20]]
Adjusts the output level.

● Effects that add reverberation to the sound (delay/reverb type)

P-21: Stereo Delay   [01H, 50H]

This is a stereo delay.
Feedback Mode is Norm:
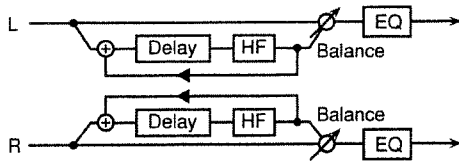
Feedback Mode is Cross:
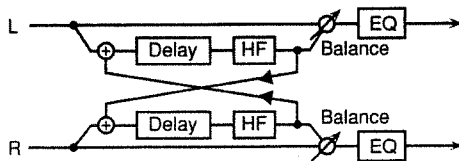
DELAY-FB-OUTPUT

[DELAY]

TimeL (Delay time left)   0–500m(s) [1]
Adjusts the time from the original sound until the left delay sound is heard.

TimeR (Delay time right)   0–500m(s) [2]
Adjusts the time from the original sound until the right delay sound is heard.

Phase L (Phase left)   Norm/Invert [5]
Selects the phase of the left delay sound.
    Norm: Phase will not be changed.
    Invert: Phase will be inverted.

Phase R (Phase right)   Norm/Invert [6]
Selects the phase of the right delay sound.
    Norm: Phase will not be changed.
    Invert: Phase will be inverted.

[FB]

+Feedback Level   -98%–+98% [3]
Adjusts the proportion (%) of the processed sound that is fed back into the effect. Negative (-) settings will invert the phase.

Feedback Mode   Norm/Cross [4]
Selects the way in which processed sound is fed back into the effect.
    Norm: The left delay sound will be fed back into the left delay, and the right delay sound into the right delay.
    Cross: The left delay sound will be fed back into the right delay, and the right delay sound into the left delay.

HF Damp   315Hz–8kHz/Bypass [8]
Adjusts the frequency above which sound fed back to the effect will be cut. If you do not want to cut the high frequencies of the feedback, set this parameter to Bypass.

[OUTPUT]

#Bal (Effect balance)
                    Dry100, Effect 0–Dry 0, Effect100 [16]
Adjusts the volume balance between the direct and the processed sound.

L Gain (Low gain)   -12–+12(dB) [17]
Adjusts the gain of the low frequency range.

H Gain (High gain)   -12–+12(dB) [18]
Adjusts the gain of the high frequency range.

Output Level   0–127 [20]
Adjusts the output level.

P-22: Modulation Delay   [01H, 51H]

This effect adds modulation to the delayed sound, producing an effect similar to a flanger.
Feedback Mode is Norm:
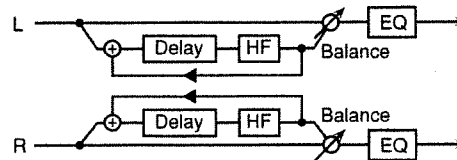
Feedback Mode is Cross:
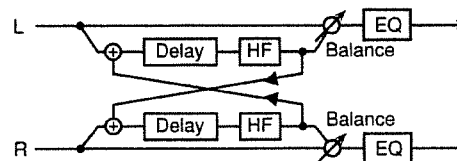
TIME-FB-MOD-OUTPUT

[TIME]

Delay Time L (Delay Time Left)   0–500msec [1]
Adjusts the time from the original sound until the left delay sound is heard.

Delay Time R (Delay Time Right)   0–500msec [2]
Adjusts the time from the original sound until the right delay sound is heard.

[FB]

Feedback Level   **-98%–+98% [3]**

Adjusts the proportion (%) of the processed sound that is fed back into the effect. Negative (-) settings will invert the phase.

Feedback Mode   **Norm/Cross [4]**

Selects the way in which processed sound is fed back into the effect.

> Norm: The left delay sound will be fed back into the left delay, and the right delay sound into the right delay.
>
> Cross: The left delay sound will be fed back into the right delay, and the right delay sound into the left delay.

HF Damp   **315Hz–8kHz/Bypass [8]**

Adjusts the frequency above which sound fed back to the effect will be cut. If you do not wish to cut the high frequencies of the feedback, set this parameter to Bypass.

[MOD]

+Modulation Rate   **0.05–10.0(Hz) [5]**

Adjusts the speed of the modulation.

Modulation Depth   **0–127 [6]**

Adjusts the depth of the modulation.

Modulation Phase   **0–180 [7]**

Adjusts the spatial spread of the sound.

[OUTPUT]

#Bal (Effect Balance)
           Dry100, Effect 0–Dry 0, Effect100 [16]

Adjusts the volume balance between the direct and the processed sound.

L Gain (Low Gain)   **-12–+12(dB) [17]**

Adjusts the gain of the low frequency range.

H Gain (High Gain)   **-12–+12(dB) [18]**

Adjusts the gain of the high frequency range.

Output Level   **0–127 [20]**

Adjusts the output level.

P-23: 3 Tap Delay (Triple tap delay) [01H, 52H]

The Triple Tap Delay produces three delay sounds; center, left and right.
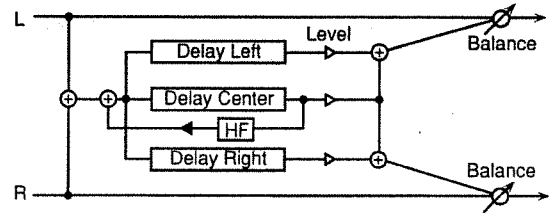
TIME-LEVEL-FB-OUTPUT

[TIME]

DelayTimeCenter   **200–990ms/1 sec [1]**

Adjusts the time delay from the direct sound until the center delay sound is heard.

DelayTime Left   **200–990ms/1 sec [2]**

Adjusts the time delay from the direct sound until the left delay sound is heard.

DelayTime Right   **200–990ms/1 sec [3]**

Adjusts the time delay from the direct sound until the right delay sound is heard.

[LEVEL]

Delay LevelCenter   **0–127 [5]**

Adjusts the volume of center delay sound.

Delay Level Left   **0–127 [6]**

Adjusts the volume of left delay sound.

Delay Level Right   **0–127 [7]**

Adjusts the volume of right delay sound.

[FB]

+Feedback Level   **-98%–+98% [4]**

Adjusts the proportion (%) of the Center Delay sound that is fed back into the effect. Negative (-) settings will invert the phase.

HF Damp   **315Hz–8kHz/Bypass [8]**

This adjusts the frequency at which the high range is cut when the Center Delay sound is returned to the input. If you do not wish to cut the high range, set this to Bypass.

[OUTPUT]

#Bal (Effect Balance)
           Dry100, Effect 0–Dry 0, Effect100 [16]

Adjusts the volume balance between the direct and the processed sound.

L Gain (Low Gain)   **-12–+12(dB) [17]**

Adjusts the gain of the low frequency range.

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H Gain (High Gain) -12–+12(dB) [18]

Adjusts the gain of the high frequency range.

Output Level 0–127 [20]

Adjusts the output level.

P-24: 4 Tap Delay (Quadruple tap delay) [01H, 53H]

The Quadruple Tap Delay has four delays.
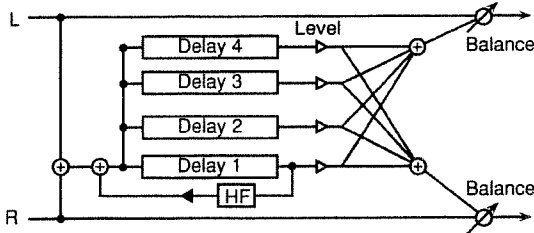
TIME-LEVEL-FB-OUTPUT

[TIME]

Time1 (Delay Time 1) 200–990m(s)/1sec [1]

Adjusts the time delay from the direct sound until delay 1 sound is heard.

Time2 (Delay Time 2) 200–990m(s)/1sec [2]

Adjusts the time delay from the direct sound until delay 2 sound is heard.

Time3 (Delay Time 3) 200–990m(s)/1sec [3]

Adjusts the time delay from the direct sound until delay 3 sound is heard.

Time4 (Delay Time 4) 200–990m(s)/1sec [4]

Adjusts the time delay from the direct sound until delay 4 sound is heard.

[Level]

Level1 (Delay Level 1) 0–127 [5]

Adjusts the volume of delay 1 sound.

Level2 (Delay Level 2) 0–127 [6]

Adjusts the volume of delay 2 sound.

Level3 (Delay Level 3) 0–127 [7]

Adjusts the volume of delay 3 sound.

Level4 (Delay Level 4) 0–127 [8]

Adjusts the volume of delay 4 sound.

[FB]

+Feedback Level -98%–+98% [9]

Adjusts the proportion (%) of the Delay 1 sound that is fed back into the effect. Negative (-) settings will invert the phase.

HF Damp 315Hz–8kHz/Bypass [10]

This adjusts the frequency at which the high range is cut when the Delay 1 sound is returned to the input. If you do not wish to cut the high range, set this to Bypass.

[OUTPUT]

#Bal (Effect Balance)

Dry100, Effect 0–Dry 0, Effect100 [16]

Adjusts the volume balance between the direct and the processed sound.

L Gain (Low Gain) -12–+12(dB) [17]

Adjusts the gain of the low frequency range.

H Gain (High Gain) -12–+12(dB) [18]

Adjusts the gain of the high frequency range.

Output Level 0–127 [20]

Adjusts the output level.

P-25: Time Ctrl Delay (Time control delay) [01H, 54H]

This effect allows you to use a specified controller (the controller selected in Control Source display (p. 51) to control the delay time and pitch in real time. Lengthening the delay time will lower the pitch, and shortening it will raise the pitch.
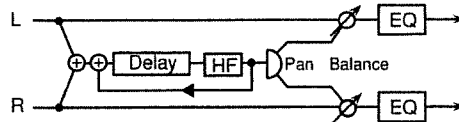
TC DLY-FB-OUTPUT

[TC DLY]

+Delay Time 200–990msec/1sec [1]

Adjusts the time delay from the direct sound until each delay sound is heard.

Acceleration 0–15 [2]

This parameter adjusts the speed over which the Delay Time will change from the current setting to a newly specified setting. The rate of change for the Delay Time directly affects the rate of pitch change.

Effect Pan (Effect output pan) L63–0–R63 [5]

Adjusts the stereo location of the processed sound. L63 is far left, 0 is center, and R63 is far right.

[FB]

#Feedback Level -98%–+98% [3]

Adjusts the proportion (%) of the processed sound that is fed back into the effect. Negative (-) settings will invert the phase.

HF Damp 315Hz–8kHz/Bypass [4]

Adjusts the frequency above which sound fed back to the effect will be cut. If you do not wish to cut the high frequencies of the feedback, set this parameter to Bypass.

[OUTPUT]

Bal (Effect Balance)

Dry100, Effect 0–Dry 0, Effect100 [16]

Adjusts the volume balance between the direct and the processed sound.

L Gain (Low Gain) -12–+12(dB) [17]

Adjusts the gain of the low frequency range.

H Gain (High Gain) -12–+12(dB) [18]

Adjusts the gain of the high frequency range.

Output Level 0–127 [20]

Adjusts the output level.

P-26: Reverb [01H, 55H]

The Reverb effect adds reverberation to the sound, simulating an acoustic space.
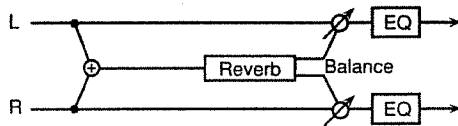
REVERB-OUTPUT

[REVERB]

Type (Reverb Type)

Room 1/Room 2/Stage 1/Stage 2/Hall 1/Hall 2 [1]

Selects the type of Reverb effect.

Room 1: dense reverb with short decay

Room 2: sparse reverb with short decay

Stage 1: reverb with greater late reverberation

Stage 2: reverb with strong early reflections

Hall 1: reverb with clear reverberation

Hall 2: reverb with rich reverberation

+Time (Reverb Time) 0–127 [3]

Adjusts the time length of reverberation.

PreDelay Time 0–100msec [2]

Adjusts the time delay from when the direct sound begins until the reverb sound is heard.

HF Damp 315Hz–8kHz/Bypass [4]

Adjusts the frequency above which the reverberant sound will be cut. As the frequency is set lower, more of the high frequencies will be cut, resulting in a softer and more muted reverberation. If you do not want the high frequencies to be cut, set this parameter to Bypass.

[OUTPUT]

#Bal (Effect Balance)

Dry100, Effect 0–Dry 0, Effect100 [16]

Adjusts the volume balance between the direct and the processed sound.

L Gain (Low Gain) -12–+12(dB) [17]

Adjusts the gain of the low frequency range.

H Gain (High Gain) -12–+12(dB) [18]

Adjusts the gain of the high frequency range.

Output Level 0–127 [20]

Adjusts the output level.

P-27: Gate Reverb [01H, 56H]

Gate Reverb is a special type of reverb in which the reverberant sound is cut off before its natural length.
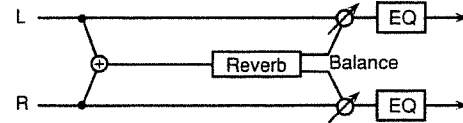
GATE REVERB-OUTPUT

[GATE REVERB]

Reverb Type (Gate Reverb Type)

Norm/Reverse/Sweep1/Sweep2 [1]

Selects the type of reverb.

Norm: conventional gate reverb

Reverse: backwards reverb

Sweep1: the reverberant sound moves from right to left

Sweep2: the reverberant sound moves from left to right

PreDelay Time 0–100msec [2]

Adjusts the time delay from when the direct sound begins until the reverb sound is heard.

Gate Time 5–500msec [3]

Adjusts the time from when the reverb is heard until it disappears.

[OUTPUT]

+Bal (Effect Balance)

Dry100, Effect 0–Dry 0, Effect100 [16]

Adjusts the volume balance between the direct and the processed sound.

L Gain (Low Gain) -12–+12(dB) [17]

Adjusts the gain of the low frequency range.

H Gain (High Gain) -12–+12(dB) [18]

Adjusts the gain of the high frequency range.

#Output Level 0–127 [20]

Adjusts the output level.

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P-28: 3D Delay   [01H, 57H]

This applies a 3D effect to the delay sound. The delay sound will be positioned 90 degrees left and 90 degrees right.
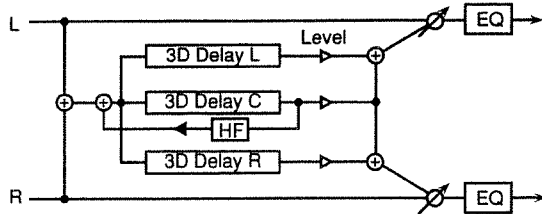
TIME-LEVEL-FB-MODE-OUT

[TIME]

DelayTimeCenter   **0–500ms [1]**
Adjusts the time from the original sound until the center delay sound begins.

DelayTime Left   **0–500ms [2]**
Adjusts the time from the original sound until the left delay sound begins.

DelayTime Right   **0–500ms [3]**
Adjusts the time from the original sound until the right delay sound begins.

[LEVEL]

Delay LevelCenter   **0–127 [5]**
Adjusts the volume of the center delay sound.

Delay Level Left   **0–127 [6]**
Adjusts the volume of the left delay sound.

Delay Level Right   **0–127 [7]**
Adjusts the volume of the right delay sound.

[FB]

+Feedback Level (Delay Feedback Level) -98%–+98% [4]
Adjusts the amount (%) of the center delay sound that will be returned to the input. With negative (-) settings, the phase will be inverted.

HF Damp   **315Hz–8kHz/Bypass [8]**
This adjusts the frequency at which the high range is cut when the Center Delay sound is returned to the input. If you do not wish to cut the high range, set this to Bypass.

[MODE]

Output Mode   **Speaker/Phones [15]**
Specifies the method that will be used to hear the sound that is output to the OUTPUT jacks. The optimal 3D effect will be achieved if you select Speaker when using speakers, or Phones when using headphones (p. 53).

[OUTPUT]

#Bal (Effect Balance)
                    Dry100, Effect 0–Dry 0, Effect100 [16]
Adjusts the volume balance between the direct and the processed sound.

L Gain (Low Gain)   **-12–+12(dB) [17]**
Adjusts the gain of the low frequency range.

H Gain (High Gain)   **-12–+12(dB) [18]**
Adjusts the gain of the high frequency range.

Output Level   **0–127 [20]**
Adjusts the output level.

● Effects that modify the pitch (pitch shift type)

P-29: 2 Pitch Shifter (2-voice pitch shifter)   [01H, 60H]

A Pitch Shifter shifts the pitch of the original sound. This 2-voice pitch shifter has two pitch shifters, and can add two pitch shifted sounds to the original sound.
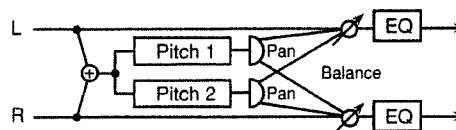
PITCH-DLY-PAN-BAL-OUT

[PITCH]

+Coarse 1 (Coarse Pitch 1)   **-24–0–+12 [1]**
Adjusts the pitch of Pitch Shift 1 in semitone steps (-2–+1 octaves).

#Coarse 2 (Coarse Pitch 2)   **-24–0–+12 [5]**
Adjusts the pitch of Pitch Shift 2 in semitone steps (-2–+1 octaves).

Fine1 (Fine Pitch 1)   **-100–0–+100 [2]**
Makes fine adjustments to the pitch of Pitch Shift 1 in 2-cent steps (-100–+100 cents).

Fine2 (Fine Pitch 2)   **-100–0–+100 [6]**
Makes fine adjustments to the pitch of Pitch Shift 2 in 2-cent steps (-100–+100 cents).

[DLY]

PreDelay Time 1   **0–100ms [3]**
Adjusts the time delay from when the direct sound begins until the Pitch Shift 1 sound is heard.

PreDelay Time 2   **0–100ms [7]**
Adjusts the time delay from when the direct sound begins until the Pitch Shift 2 sound is heard.

Pitch Shifter Mode   **1–5 [9]**
Higher settings of this parameter will result in slower response, but steadier pitch.

[PAN]

Effect Outputpan1   L63–0–R63 [4]

Adjusts the stereo location of the Pitch Shift 1 sound. L63 is far left, 0 is center, and R63 is far right.

Effect Outputpan2   L63–0–R63 [8]

Adjusts the stereo location of the Pitch Shift 2 sound. L63 is far left, 0 is center, and R63 is far right.

[BAL]

Level Balance   A> 0B–A 0<B [10]

Adjusts the volume balance between the Pitch Shift 1 and Pitch Shift 2 sounds.

[OUT]

Bal (Effect Balance)

      Dry100, Effect 0–Dry 0, Effect100 [16]

Adjusts the volume balance between the direct and the processed sound.

L Gain (Low Gain)   -12–+12(dB) [17]

Adjusts the gain of the low frequency range.

H Gain (High Gain)   -12–+12(dB) [18]

Adjusts the gain of the high frequency range.

Output Level   0–127 [20]

Adjusts the output level.

P-30: Fb Pitch Shifter (Feedback pitch shifter) [01H, 61H]

This pitch shifter allows the pitch shifted sound to be returned into the effect.
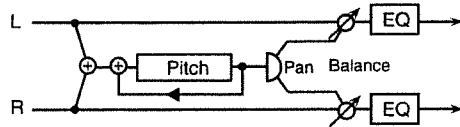
PITCH-DLY-FB-PAN-OUT

[PITCH]

+Coarse Pitch   -24–0–+12 [1]

Adjusts the pitch of the pitch shifted sound in semitone steps (-2–+1 octaves).

Fine Pitch   -100–0–+100 [2]

Makes fine adjustments to the pitch of the pitch shifted sound in 2-cent steps (-100–+100 cents).

[DLY]

PreDelay Time   0–100msec [4]

Adjusts the time delay from when the direct sound begins until the pitch shifted sound is heard.

Pitch Shifter Mode   1–5 [5]

Higher settings of this parameter will result in slower response, but steadier pitch.

[FB]

#Feedback Level   -98%–+98% [3]

Adjusts the proportion (%) of the processed sound that is fed back into the effect. Negative (-) settings will invert the phase.

[PAN]

Effect Output Pan   L63–0–R63 [6]

Adjusts the stereo location of the pitch shifted sound. L63 is far left, 0 is center, and R63 is far right.

[OUT]

Bal (Effect Balance)

      Dry100, Effect 0–Dry 0, Effect100 [16]

Adjusts the volume balance between the direct and the processed sound.

L Gain (Low Gain)   -12–+12(dB) [17]

Adjusts the gain of the low frequency range.

H Gain (High Gain)   -12–+12(dB) [18]

Adjusts the gain of the high frequency range.

Output Level   0–127 [20]

Adjusts the output level.

● Others

P-31: 3D Auto [01H, 70H]

The 3D Auto effect rotates the location of the sound.
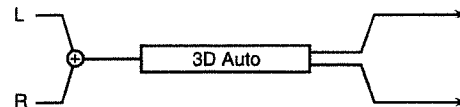
ROTATION-OUTPUT

[ROTATION]

Azimuth   180/L168–0–R168 [1]

Sets the location at which the sound will stop when rotation is stopped.

A setting of 0 positions the sound in the center.

+Speed   0.05–10.0Hz [2]

Sets the speed of rotation.

Clockwise   -/+ [3]

Sets the direction of rotation. A setting of "-" is counter-clockwise, and "+" is clockwise.

#Turn   Off/On [4]

This stops or starts the rotation. When this is turned On, the sound will rotate. When turned Off, rotation will stop at the location specified by Azimuth.

[OUTPUT]

Output Mode   **Speaker/Phones [15]**

Specifies the method that will be used to hear the sound that is output to the OUTPUT jacks. The optimal 3D effect will be achieved if you select Speaker when using speakers, or Phones when using headphones (p. 53).

Output Level   **0–127 [20]**

Adjusts the output level.

P-32: 3D Manual   [01H, 71H]

This places the 3D effect at a desired location.
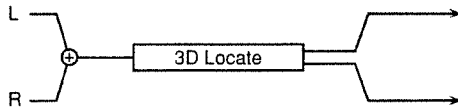
AZIMUTH-OUTPUT

[Azimuth]

+Azimuth   **180/L168–0–R168 [1]**

Specifies the location.
A setting of 0 positions the sound in the center.

[OUTPUT]

Output Mode   **Speaker/Phones [15]**

Specifies the method that will be used to hear the sound that is output to the OUTPUT jacks. The optimal 3D effect will be achieved if you select Speaker when using speakers, or Phones when using headphones (p. 53).

#Output Level   **0–127 [20]**

Adjusts the output level.

P-33: Lo-Fi 1   [01H, 72H]

Lo-Fi 1 is an effect that intentionally degrades the sound quality.
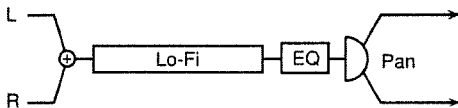
LOFI-OUTPUT

[LOFI]

Pre Filter Type   **1–6 [1]**

Specifies the type of filter that will be applied before the sound passes through the Lo-Fi effect.

Lo-Fi Type   **1–9 [2]**

Degrade the sound quality. The sound quality will become poorer as this value is increased.

Post Filter Type   **1–6 [3]**

Specifies the type of filter that will be applied after the sound passes through the Lo-Fi effect.

[OUTPUT]

+Bal (Effect Balance)
           Dry100, Effect 0–Dry 0, Effect100 [16]

Adjusts the volume balance between the direct and the processed sound.

L Gain (Low Gain)   **-12–+12(dB) [17]**

Adjusts the gain of the low frequency range.

H Gain (High Gain)   **-12–+12(dB) [18]**

Adjusts the gain of the high frequency range.

#Pan (Output Pan)   **L63–0–R63 [19]**

Adjusts the stereo location of the output sound. L63 is far left, 0 is center, and R63 is far right.

Level (Output Level)   **0–127 [20]**

Adjusts the output level.

P-34: Lo-Fi 2   [01H, 73H]

Lo-Fi 2 is an effect that intentionally degrades the sound quality and allows a variety of noise to be added

* *If the Radio Detune, W/P Noise Level (White/Pink Noise Level), Disc Noise Level, or Hum Level settings are raised, there will be noise even when the input sound is silent.*
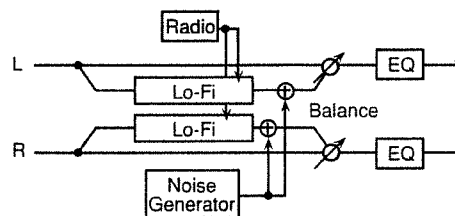
LOFI-RD-WP-D-HM-MS-OUT

[LOFI]

Lo-Fi Type   **1–6 [1]**

Degrade the sound quality. The sound quality will become poorer as this value is increased.

Filter Type   **Off/LPF/HPF [2]**

Specifies the type of filter that is applied after the sound passes through the Lo-Fi effect.

Cutoff Freq.(Cutoff Frequency)   **250Hz–8KHz [3]**

Specifies the cutoff frequency of the filter that is applied after the sound passes through the Lo-Fi effect.

[RD]

+Radio Detune   **0–127 [4]**

This simulates the tuning noise of a radio. As this value is raised, the tuning will drift further.

Radio Noise Level   0–127 [5]

Adjusts the volume of the radio noise.

[WP]

White/Pink Sel (White/Pink Noise Select)   White/Pink [6]

Select either white noise or pink noise.

W/P LPF (White/Pink Noise LPF)

250–6.3K(Hz)/Bypass [7]

Specifies the cutoff frequency of the low pass filter that is applied to the white noise or pink noise.

W/P Noise Level (White/Pink Noise Level)   0–127 [8]

Specifies the volume of the white noise or pink noise.

[D]

Disc Noise Type   LP/EP/SP/RND [9]

Selects the type of record noise. The frequency at which the noise is heard will depend on the selected type.

Disc Noise LPF   250–6.3K(Hz)/Bypass [10]

Specifies the cutoff frequency of the low pass filter that is applied to the record noise.

Disc Noise Level   0–127 [11]

Specifies the volume of the record noise.

[HM]

Hum Noise Type   50/60Hz [12]

Selects the type of hum noise.

Hum Noise LPF   250–6.3K(Hz)/Bypass [13]

Specifies the cutoff frequency of the low pass filter that is applied to the hum noise.

Hum Noise Level   0–127 [14]

Specifies the volume of the hum noise.

[MS]

Mono/Stereo Sw (Mono/Stereo Switch) Mono/Stereo [15]

Select whether the effect sound will be monaural or stereo.

Output Pan (Mono)   L63–0–R63 [19]

When Mono mode is used, adjust the stereo location of the output sound. L63 is far left, 0 is center, and R63 is far right.

[OUT]

#Bal (Effect Balance)

Dry100, Effect 0–Dry 0, Effect100 [16]

Adjusts the volume balance between the direct and the processed sound.

L Gain (Low Gain)   -12–+12(dB) [17]

Adjusts the gain of the low frequency range.

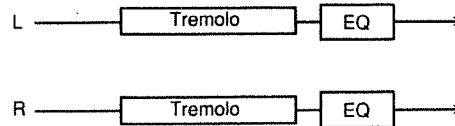**H Gain (High Gain)   -12–+12(dB) [18]**

Adjusts the gain of the high frequency range.

Output Level   0–127 [20]

Adjusts the output level.

■ Multiple Effects Connected in Series

● Effects consisting of two effects connected in series (series 2)

P-35: OD → Chorus (Overdrive → Chorus)   [02H, 00H]

This effect connects an overdrive and a chorus in series.
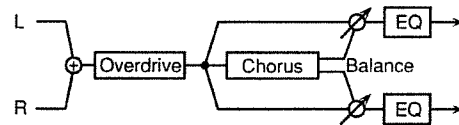
OD-CHORUS-OUTPUT

[OD]

Drive (Overdrive Drive)   0–127 [1]

Adjusts the degree of overdrive distortion. The volume will change together with the degree of distortion.

+Pan (Overdrive Drive Output Pan)   L63–0–R63 [2]

Adjusts the stereo location of the overdrive sound. L63 is far left, 0 is center, and R63 is far right.

Amp Type (Overdrive Amp Simulator Type)

Small/Built-in/Double Stack/Triple Stack [3]

Selects the type of guitar amp.

Small: small amp
Built-in: single-unit type amp
Double Stack:large double stack amp
Triple Stack: large triple stack amp

Amp Switch (Overdrive Amp Switch)   Off/On [4]

Turns OD Amp on/off.

[CHORUS]

PreDelay Time (Chorus Pre Delay Time)   0–100msec [6]

Adjusts the time delay from when the direct sound begins until the chorus sound is heard.

Rate (Chorus Rate)   0.05–10.0(Hz) [7]

Adjusts the modulation speed of the chorus effect.

Depth (Chorus Depth)   0–127 [8]

Adjusts the modulation depth of the chorus effect.

#Bal (Chorus Balance)

Dry100, Chorus 0–Dry 0, Chorus100 [10]

Adjusts the volume balance between the sound that's been routed through the chorus versus that which hasn't. With a setting of "Dry100, Chorus 0," only the overdrive sound will be output, and with a setting of "Dry 0, Chorus100," the overdrive sound that's been routed through the chorus will be output.

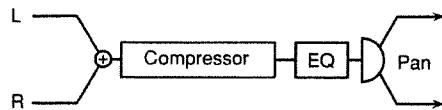**Chapter 5**

[OUTPUT]

Low Gain -12–+12(dB) [17]
Adjusts the low frequency gain.

High Gain -12–+12(dB) [18]
Adjusts the high frequency gain.

Output Level 0–127 [20]
Adjusts the output level.

P-36: OD ▸ Flanger (Overdrive ▸ Flanger) [02H, 01H]

This effect connects an overdrive and a flanger in series.
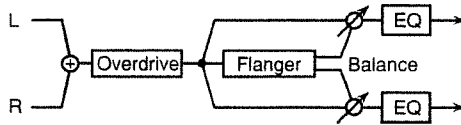
OD-FLANGER-OUTPUT

[OD]

Drive (Overdrive Drive) 0–127 [1]
Adjusts the degree of overdrive distortion. The volume will change together with the degree of distortion.

+Pan (Overdrive Output Pan) L63–0–R63 [2]
Adjusts the stereo location of the overdrive sound. L6 is far left, 0 is center, and R63 is far right.

Amp Type (Overdrive Amp Simulator Type)
Small/Built-in/Double Stack/Triple Stack [3]
Selects the type of guitar amp.
Small: small amp
Built-in: single-unit type amp
Double Stack:large double stack amp
Triple Stack: large triple stack amp

Amp Switch (Overdrive Amp Switch) Off/On [4]
Turns OD Amp on/off.

[FLANGER]

PreDly (Flanger Pre Delay) 0–100m(s) [6]
Adjusts the time delay from when the direct sound begins until the flanger sound is heard.

Rate (Flanger Rate) 0.05–10.0(Hz) [7]
Adjusts the modulation speed of the flanger effect.

Depth (Flanger Depth) 0–127 [8]
Adjusts the modulation depth of the flanger effect.

Fb (Flanger Feedback Level) -98%–+98% [9]
Adjusts the proportion (%) of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.

#Bal (Flanger Balance)
Dry100, Flanger 0 –Dry 0, Flanger100 [10]
Adjusts the volume balance between the sound that's been routed through the flanger versus that which hasn't. With a setting of "Dry100, Flanger 0," only the overdrive sound will be output, and with a setting of "Dry 0, Flanger100," the overdrive sound that's been routed through the flanger will be output.

[OUTPUT]

Low Gain -12–+12(dB) [17]
Adjusts the low frequency gain.

**High Gain** -12–+12(dB) [18]
Adjusts the high frequency gain.

Output Level 0–127 [20]
Adjusts the output level.

P-37: OD ▸ Delay (Overdrive ▸ Delay) [02H, 02H]

This effect connects an overdrive and a delay in series.
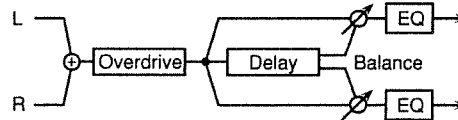
OD-DELAY-OUTPUT

[OD]

Drive (Overdrive Drive) 0–127 [1]
Adjusts the degree of overdrive distortion. The volume will change together with the degree of distortion.

+Pan (Overdrive Output Pan) L63–0–R63 [2]
Adjusts the stereo location of the overdrive sound. L63 is far left, 0 is center, and R63 is far right.

Amp Type (Overdrive Amp Simulator Type)
Small/Built-in/Double Stack/Triple Stack [3]
Selects the type of guitar amp.
Small: small amp
Built-in: single-unit type amp
Double Stack:large double stack amp
Triple Stack: large triple stack amp

Amp Switch (Overdrive Amp Switch) Off/On [4]
Turns OD Amp on/off.

[DELAY]

Time (Delay Time) 0–500ms [6]
Adjusts the time delay from when the direct sound begins until the delay sound is heard.

Fb (Delay Feedback Level)   -98%–+98% [7]

Adjusts the proportion (%) of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.

HF (Delay HF Damp)   315Hz–8kHz/Bypass [8]

Adjusts the frequency above which delayed sound fed back to the effect will be cut. If you do not wish to cut the high frequencies of the feedback, set this parameter to Bypass.

#Bal (Delay Balance)

Dry100, Delay 0–Dry 0, Delay100 [10]

Adjusts the volume balance between the sound that's been routed through the delay versus that which hasn't. With a setting of "Dry100, Delay 0, only the overdrive sound will be output, and with a setting of "Dry 0, Delay100," the overdrive sound that's been routed through the delay will be output.

[OUTPUT]

Low Gain   -12–+12(dB) [17]

Adjusts the low frequency gain.

High Gain   -12–+12(dB) [18]

Adjusts the high frequency gain.

Output Level   0–127 [20]

Adjusts the output level.

P-38: DS → Chorus (Distortion → Chorus)   [02H, 03H]

This effect connects a distortion and a chorus in series.
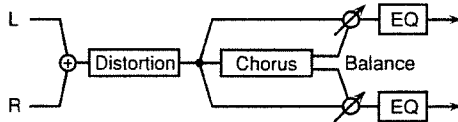
DS-CHORUS-OUTPUT

[DS]

Drive (Distortion Drive)   0–127 [1]

Adjusts the degree of distortion. The volume will change together with the degree of distortion.

+Pan (Distortion Output Pan)   L63–0–R63 [2]

Adjusts the stereo location of the distortion sound. L63 is far left, 0 is center, and R63 is far right.

Amp Type (Distortion Amp Simulator Type)

Small/Built-in/Double Stack/Triple Stack [3]

Selects the type of guitar amp.

Small: small amp
Built-in: single-unit type amp
Double Stack:large double stack amp
Triple Stack: large triple stack amp

Amp Switch (Distortion Amp Switch)   Off/On [4]

Turns DS Amp on/off.

[CHORUS]

PreDelay Time (Chorus Pre Delay Time)   0–100msec [6]

Adjusts the time delay from when the direct sound begins until the chorus sound is heard.

Rate (Chorus Rate)   0.05–10.0(Hz) [7]

Adjusts the modulation speed of the chorus effect.

Depth (Chorus Depth)   0–127 [8]

Adjusts the modulation depth of the chorus effect.

#Bal (Chorus Balance)

Dry100, Chorus 0–Dry 0, Chorus100 [10]

Adjusts the volume balance between the sound that's been routed through the chorus versus that which hasn't. With a setting of "Dry100, Chorus 0," only the distortion sound will be output, and with a setting of "Dry 0, Chorus100," the distortion sound that's been routed through the chorus will be output.

[OUTPUT]

Low Gain   -12–+12(dB) [17]

Adjusts the low frequency gain.

High Gain   -12–+12(dB) [18]

Adjusts the high frequency gain.

Output Level   0–127 [20]

Adjusts the output level.

P-39: DS → Flanger (Distortion → Flanger)   [02H, 04H]

This effect connects a distortion and a flanger in series.
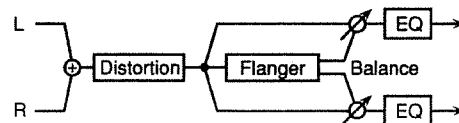
DS-FLANGER-OUTPUT

[DS]

Drive (Distortion Drive)   0–127 [1]

Adjusts the degree of distortion. The volume will change together with the degree of distortion.

+Pan (Distortion Output Pan)   L63–0–R63 [2]

Adjusts the stereo location of the distortion sound. L63 is far left, 0 is center, and R63 is far right.

Amp Type (Distortion Amp Simulator Type)

Small/Built-in/Double Stack/Triple Stack [3]

Selects the type of guitar amp.

Small: small amp
Built-in: single-unit type amp
Double Stack:large double stack amp
Triple Stack: large triple stack amp

Amp Switch (Distortion Amp Switch)   Off/On [4]

Turns DS Amp on/off.

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[FLANGER]

PreDly (Flanger Pre Delay)   0–100m(sec) [6]
Adjusts the time delay from when the direct sound begins until the flanger sound is heard.

Rate (Flanger Rate)   0.05–10.0(Hz) [7]
Adjusts the modulation speed of the flanger effect.

Depth (Flanger Depth)   0–127 [8]
Adjusts the modulation depth of the flanger effect.

Fb (Flanger Feedback Level)   -98%–+98% [9]
Adjusts the proportion (%) of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.

#Bal (Flanger Balance)
                  Dry100, Flanger 0–Dry 0, Flanger100 [10]
Adjusts the volume balance between the sound that's been routed through the flanger versus that which hasn't. With a setting of "Dry100, Flanger 0," only the distortion sound will be output, and with a setting of "Dry 0, Flanger100," the distortion sound that's been routed through the flanger will be output.

[OUTPUT]

Low Gain   -12–+12(dB) [17]
Adjusts the low frequency gain.

High Gain   -12–+12(dB) [18]
Adjusts the high frequency gain.

Output Level   0–127 [20]
Adjusts the output level.

P-40: DS → Delay (Distortion → Delay [02H, 05H]

This effect connects a distortion and a delay in series.
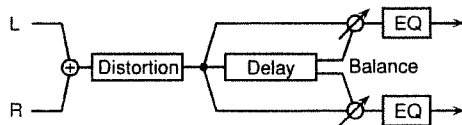
DS-DELAY-OUTPUT

[DS]

Drive (Distortion Drive)   0–127 [1]
Adjusts the degree of distortion. The volume will change together with the degree of distortion.

+Pan (Distortion Output Pan)   L63–0–R63 [2]
Adjusts the stereo location of the distortion sound. L63 is far left, 0 is center, and R63 is far right.

Amp Type (Distortion Amp Simulator Type)
                  Small/Built-in/Double Stack/Triple Stack [3]
Selects the type of guitar amp.
> Small: small amp
> Built-in: single-unit type amp

Double Stack: large double stack amp
Triple Stack: large triple stack amp

Amp Switch (Distortion Amp Switch)   Off/On [4]
Turns DS Amp on/off.

[DELAY]

Time (Delay Time)   0–500ms [6]
Adjusts the time delay from when the direct sound begins until the delay sound is heard.

Fb (Delay Feedback Level)   -98%–+98% [7]
Adjusts the proportion (%) of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.

HF Damp (Delay HF Damp)   315Hz–8kHz/Bypass [8]
Adjusts the frequency above which delayed sound fed back to the effect will be cut. If you do not wish to cut the high frequencies of the feedback, set this parameter to Bypass.

#Bal (Delay Balance)
                  Dry100, Delay 0–Dry 0, Delay100 [10]
Adjusts the volume balance between the sound that's been routed through the delay versus that which hasn't. With a setting of "Dry100, Delay 0", only the distortion sound will be output, and with a setting of "Dry 0, Delay100," the distortion sound that's been routed through the delay will be output.

[OUTPUT]

Low Gain   -12–+12(dB) [17]
Adjusts the low frequency gain.

High Gain   -12–+12(dB) [18]
Adjusts the high frequency gain.

Output Level   0–127 [20]
Adjusts the output level.

P-41: EH → Chorus (Enhancer → Chorus) [02H, 06H]

This effect connects an enhancer and a chorus in series.
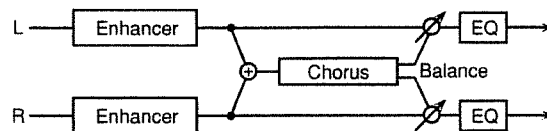
ENHANCER-CHORUS-OUTPUT

[ENHANCER]

+Sensitivity (Enhancer Sensitivity)   0–127 [1]
Adjusts the sensitivity of the enhancer.

Mix Level (Enhancer Mix Level)   0–127 [2]
Adjusts the ratio by which the overtones generated by the enhancer are combined with the direct sound.

PreDelay Time (Chorus Pre Delay)   0–100msec [6]

Adjusts the time delay from when the direct sound begins until the chorus sound is heard.

Rate (Chorus Rate)   0.05–10.0(Hz) [7]

Adjusts the modulation speed of the chorus effect.

Depth (Chorus Depth)   0–127 [8]

Adjusts the modulation depth of the chorus effect.

#Bal (Chorus Balance)

Dry100, Chorus 0–Dry 0, Chorus100 [10]

Adjusts the volume balance between the sound that's been routed through the chorus versus that which hasn't. With a setting of "Dry100, Chorus 0," only the enhancer sound will be output, and with a setting of "Dry 0, Chorus100," the enhancer sound that's been routed through the chorus will be output.

[OUTPUT]

Low Gain   -12–+12(dB) [17]

Adjusts the low frequency gain.

High Gain   -12–+12(dB) [18]

Adjusts the high frequency gain.

Output Level   0–127 [20]

Adjusts the output level.

P-42: EH → Flanger (Enhancer → Flanger)   [02H, 07H]

This effect connects an enhancer and a flanger in series.
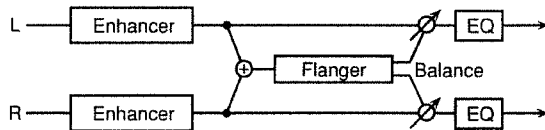
ENHANCER-FLANGER-OUT

[ENHANCER]

+Sensitivity (Enhancer Sensitivity)   0–127 [1]

Adjusts the sensitivity of the enhancer.

Mix Level (Enhancer Mix Level)   0–127 [2]

Adjusts the ratio by which the overtones generated by the enhancer are combined with the direct sound.

[FLANGER]

PreDly (Flanger Pre Delay)   0–100m(s) [6]

Adjusts the time delay from when the direct sound begins until the flanger sound is heard.

Rate (Flanger Rate)   0.05–10.0(Hz) [7]

Adjusts the modulation speed of the flanger effect.

Depth (Flanger Depth)   0–127 [8]

Adjusts the modulation depth of the flanger effect.

Fb (Flanger Feedback Level)   -98%–+98% [9]

Adjusts the proportion (%) of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.

#Bal (Flanger Balance)

Dry100, Flnger 0–Dry 0, Flnger100 [10]

Adjusts the volume balance between the sound that's been routed through the flanger versus that which hasn't. With a setting of "Dry100, Flnger 0," only the enhancer sound will be output, and with a setting of "Dry 0, Flnger100," the enhancer sound that's been routed through the flanger will be output.

## [OUT]

Low Gain   -12–+12(dB) [17]

Adjusts the low frequency gain.

High Gain   -12–+12(dB) [18]

Adjusts the high frequency gain.

Output Level   0–127 [20]

Adjusts the output level.

## P-43: EH → Delay (Enhancer → Delay) [02H, 08H]

This effect connects an enhancer and a delay in series.
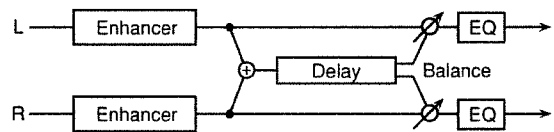
ENHANCER-DELAY-OUTPUT

[ENHANCER]

+Sensitivity (Enhancer Sensitivity)   0–127 [1]

Adjusts the sensitivity of the enhancer.

Mix Level (Enhancer Mix Level)   0–127 [2]

Adjusts the ratio by which the overtones generated by the enhancer are combined with the direct sound.

[DELAY]

Time (Delay Time)   0–500(ms) [6]

Adjusts the time delay from when the direct sound begins until the delay sound is heard.

Fb (Delay Feedback Level)   -98%–+98% [7]

Adjusts the proportion (%) of the delay sound that is fed back into the delay input. Negative (-) settings will invert the phase.

HF Damp (Delay HF Damp)   315Hz–8kHz/Bypass [8]

Adjusts the frequency above which delayed sound fed back to the delay input will be cut. If you do not wish to cut the high frequencies of the delay feedback, set this parameter to Bypass.

#Bal (Delay Balance)

                    Dry100, Delay 0–Dry 0, Delay100[10]

Adjusts the volume balance between the sound that's been routed through the delay versus that which hasn't. With a setting of "Dry100, Delay 0," only the enhancer sound will be output, and with a setting of "Dry100, Delay 0," the enhancer sound that's been routed through the delay will be output.

[OUTPUT]

Low Gain   -12–+12(dB) [17]

Adjusts the low frequency gain.

High Gain   -12–+12(dB) [18]

Adjusts the high frequency gain.

Output Level   0–127 [20]

Adjusts the output level.

P-44: Chorus → Delay   [02H, 09H]

This effect connects a chorus and a delay unit in series.

CHORUS-DELAY-OUTPUT

[CHORUS]

PreDelay Time (Chorus Pre Delay)   0–100msec [1]

Adjusts the time delay from when the direct sound begins until the chorus sound is heard.

Rate (Chorus Rate)   0.05–10.0(Hz) [2]

Adjusts the modulation speed of the chorus effect.

Depth (Chorus Depth)   0–127 [3]

Adjusts the modulation depth of the chorus effect.

+Bal (Chorus Balance)

                    Dry100, Chorus 0–Dry 0, Chorus100 [5]

Adjusts the volume balance between the direct sound and the chorus sound. With a setting of "Dry100, Chorus 0," only the direct sound will be output. With a setting of "Dry 0, Chorus100," only the chorus sound will be output.

[DELAY]

Time (Delay Time)   0–500ms [6]

Adjusts the time delay from when the direct sound begins until the delay sound is heard.

Fb (Delay Feedback Level)   -98%–+98% [7]

Adjusts the proportion (%) of the delay sound that is fed back into the delay input. Negative (-) settings will invert the phase.

HF Damp (Delay HF Damp)   315Hz–8kHz/Bypass [8]

Adjusts the frequency above which delayed sound fed back to the delay input will be cut. If you do not wish to cut the high frequencies of the feedback, set this parameter to Bypass.

#Bal (Delay Balance)

                    Dry100, Delay 0–D 0, Chorus100 [10]

Adjusts the volume balance between the sound that's been routed through the delay versus that which hasn't. With a setting of "Dry100, Delay 0", only the chorus sound will be output, and with a setting of "Dry 0, Chorus100," the chorus sound that's been routed through the delay will be output.

[OUTPUT]

Low Gain   -12–+12(dB) [17]

Adjusts the low frequency gain.

High Gain   -12–+12(dB) [18]

Adjusts the high frequency gain.

Output Level   0–127(dB) [20]

Adjusts the output level.

P-45: Flanger → Delay   [02H, 0AH]

This effect connects a flanger and a delay in series.

FLANGER-DELAY-OUTPUT

[FLANGER]

PreDly (Flanger Pre Delay)   0–100m(s) [1]

Adjusts the time delay from when the direct sound begins until the flanger sound is heard.

Rate (Flanger Rate)   0.05–10.0(Hz) [2]

Adjusts the modulation speed of the flanger effect.

Depth (Flanger Depth)   0–127 [3]

Adjusts the modulation depth of the flanger effect.

+Fb (Flanger Feedback Level)   -98%–+98% [4]

Adjusts the proportion (%) of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.

Bal (Flanger Balance)

                    Dry100, Flnger 0–Dry 0, Flnger100 [5]

Adjusts the volume balance between the direct sound and the flanger sound. With a setting of "Dry100, Flnger 0," only the direct sound will be output. With a setting of Dry 0, Flnger100," only the flanger sound will be output.

[DELAY]

Time (Delay Time)   0–500ms [6]

Adjusts the time delay from when the direct sound begins until the delay sound is heard.

Fb (Delay Feedback Level)   -98%–+98% [7]

Adjusts the proportion (%) of the delay sound that is fed back into the delay input. Negative (-) settings will invert the phase.

HF Damp (Delay HF Damp)   315Hz–8kHz/Bypass [8]

Adjusts the frequency above which delayed sound fed back to the delay input will be cut. If you do not wish to cut the high frequencies of the delay feedback, set this parameter to Bypass.

#Bal (Delay Balance)

Dry100, Delay 0–Dry 0, Delay100 [10]

Adjusts the volume balance between the sound that's been routed through the delay versus that which hasn't. With a setting of "Dry100, Delay 0," only the flanger sound will be output, and with a setting of "Dry 0, Delay100," the flanger sound that's been routed through the delay will be output.

[OUTPUT]

Low Gain   -12–+12(dB) [17]

Adjusts the low frequency gain.

High Gain   -12–+12(dB) [18]

Adjusts the high frequency gain.

Output Level   0–127 [20]

Adjusts the output level.

P-46: Chorus ► Flanger   [02H, 0BH]

This effect connects a chorus and a flanger in series.
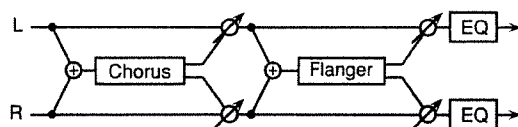
CHORUS-FLANGER-OUTPUT

[CHORUS]

PreDelay Time (Chorus Pre Delay)   0–100msec [1]

Adjusts the time delay from when the direct sound begins until the chorus sound is heard.

Rate (Chorus Rate)   0.05–10.0(Hz) [2]

Adjusts the modulation speed of the chorus effect.

Depth (Chorus Depth)   0–127 [3]

Adjusts the modulation depth of the chorus effect.

+Bal (Chorus Balance)

Dry100, Chorus 0–Dry 0, Chorus100 [5]

Adjusts the volume balance between the direct sound and the chorus sound. With a setting of "Dry100, Chorus 0," only the direct sound will be output. With a setting of "Dry 0, Chorus100," only the chorus sound will be output.

[FLANGER]

PreDly (Flanger Pre Delay Time)   0–100m(s) [6]

Adjusts the time delay from when the direct sound begins until the flanger sound is heard.

Rate (Flanger Rate)   0.05–10.0(Hz) [7]

Adjusts the modulation speed of the flanger effect.

Depth (Flanger Depth)   0–127 [8]

Adjusts the modulation depth of the flanger effect.

Fb (Flanger Feedback Level)   -98%–+98% [9]

Adjusts the proportion (%) of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.

#Bal (Flanger Balance)

Dry100, Finger 0–Dry 0, Finger100 [10]

Adjusts the volume balance between the sound that's been routed through the flanger versus that which hasn't. With a setting of "Dry100, Flnger 0", only the chorus sound will be output, and with a setting of "Dry 0, Fanger100," the chorus sound that's been routed through the flanger will be output.

[OUTPUT]

Low Gain   -12–+12(dB) [17]

Adjusts the low frequency gain.

High Gain   -12–+12(dB) [18]

Adjusts the high frequency gain.

Output Level   0–127 [20]

Adjusts the output level.

● Effects that connect three or more effects in series (series 3/series 4/series 5)

P-47: Rotary Multi   [03H, 00H]

This connects Overdrive (OD), 3-band equalizer (EQ), and Rotary (RT) effects in series.
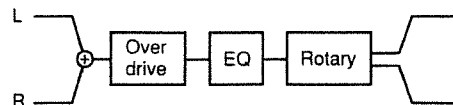
OD-EQ-RT L-RT H-SP-OUT

[OD]

+OD Drive   **0–127 [1]**
Adjusts the depth of distortion. The volume will change together with the depth of distortion.

Overdrive Switch   **Off/On [2]**
Turns the Overdrive effect on/off.

[EQ]

L Gain (EQ Low Gain)   **-12–+12(dB) [3]**
Adjusts the low range gain of the equalizer.

H Gain (EQ High Gain)   **-12–+12(dB) [7]**
Adjusts the high-range gain of the equalizer.

Mid Frequency (EQ Mid Frequency)   **200Hz–6.3kHz [4]**
Sets the center frequency for the equalizer mid-range.

Mid Q (EQ Mid Q)   **0.5/1.0/2.0/4.0/9.0 [5]**
Adjusts the width of the area centered at the Mid Frequency setting in which the gain will be affected. The area affected will become narrower as this value is increased.

MidGain (EQ Mid Gain)   **-12–+12(dB) [6]**
Adjusts the gain of the area specified by the Mid Frequency parameter and the Mid Q parameter.

[RT L]

Slow Rate (Rotary Low Frequency Slow Rate)
0.05–10.0Hz [8]
Adjusts the speed of the low-range rotor for the low-speed (Slow) setting.

Fast Rate (Rotary Low Frequency Fast Rate)
0.05–10.0Hz [9]
Adjusts the speed of the low-range rotor for the high-speed (Fast) setting.

Accel (Rotary Low Frequency Acceleration)   **0–15 [10]**
Adjusts the time over which the rotation speed of the low-range rotor will change from low-speed to high-speed (or high-speed to low-speed) rotation. Smaller values will require greater time to reach the new rotational speed.

Level (Rotary Low Frequency Level)   **0–127 [11]**
Adjusts the volume of the low-range rotor.

[RT H]

Slow Rate (Rotary High Frequency Slow Rate)
0.05–10.0Hz [12]
Adjusts the speed of the high-range rotor for the low-speed (Slow) setting.

Fast Rate (Rotary High Frequency Fast Rate)
0.05–10.0Hz [13]
Adjusts the speed of the high-range rotor for the high-speed (Fast) setting.

Accel (Rotary High Frequency Acceleration)   **0–15 [14]**
Adjusts the time over which the rotation speed of the high-range rotor will change from low-speed to high-speed (or high-speed to low-speed) rotation. Smaller values will require greater time to reach the new rotational speed.

Level (Rotary High Frequency Level)   **0–127 [15]**
Adjusts the volume of the high-range rotor.

[SP]

RT Separation (Rotary Separation)   **0–127 [16]**
Adjusts the spatial spread of the rotary sound.

#RT Speed (Rotary Speed)   **Slow/Fast [17]**
Simultaneously switch the rotational speed of both the low-range and the high-range rotors.

> Slow: Slow down the rotation to the specified speeds ([RT L] Slow Rate parameter/[RT H] Slow Rate parameter values).
>
> Fast: Speed up the rotation to the specified speeds ([RT L] Fast Rate parameter/[RT H] Fast Rate parameter values).

[OUT]

Output Level   **0–127 [20]**
Adjusts the output level.

P-48: Guitar Multi 1   [04H, 00H]

Guitar Multi 1 connects Compressor (Cmp), Overdrive or Distortion (OD), Chorus or Flanger (CF), and Delay (Dly) effects in series.
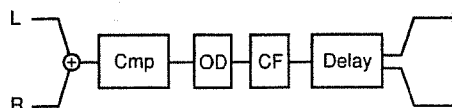
CMP-OD (EQ)-CF-DLY-OUT

[CMP]

Attack (Compressor Attack)   **0–127 [1]**
Adjusts the time over which the sound will rise after input.

Sustain (Compressor Sustain)   **0–127 [2]**
Adjusts the time over which low-level sounds are boosted until they reach a specified volume.
Increasing the value will shorten the time. When the value is modified, the level will also change.

Level (Compressor Level)   **0–127 [3]**
Adjusts the volume of the compressor sound.

Switch (Compressor Switch)   **Off/On [4]**
Turns the compressor on/off.

[OD]

OD Select   **Odrv/Dist [5]**
Select either Overdrive or Distortion.

+Drive   0–127 [6]

Adjusts the depth of distortion. The volume will change together with the depth of distortion.

OD Sw (OD Switch)   Off/On [11]

Turns Overdrive or Distortion on/off.

Amp (OD Amp Simulator Type)

Small/BltIn/2-Stk/3-Stk [7]

Selects the type of guitar amp.

Small: small amp

BltIn: single-unit type amp

2-Stk: large double stack amp

3-Stk: large triple stack amp

Amp Sw (OD Amp Switch)   Off/On [8]

Turns OD Amp on/off.

[EQ]

OD Low Gain   -12–+12(dB) [9]

Adjusts the low-range gain.

OD High Gain   -12–+12(dB) [10]

Adjusts the high-range gain.

[CF]

CF Select   Chorus/Flangr [12]

Select either Chorus or Flanger.

Rate   0.05–6.40(Hz) [13]

Adjusts the speed of modulation

Depth   0–127 [14]

Adjusts the depth of modulation.

Fb (CF Feedback)   -98%–+98% [15]

Adjusts the amount (%) of the flanger sound that is returned to the input. Negative (-) values will invert the phase.
In the case of Chorus, this will have no effect.

Mix (CF Mix)   0–127 [16]

Adjusts the volume of the chorus or flanger sound.

[DLY]

Delay Time   0–635msec [17]

Adjusts the time from the original sound until the delay sound is heard.

Fb (Delay Feedback Level)   0–127 [18]

Adjusts the amount of the delay sound that is returned to the input.

#Mix (Delay Mix)   0–127 [19]

Adjusts the volume of the delay sound.

[OUTPUT]

Output Level   0–127 [20]

Adjusts the output level.

P-49: Guitar Multi 2   [04H, 01H]

Guitar Multi 2 provides Compressor (Cmp), Overdrive or Distortion (OD), Equalizer (EQ), and Chorus or Flanger (CF) effects connected in series.

CMP-OD-EQ-CF-OUTPUT

[CMP]

Attack (Compressor Attack)   0–127 [1]

Adjusts the time over which the sound will rise after it is input.

Sustain (Compressor Sustain)   0–127 [2]

Adjusts the time over which low-level sounds are boosted until they reach a specified volume.
Increasing the value will shorten the time. When the value is modified, the level will also change.

Level (Compressor Level)   0–127 [3]

Adjusts the volume of the compressor sound.

Switch (Compressor Switch)   Off/On [4]

Turns the compressor on/off.

[OD]

OD Select (OD Select)   Odrv/Dist [5]

Select either Overdrive or Distortion.

+Drive (OD Drive)   0–127 [6]

Adjusts the depth of distortion. The volume will change together with the depth of distortion.

OD Sw (OD Switch)   Off/On [9]

Turns Overdrive or Distortion on/off.

Amp (OD Amp Simulator Type)

Small/BltIn/2-Stk/3-Stk [7]

Selects the type of guitar amp

Small: small amp

BltIn: single-unit type amp

2-Stk: large double stack amp

3-Stk: large triple stack amp

Amp Sw (OD Amp Switch)   Off/On [8]

Turns OD Amp on/off.

[EQ]

L Gain (EQ Low Gain)   -12–+12(dB) [10]

Adjusts the low-range gain of the equalizer.

H Gain (EQ High Gain)   -12–+12(dB) [14]

Adjusts the high-range gain of the equalizer.

Mid Frequency (EQ Mid Frequency)   200Hz–6.3kHz [11]

Sets the center frequency for the equalizer mid-range.

Mid Q (EQ Mid Q)   0.5/1.0/2.0/4.0/9.0 [12]

Adjusts the width of the area centered at the Mid Frequency setting in which the gain will be affected. The area affected will become narrower as this value is increased.

MidGain (EQ Mid Gain)   -12–+12(dB) [13]

Adjusts the gain of the area specified by the Mid Frequency parameter and the Mid Q parameter.

[CF]

CF Select (CF Select)   Chorus/Flangr [15]

Select either Chorus or Flanger.

Rate   0.05–6.40(Hz) [16]

Adjusts the speed of modulation for the chorus or flanger.

Depth   0–127 [17]

Adjusts the depth of modulation for the chorus or flanger.

Fb (CF Feedback)   -98%–+98% [18]

Adjusts the amount (%) of the flanger sound that will be returned to the input. Negative (-) values will invert the phase.

In the case of Chorus, this will have no effect.

#Mix (CF Mix)   0–127 [19]

Adjusts the volume of the chorus or flanger sound.

[OUTPUT]

Output Level   0–127 [20]

Adjusts the output level.

P-50: Guitar Multi 3   [04H, 02H]

Guitar Multi 3 connects Wah (Wah), Overdrive or Distortion (OD), Chorus or Flanger (CF), and Delay (Dly) effects in series.
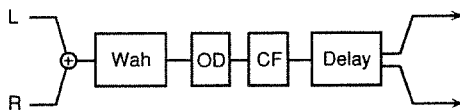
WAH-OD (EQ)-CF-DLY-OUT

[WAH]

Filtype (Wah Filter Type)   LPF/BPF [1]

Selects the type of filter.

    LPF: The wah effect will be produced over a broad frequency range.

    BPF: The wah effect will be produced in a narrow frequency range.

Sw (Wah Switch)   Off/On [4]

Turns Wah on/off.

+Manual (Wah Manual)   0–127 [2]

Sets the center frequency at which the effect will be produced.

Peak   0–127 [3]

Adjusts the way in which the wah effect will be applied to the region of the center frequency. Lower settings will produce a wah effect in a broad area around the center frequency, and higher settings will produce a wah effect in a narrower area around the center frequency.

[OD]

OD Select (OD Select)   Odrv/Dist [5]

Select either Overdrive or Distortion.

#Drive   0–127 [6]

Adjusts the depth of distortion. The volume will change together with the depth of distortion.

OD Sw (OD Switch)   Off/On [11]

Turns overdrive or distortion on/off.

Amp (OD Amp Simulator Type)

                      Small/Bltln/2-Stk/3-Stk [7]

Selects the type of guitar amp

    Small: small amp

    Bltln: single-unit type amp

    2-Stk: large double stack amp

    3-Stk: large triple stack amp

Amp Sw (OD Amp Switch)   Off/On [8]

Turns OD Amp on/off.

[EQ]

OD Low Gain   -12–+12(dB) [9]

Adjusts the low-range gain for the overdrive (or distortion) sound.

OD High Gain   -12–+12(dB) [10]

Adjusts the high-range gain for the overdrive (or distortion) sound.

[CF]

CF Select   Chorus/Flangr [12]

Select either Chorus or Flanger.

Rate   0.05–6.40(Hz) [13]

Adjusts the modulation speed for the chorus or flanger.

Depth   0–127 [14]

Adjusts the modulation depth for the chorus or flanger.

Fb (CF Feedback)   -98%–+98% [15]

Adjusts the amount (%) of the flanger sound that is returned to the input. Negative (-) values will invert the phase.

In the case of Chorus, this will have no effect.

Mix   0–127 [16]

Adjusts the volume of the chorus or flanger sound.

[DLY]

Delay Time   0–635msec [17]

Adjusts the time from the original sound until the delay sound is heard.

Chapter 5. Applying Special Effects to the Sound (Multi-Effects)

Fb (Delay Feedback Level)   **0–127 [18]**

Adjusts the amount of the delay sound that is returned to the input.

Mix (Delay Mix)   **0–127 [19]**

Adjusts the volume of the delay sound.

[OUTPUT]

Output Level   **0–127 [20]**

Adjusts the output level.

P-51: Clean Gt Multi 1 (Clean Guitar Multi 1)   [04H, 03H]

Clean Guitar Multi 1 connects Compressor (Cmp), Equalizer (EQ), Chorus or Flanger (CF), and Delay (Dly) effects in series.
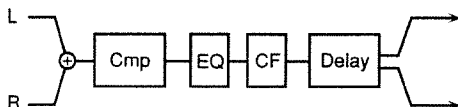
CMP-EQ-CF-DLY-OUTPUT

[CMP]

Attack (Compressor Attack)   **0–127 [1]**

Adjusts the time over which the sound will rise after it is input.

Sustain (Compressor Sustain)   **0–127 [2]**

Adjusts the time over which low-level sounds are boosted until they reach a specified volume.

Increasing the value will shorten the time. When the value is modified, the level will also change.

Level (Compressor Level)   **0–127 [3]**

Adjusts the volume of the compressor sound.

Switch (Compressor Switch)   **Off/On [4]**

Turns the compressor on/off.

[EQ]

L Gain (EQ Low Gain)   **-12–+12(dB) [5]**

Adjusts the low-range gain of the equalizer.

H Gain (EQ High Gain)   **-12–+12(dB) [9]**

Adjusts the high-range gain of the equalizer.

Mid Frequency(EQ Mid Frequency)   **200Hz–6.3kHz [6]**

Sets the center frequency for the equalizer mid-range.

Mid Q (EQ Mid Q)   **0.5/1.0/2.0/4.0/9.0 [7]**

Adjusts the width of the area centered at the Mid Frequency setting in which the gain will be affected. The area affected will become narrower as this value is increased.

MidGain (EQ Mid Gain)   **-12–+12(dB) [8]**

Adjusts the gain of the area specified by the Mid Frequency parameter and the Mid Q parameter.

[CF]

CF Select   **Chorus/Flangr [10]**

Select either Chorus or Flanger.

Rate   **0.05–6.40(Hz) [11]**

Adjusts the speed of modulation for the chorus or flanger.

Depth   **0–127 [12]**

Adjusts the depth of modulation for the chorus or flanger.

Fb (CF Feedback)   **-98%–+98% [13]**

Adjusts the amount (%) of the flanger sound that will be returned to the input. Negative (-) values will invert the phase.

In the case of Chorus, this will have no effect.

+Mix (CF Mix)   **0–127 [14]**

Adjusts the volume of the chorus or flanger sound.

[DLY]

Delay Time   **0–635msec [15]**

Adjusts the time from the original sound until the delay sound is heard.

HF Damp (Delay HF Dump)   **315Hz-8kHz/Bypass [17]**

Adjusts the frequency at which the high range will be cut from the delay sound that is returned to the input. If you do not wish to cut the high range of the returned sound, select Bypass.

Fb (Delay Feedback Level)   **0–127 [16]**

Adjusts the amount of the delay sound that is returned to the input.

#Mix (Delay Mix)   **0–127 [18]**

Adjusts the volume of the delay sound.

[OUTPUT]

Output Level   **0–127 [20]**

Adjusts the output level.

P-52: Clean Gt Multi 2 (Clean Guitar Multi 2)   [04H, 04H]

Clean Guitar Multi 2 provides Auto-wah (AW), Equalizer (EQ), Chorus or Flanger (CF), and Delay (Dly) effects connected in series.
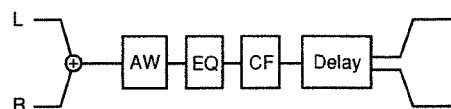
AW-EQ-CF-DLY-OUTPUT

[AW]

Filtype (Auto-Wah Filter Type)   **LPF/BPF [1]**

Selects the type of filter for the auto-wah.

    LPF: The wah effect will be produced over a broad frequency range.

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BPF: The wah effect will be produced over a narrow frequency range.

Sw (Auto-Wah Switch)　　　　　　　　　　**Off/On [6]**

Turns Auto-way on/off.

+Manual (Auto-Wah Manual)　　　　　　　**0–127 [2]**

Sets the center frequency at which the auto-wah effect will be produced.

Peak (Auto-Wah Peak)　　　　　　　　　　**0–127 [3]**

Adjusts the way in which the wah effect will be applied to the region of the center frequency. Lower settings will produce a wah effect in a broad area around the center frequency, and higher settings will produce a wah effect in a narrower area around the center frequency.

Rate (Auto-Wah Rate)　　　　　　**0.05–6.40Hz [4]**

Adjusts the modulation speed of the auto-wah.

Depth (Auto-Wah Depth)　　　　　　　　**0–127 [5]**

Adjusts the modulation depth of the auto-wah.

[EQ]

L Gain (EQ Low Gain)　　　　　　**-12–+12(dB) [7]**

Adjusts the low-range gain of the equalizer.

H Gain (EQ High Gain)　　　　　　**-12–+12(dB) [11]**

Adjusts the high-range gain of the equalizer.

Mid Frequency (EQ Mid Frequency)　　**200Hz–6.3kHz [8]**

Sets the center frequency for the equalizer mid-range.

Mid Q (EQ Mid Q)　　　　**0.5/1.0/2.0/4.0/9.0 [9]**

Adjusts the width of the area centered at the Mid Frequency setting in which the gain will be affected. The area affected will become narrower as this value is increased.

MidGain (EQ Mid Gain)　　　　　　**-12–+12(dB) [10]**

Adjusts the gain of the area specified by the Mid Frequency parameter and the Mid Q parameter.

[CF]

CF Select (CF Select)　　　　　　**Chorus/Flangr [12]**

Select either Chorus or Flanger.

Rate　　　　　　　　　　**0.05–6.40(Hz) [13]**

Adjusts the speed of modulation for the chorus or flanger.

Depth　　　　　　　　　　**0–127 [14]**

Adjusts the depth of modulation for the chorus or flanger.

Fb (CF Feedback)　　　　　　**-98%–+98% [15]**

Adjusts the amount (%) of the flanger sound that will be returned to the input. Negative (-) values will invert the phase.

In the case of Chorus, this will have no effect.

Mix　　　　　　　　　　**0–127 [16]**

Adjusts the volume of the chorus or flanger sound.

[DLY]

Delay Time　　　　　　　　**0–635msec [17]**

Adjusts the time from the original sound until the delay sound is heard.

Fb (Delay Feedback Level)　　　　　　**0–127 [18]**

Adjusts the amount of the delay sound that is returned to the input.

#Mix (Delay Mix)　　　　　　　　**0–127 [19]**

Adjusts the volume of the delay sound.

[OUTPUT]

Output Level　　　　　　　　**0–127 [20]**

Adjusts the output level.

P-53: Bass Multi　　　　　　[04H, 05H]

Bass Multi provides Compressor (Cmp), Overdrive or Distortion (OD), Equalizer (EQ), and Chorus or Flanger (CF) effects connected in series.

CMP-OD-EQ-CF-OUTPUT

[CMP]

Attack (Compressor Attack)　　　　　　**0–127 [1]**

Adjusts the time over which the sound will rise after it is input.

Sustain (Compressor Sustain)　　　　　**0–127 [2]**

Adjusts the time over which low-level sounds are boosted until they reach a specified volume.

Increasing the value will shorten the time. When the value is modified, the level will also change.

Level (Compressor Level)　　　　　　**0–127 [3]**

Adjusts the volume of the compressor sound.

Switch (Compressor Switch)　　　　　　**Off/On [4]**

Turns the compressor on/off.

[OD]

OD Select　　　　　　　　　**Odrv/Dist [5]**

Select either bass guitar Overdrive or Distortion.

+Drive (OD Drive)　　　　　　　　**0–127 [6]**

Adjusts the depth of distortion. The volume will change together with the depth of distortion.

OD Sw (OD Switch)　　　　　　　　**Off/On [9]**

Turns Overdrive/Distortion on/off.

Amp (OD Amp Simulation Type)　　**Small/Bltln/2-Stk [7]**

Selects the type of guitar amp

　Small: small amp

　Bltln: single-unit type amp

　2-Stk: large double stack amp

Amp Sw (OD Amp Switch)   **Off/On [8]**

Turns OD Amp on/off.

[EQ]

L Gain (EQ Low Gain)   **-12–+12(dB) [10]**

Adjusts the low-range gain of the equalizer.

H Gain (EQ High Gain)   **-12–+12(dB) [14]**

Adjusts the high-range gain of the equalizer.

Mid Frequency (EQ Mid Frequency)   **200Hz–6.3kHz [11]**

Sets the center frequency for the equalizer mid-range.

Mid Q (EQ Mid Q)   **0.5/1.0/2.0/4.0/9.0 [12]**

Adjusts the width of the area centered at the Mid Frequency setting in which the gain will be affected. The area affected will become narrower as this value is increased.

MidGain (EQ Mid Gain)   **-12–+12 [13]**

Adjusts the gain of the area specified by the Mid Frequency parameter and the Mid Q parameter.

[CF]

CF Select (CF Select)   **Chorus/Flangr [15]**

Select either Chorus or Flanger.

Rate   **0.05–6.40(Hz) [16]**

Adjusts the speed of modulation for the chorus or flanger.

Depth   **0–127 [17]**

Adjusts the depth of modulation for the chorus or flanger.

Fb (CF Feedback Level)   **-98%–+98% [18]**

Adjusts the amount (%) of the flanger sound that will be returned to the input. Negative (-) values will invert the phase.

In the case of Chorus, this will have no effect.

#Mix   **0–127 [19]**

Adjusts the volume of the chorus or flanger sound.

[OUTPUT]

Output Level   **0–127 [20]**

Adjusts the output level.

P-54: Rhodes Multi   [04H, 06H]

Rhodes Multi provides Enhancer (EH), Phaser (PH), Chorus or Flanger (CF), and Tremolo or Pan (TP) effects connected in series.
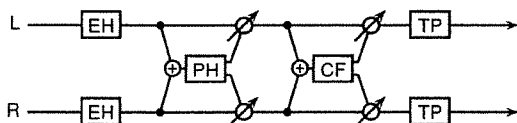
EH-PH-CF(MOD)-TP-OUT

[EH]

Sensitivity (Enhancer Sensitivity)   **0–127 [1]**

Adjusts the depth of the enhancer.

Mix Level (Enhancer Mix Level)   **0–127 [2]**

Adjusts the level at which the overtones generated by the enhancer will be mixed with the direct sound.

[PH]

Manual (Phaser Manual)   **100Hz–8.0kHz [3]**

Adjusts the center frequency at which the sound will be modulated.

Rate (Phaser Rate)   **0.05–6.40Hz [4]**

Adjusts the modulation speed.

Depth (Phaser Depth)   **0–127 [5]**

Adjusts the modulation depth.

Reso (Phaser Resonance)   **0–127 [6]**

Adjusts the emphasis for the region around the center frequency specified by the PH Man parameter.

Mix (Phaser Mix)   **0–127 [7]**

Adjusts the proportion of the phase-shifted sound that will be mixed with the direct sound.

[CF]

CF Select   **Chorus/Flangr [8]**

Select either Chorus or Flanger.

LPF (CF Low Pass Filter)   **250Hz–6.3kHz/Bypass [9]**

Cut the high frequency range of the chorus or flanger sound.

Dly (CF Pre Delay)   **0–100ms [10]**

Adjusts the time from the direct sound until the chorus or flanger sound is heard.

Fb (CF Feedback Level)   **-98%–+98% [13]**

Adjusts the amount (%) of the flanger sound that will be returned to the input. Negative (-) values will invert the phase.

In the case of Chorus, this will have no effect.

Mix   **0–127 [14]**

Adjusts the volume of the effect sound.

[MOD]

CF Mod Rate   **0.05–6.40Hz [11]**

Adjusts the modulation speed.

CF Mod Depth   **0–127 [12]**

Adjusts the modulation depth.

[TP]

TP Select   **Trem/Pan [15]**

Select either Tremolo or Pan.

+Rate (TP Modulation Rate)   **0.05–6.40(Hz) [17]**

Adjusts the modulation speed.

#Depth (TP Modulation Depth)   **0–127 [18]**

Adjusts the modulation depth.

Wave (TP Modulation Wave)

∿ / ⊓⊔ / ∿ / ⌁ / ⌁ [16]

Selects the way in which tremolo or pan will be modulated.

∿ : The sound will be modulated like a triangle wave.

⊓⊔ : The sound will be modulated like a square wave.

∿ : The sound will be modulated like a sine wave.

⌁ ⌁ : The sound will be modulated like a sawtooth wave.

Sw (TP Switch)   Off/On [19]

Turns tremolo or pan on/off.

[OUT]

Output Level   0–127 [20]

Adjusts the output level.

P-55: Keyboard Multi   [05H, 00H]

Keyboard Multi provides Ring Modulator (RM), Equalizer (EQ), Pitch Shifter (PS), Phaser (PH) and Delay (Dly) effects connected in series.

Ring Modulator is an effect which applies amplitude modulation (AM) to the input signal, producing bell-like sounds.
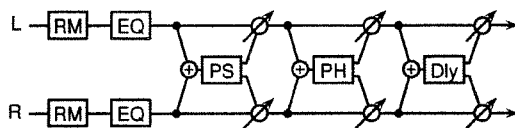
RM-EQ-PS-PH-DLY-OUTPUT

[RM (Ring Modulator)]

+Modulation Freq. (RM Modulation Frequency) 0–127 [1]

Sets the frequency at which modulation will be applied.

#Bal (RM Balance)

Dry100, RingM 0–Dry 0, RingM100[2]

Adjusts the balance between the direct and the ring modulated sound.

[EQ]

L Gain (EQ Low Gain)   -12–+12(dB) [3]

Adjusts the low range gain of the equalizer.

H Gain (EQ High Gain)   -12–+12(dB) [7]

Adjusts the high-range gain of the equalizer.

Mid Frequency (EQ Mid Frequency)   200Hz–6.3kHz [4]

Sets the center frequency for the equalizer mid-range.

Mid Q (EQ Mid Q)   0.5/1.0/2.0/4.0/9.0 [5]

Adjusts the width of the area centered at the Mid Frequency setting in which the gain will be affected. The area affected will become narrower as this value is increased.

MidGain (EQ Mid Gain)   -12–+12(dB) [6]

Adjusts the gain of the area specified by the Mid Frequency parameter and the Mid Q parameter.

[PS]

Coarse (PS Coarse Pitch)   -24–0–+12 [8]

Adjusts the amount of pitch shift in semitone steps (-2 to +1 octaves).

Fine (PS Fine Pitch)   -100–0–+100 [9]

Makes fine adjustments to the pitch shift in 2-cent steps (-100 to +100 cents).

Pitch Shifter Mode   1–5 [10]

As this value is increased, the response will become slower but the sound will be more stable.

Bal (PS Balance)

Dry100, PitchS 0–Dry 0, PitchS100[11]

Adjusts the volume balance between the direct and the pitch shifted sound.

[PH]

Manual (Phaser Manual)   100Hz–8.0kHz [12]

Sets the center frequency at which the phaser sound will be modulated.

Rate (Phaser Rate)   0.05–6.40(Hz) [13]

Adjusts the modulation speed of the phaser.

Depth (Phaser Depth)   0–127 [14]

Adjusts the modulation depth of the phaser.

Reso (Phaser Resonance)   0–127 [15]

Adjusts the emphasis for the region in the vicinity of the center frequency specified by the PH Man parameter.

Mix (Phaser Mix)   0–127 [16]

Adjusts the proportion at which the phase-shifted sound will be mixed with the original sound.

[DLY]

Delay Time   0–635msec [17]

Adjusts the time from the original sound until the delay sound is heard.

Feedback (Delay Feedback Level)   0–127 [18]

Adjusts the amount of the delay sound that is returned to the input.

Mix (Delay Mix Level)   0–127 [19]

Adjusts the proportion at which the delay sound is mixed with the direct sound.

[OUTPUT]

Output Level   0–127 [20]

Adjusts the output level.

■ Two Effects Connected in Parallel

Effect types in which two different effects are connected in parallel allow you to apply different effects to L and R independently. By using parallel effects for the sound of two parts, you can achieve a result as if two separate effect units were used.

Here we will explain how a parallel-connected multi-effect can be used as two separate effects.

1. Assign "[3] 000/028 Clean.Gt" to part A01, and "[3] 000/017 Organ 1" to part A02. (p. 16)

2. Set part A01 PAN to L63, and part A02 PAN to R63. (p. 24)

3. Select multi-effect P-60 OD, Rotary. (p. 49)

4. Apply the multi-effect to part A01 and part A02. (p. 49)

5. Set the OD Output Pan and RT Output Pan parameters of the P-60 OD, Rotary multi-effect. (p. 50)

Part A01 [3] 000/028 Clean.Gt will be output with the PAN setting you specified for OD Output Pan.
Part A02 [3] 000/017 Organ 1 will be output with the PAN setting you specified for RT Output Pan.
Now, the overdrive effect will be applied to part A01 "[3] 000/028 Clean.Gt," and the rotary effect will be applied to part A02 "[3] 000/017 Organ 1."
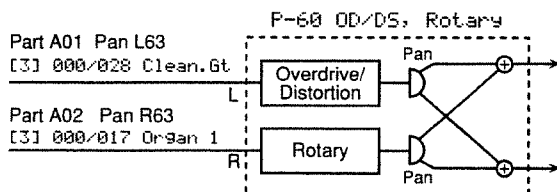
● Effects consisting of two effects connected in parallel (parallel 2)

P-56: Chorus, Delay [11H, 00H]

This effect connects a chorus and a delay in parallel.

CHORUS, DELAY-OUTPUT

[CHORUS]

PreDelay Time (Chorus Pre Delay) 0–100msec [1]
Adjusts the time delay from when the direct sound begins until the chorus sound is heard.

Rate (Chorus Rate) 0.05–10.0Hz [2]
Adjusts the modulation speed of the chorus effect.

Depth (Chorus Depth) 0–127 [3]
Adjusts the modulation depth of the chorus effect.

+Bal (Chorus Balance) Dry100, Chorus 0–Dry 0, Chorus100[5]
Adjusts the volume balance between the direct and the chorus sound.

Pan (Chorus Output Pan) L63–0–R63 [16]
Adjusts the stereo position of the chorus sound. L63 is far left, 0 is center, and R63 is far right.

Level (Chorus Level) 0–127 [17]
Adjusts the volume of the chorus sound.

[DELAY]

Time (Delay Time) 0–500msec [6]
Adjusts the time delay from when the direct sound begins until the delay sound is heard.

Feedback Level (Delay Feedback Level) -98%–+98% [7]
Adjusts the proportion (%) of the delay sound that is fed back into the delay input. Negative (-) settings will invert the phase.

HF Damp (Delay HF Damp) 315Hz–8kHz/Bypass [8]
Adjusts the frequency above which delayed sound fed back to the delay input will be cut. If you do not wish to cut the high frequencies of the feedback, set this parameter to Bypass.

#Bal (Delay Balance) Dry100, Delay 0–Dry 0, Delay100 [10]
Adjusts the volume balance between the direct and the delay sound.

Pan (Delay Output Pan) L63–0–R63 [18]
Adjusts the stereo position of the delay sound. L63 is far left, 0 is center, and R63 is far right.

Level (Delay Level) 0–127 [19]
Adjusts the volume of the delay sound.

[OUTPUT]

Output Level 0–127 [20]
Adjusts the output level.

P-57: Flanger, Delay [11H, 01H]

This effect connects a flanger and a delay in parallel.

FLANGER, DELAY-OUTPUT

[FLANGER]

PreDelay Time (Flanger Pre Delay)   0–100msec [1]
Adjusts the time delay from when the direct sound begins until the flanger sound is heard.

Rate (Flanger Rate)   0.05–10.0Hz [2]
Adjusts the modulation speed of the flanger effect.

Depth (Flanger Depth)   0–127 [3]
Adjusts the modulation depth of the flanger effect.

Feedback Level(Flanger Feedback Level) -98%–+98% [4]
Adjusts the proportion (%) of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.

+Bal (Flanger Balance)
Dry100, Flnger 0–Dry 0, Flnger100 [5]
Adjusts the volume balance between the direct and the flanger sound.

Pan (Flanger Output Pan)   L63–0–R63 [16]
Adjusts the stereo position of the flanger sound. L63 is far left, 0 is center, and R63 is far right.

Level (Flanger Level)   0–127 [17]
Adjusts the volume of the flanger sound.

[DELAY]

Time (Delay Time)   0–500msec [6]
Adjusts the time delay from when the direct sound begins until the delay sound is heard.

Feedback Level (Delay Feedback Level)   -98%–+98% [7]
Adjusts the proportion (%) of the delay sound that is fed back into the delay input. Negative (-) settings will invert the phase.

HF Damp (Delay HF Damp)   315Hz–8kHz/Bypass [8]
Adjusts the frequency above which delayed sound fed back to the delay input will be cut. If you do not want to cut the high frequencies of the delay feedback, set this parameter to Bypass.

#Bal (Delay Balance)
Dry100, Delay 0–Dry 0, Delay100 [10]
Adjusts the volume balance between the direct and the delay sound.

Pan (Delay Output Pan)   L63–0–R63 [18]
Adjusts the stereo position of the delay sound. L63 is far left, 0 is center, and R63 is far right.

Level (Delay Level)   0–127 [19]
Adjusts the volume of the delay sound.

[OUTPUT]

Output Level   0–127 [20]
Adjusts the output level.

P-58: Chorus , Flanger   [11H, 02H]

This effect connects a chorus and a flanger in parallel.

CHORUS, FLANGER-OUTPUT

[CHORUS]

PreDelay Time (Chorus Pre Delay Time)   0–100msec [1]
Adjusts the time delay from when the direct sound begins until the chorus sound is heard.

Rate (Chorus Rate)   0.05–10.0Hz [2]
Adjusts the modulation speed of the chorus effect.

Depth (Chorus Depth)   0–127 [3]
Adjusts the modulation depth of the chorus effect.

+Bal (Chorus Balance)
Dry100, Chorus 0–Dry 0, Chorus100 [5]
Adjusts the volume balance between the direct and the chorus sound.

Pan (Chorus Output Pan)   L63–0–R63 [16]
Adjusts the stereo position of the chorus sound. L63 is far left, 0 is center, and R63 is far right.

Level (Chorus Level)   0–127 [17]
Adjusts the volume of the chorus sound.

[FLANGER]

PreDelay Time (Flanger Pre Delay Time)   0–100msec [6]
Adjusts the time delay from when the direct sound begins until the flanger sound is heard.

Rate (Flanger Rate)   0.05–10.0Hz [7]
Adjusts the modulation speed of the flanger effect.

Depth (Flanger Depth)   0–127 [8]
Adjusts the modulation depth of the flanger effect.

Feedback Level (Flanger Feedback Level)
-98%–+98% [9]
Adjusts the proportion (%) of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.

#Bal (Flanger Balance)
Dry100, Flnger 0–Dry 0, Flnger100 [10]
Adjusts the volume balance between the direct and the flanger sound.

Pan (Flanger Output Pan)   L63–0–R63 [18]
Adjusts the stereo position of the flanger sound. L63 is far left, 0 is center, and R63 is far right.

Level (Flanger Level)   0–127 [19]
Adjusts the volume of the flanger sound.

[OUTPUT]

Output Level   **0–127 [20]**

Adjusts the output level.

P-59: OD/DS 1, OD/DS 2
(Overdrive/Distortion 1, 2)   **[11H, 03H]**

This connects two effect units in parallel, each of which allows you to select Overdrive or Distortion.

OD1, OD2-OUTPUT

[OD1]
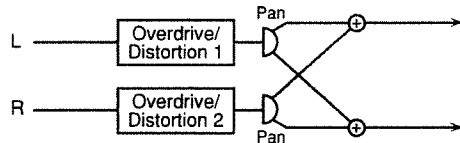
OD 1 Select   **Odrv/Dist [1]**

Select either Overdrive or Distortion for set 1.

+Drive (OD 1 Drive)   **0–127 [2]**

Adjusts the depth of distortion for set 1. The volume will change together with the depth of distortion.

Amp (OD 1 Amp Simulator Type)
          Small/Bltln/2-Stk/3-Stk [3]

Selects the type of guitar amp for set 1.

    Small: small amp
    Bltln: single-unit type amp
    2-Stk: large double stack amp
    3-Stk: large triple stack amp

Amp Sw (OD 1 Amp Switch)   **Off/On [4]**

Turns OD 1 Amp on/off.

Pan (OD 1 Output Pan)   **L63–0–R63 [16]**

Sets the stereo location of the overdrive or distortion sound for set 1. L63 is far left, 0 is center, and R63 is far right.

Level   **0–127 [17]**

Adjusts the overdrive or distortion volume for set 1.

[OD2]

OD 2 Select (OD 2 Select)   **Odrv/Dist [6]**

Select either Overdrive or Distortion for set 2.

#Drive (OD 2 Drive)   **0–127 [7]**

Adjusts the depth of distortion for set 2. The volume will change together with the depth of distortion.

Amp (OD 2 Amp Simulator Type)
          Small/Bltln/2-Stk/3-Stk [8]

Selects the type of guitar amp for set 2.

    Small: small amp
    Bltln: single-unit type amp
    2-Stk: large double stack amp
    3-Stk: large triple stack amp

Amp Sw (OD 2 Amp Switch)   **Off/On [9]**

Turns OD 2 Amp on/off.

Pan (OD 2 Output Pan)   **L63–0–R63 [18]**

Sets the stereo location of the overdrive or distortion sound for set 2. L63 is far left, 0 is center, and R63 is far right.

Level   **0–127 [19]**

Adjusts the overdrive or distortion volume for set 2.

[OUTPUT]

Output Level   **0–127 [20]**

Adjusts the output level.

P-60: OD/DS, Rotary
(Overdrive/Distortion, Rotary)   **[11H, 04H]**

This connects Overdrive or Distortion in parallel with Rotary.
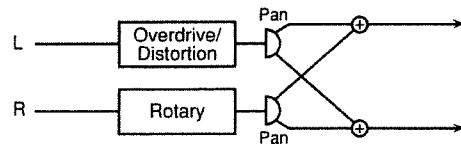
OD, (RT L-RT H-RT)-OUT

[OD]

OD Select (OD Select)   **Odrv/Dist [1]**

Select either Overdrive or Distortion.

+Drive (OD Drive)   **0–127 [2]**

Adjusts the depth of overdrive or distortion. The volume will change together with the depth of distortion.

Amp (OD Amp Simulator Type)
          Small/Bltln/2-Stk/3-Stk [3]

Selects the type of guitar amp for overdrive or distortion.

    Small: small amp
    Bltln: single-unit type amp
    2-Stk: large double stack amp
    3-Stk: large triple stack amp

Amp Sw (OD Amp Switch)   **Off/On [4]**

Turns the OD Amp parameter on/off.

Pan (OD Output Pan)   **L63–0–R63 [16]**

Sets the stereo location of the overdrive or distortion sound. L63 is far left, 0 is center, and R63 is far right.

Level   **0–127 [17]**

Adjusts the volume of the overdrive or distortion sound.

[RT L]

Slow Rate (Rotary Low Frequency Slow Rate)
          0.05–10.0Hz [6]

Adjusts the speed of the low-range rotor for the low-speed (Slow) setting.

Chapter 5

Fast Rate (Rotary Low Frequency Fast Rate)

0.05–10.0Hz [7]

Adjusts the speed of the low-range rotor for the high-speed (Fast) setting.

Accel (Rotary Low Frequency Acceleration)　　0–15 [8]

Adjusts the time over which the rotation speed of the low-range rotor will change from low-speed to high-speed (or high-speed to low-speed) rotation. Smaller values will require greater time to reach the new rotational speed.

Level (Rotary Low Frequency Level)　　0–127 [9]

Adjusts the volume of the low-range rotor.

[RT H]

Slow Rate (Rotary High Frequency Slow Rate)

0.05–10.0Hz [10]

Adjusts the speed of the high-range rotor for the low-speed (Slow) setting.

Fast Rate (Rotary High Frequency Fast Rate)

0.05–10.0Hz [11]

Adjusts the speed of the high-range rotor for the high-speed (Fast) setting.

Accel (Rotary High Frequency Acceleration)　　0–15 [12]

Adjusts the time over which the rotation speed of the high-range rotor will change from low-speed to high-speed (or high-speed to low-speed) rotation. Smaller values will require greater time to reach the new rotational speed.

Level (Rotary High Frequency Level)　　0–127 [13]

Adjusts the volume of the high-range rotor.

[RT]

Separation (Rotary Separation)　　0–127 [14]

Adjusts the spatial spread of the rotary sound.

#Speed　　Slow/Fast [15]

Simultaneously switch the rotational speed of both the low-range and the high-range rotors.

　　Slow: Slow down the rotation to the specified speeds ([RT L] Slow Rate parameter/[RT H] Slow Rate parameter values).

　　Fast: Speed up the rotation to the specified speeds ([RT L] Fast Rate parameter/[RT H] Fast Rate parameter values).

Pan (Rotary Output Pan)　　L63–0–R63 [18]

Adjusts the stereo position of the rotary sound. L63 is far left, 0 is center, and R63 is far right.

Level　　0–127 [19]

Adjusts the volume of the rotary sound.

[OUT]

Output Level　　0–127 [20]

Adjusts the output level.

P-61: OD/DS, Phaser (Overdrive/Distortion, Phaser) [11H, 05H]

This connects an overdrive or distortion in parallel with a phaser.
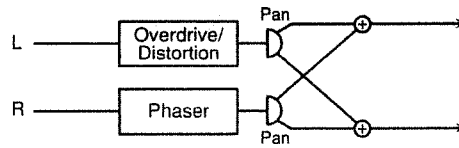
OD, PHASER-OUTPUT

[OD]

OD Select (OD Select)　　Odrv/Dist [1]

Select either Overdrive or Distortion.

+Drive (OD Drive)　　0–127 [2]

Adjusts the depth of distortion. The volume will change together with the depth of distortion.

Amp (OD Amp Simulator Type)

Small/BltIn/2-Stk/3-Stk [3]

Selects the type of guitar amp.

　　Small: small amp

　　BltIn: single-unit type amp

　　2-Stk: large double stack amp

　　3-Stk: large triple stack amp

Amp Sw (OD Amp Switch)　　Off/On [4]

Turns the OD Amp parameter on/off.

Pan (OD Output Pan)　　L63–0–R63 [16]

Sets the stereo location of the overdrive or distortion sound. L63 is far left, 0 is center, and R63 is far right.

Level　　0–127 [17]

Adjusts the overdrive or distortion volume.

[PHASER]

Manual (Phaser Manual)　　100Hz–8.0kHz [6]

Adjusts the center frequency at which the sound will be modulated.

#Rate (Phaser Rate)　　0.05–10.0Hz [7]

Adjusts the modulation speed.

Depth (Phaser Depth)　　0–127 [8]

Adjusts the modulation depth.

Resonance (Phaser Resonance)　　0–127 [9]

Adjusts the emphasis for the region around the center frequency specified by the PH Man parameter.

Mix Level (Phaser Mix Level)　　0–127 [10]

Adjusts the proportion of the phase-shifted sound that will be mixed with the direct sound.

Pan (Phaser Output Pan)　　L63–0–R63 [18]

Sets the stereo location of the phaser sound. L63 is far left, 0 is center, and R63 is far right.

Level 0–127 [19]

Adjusts the volume of the phaser sound.

[OUTPUT]

Output Level 0–127 [20]

Adjusts the output level.

P-62: OD/DS, Auto Wah (Overdrive/Distortion, Auto-wah) [11H, 06H]

This connects an Overdrive or Distortion in parallel with an Auto-wah.
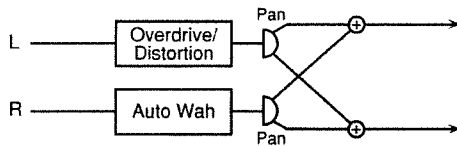
OD, AUTO WAH-OUTPUT

[OD]

OD Select (OD Select) Odrv/Dist [1]

Select either Overdrive or Distortion.

+Drive (OD Drive) 0–127 [2]

Adjusts the depth of overdrive or distortion. The volume will change together with the depth of distortion.

Amp (OD Amp Simulator Type)

Small/Bltln/2-Stk/3-Stk [3]

Selects the type of guitar amp for overdrive or distortion.

    Small: small amp

    Bltln: single-unit type amp

    2-Stk: large double stack amp

    3-Stk: large triple stack amp

Amp Sw (OD Amp Switch) Off/On [4]

Turns the OD Amp parameter on/off.

Pan (OD Output Pan) L63–0–R63 [16]

Sets the stereo location of the overdrive or distortion sound. L63 is far left, 0 is center, and R63 is far right.

Level (OD Level) 0–127 [17]

Adjusts the volume of the overdrive or distortion sound.

[AUTO WAH]

Filtype (Auto-Wah Filter Type) LPF/BPF [6]

Selects the type of filter for the auto-wah.

    LPF: The wah effect will be produced over a broad frequency range.

    BPF: The wah effect will be produced over a narrow frequency range.

Sens (Auto-Wah Sensitivity) 0–127 [7]

Adjusts the sensitivity with which the auto-wah filter will be controlled.

#Manual (Auto-Wah Manual) 0–127 [8]

Sets the center frequency at which the auto-wah effect will be produced.

Peak (Auto-Wah Peak) 0–127 [9]

Adjusts the way in which the wah effect will be applied to the region of the center frequency. Lower settings will produce a wah effect in a broad area around the center frequency, and higher settings will produce a wah effect in a narrower area around the center frequency.

Rate (Auto-Wah Rate) 0.05–10.0(Hz) [10]

Adjusts the modulation speed of the auto-wah.

Depth (Auto-Wah Depth) 0–127 [11]

Adjusts the modulation depth of the auto-wah.

Polarity (Auto-Wah Polarity) Down/Up [12]

Sets the direction in which the frequency will change when the auto-wah filter is modulated. With a setting of Up, the filter will change toward a higher frequency. With a setting of Down, it will change toward a lower frequency.

Pan (Auto-Wah Output Pan) L63–0–R63 [18]

Adjusts the stereo position of the auto-wah sound. L63 is far left, 0 is center, and R63 is far right.

Level (Auto-Wah Level) 0–127 [19]

Adjusts the volume of the auto-wah sound.

[OUTPUT]

Output Level 0–127 [20]

Adjusts the output level.

P-63: Phaser, Rotary [11H, 07H]

This connects a Phaser effect in parallel with a Rotary effect.
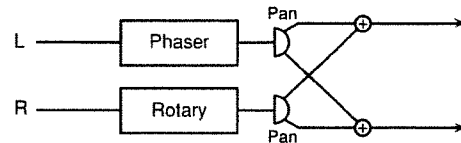
PH, (RT L-RT H-RT)-OUT

[PH]

Manual (Phaser Manual) 100Hz–8.0kHz [1]

Adjusts the center frequency at which the sound will be modulated.

+Rate (Phaser Rate) 0.05–10.0Hz [2]

Adjusts the modulation speed of the phaser.

Depth (Phaser Depth) 0–127 [3]

Adjusts the modulation depth of the phaser.

Resonance (Phaser Resonance) 0–127 [4]

Adjusts the emphasis for the region around the center frequency specified by the PH Man parameter.

Mix Level (Phaser Mix Level)   0–127 [5]

Adjusts the proportion of the phase-shifted sound that will be mixed with the direct sound.

Pan (Phaser Output Pan)   L63–0–R63 [16]

Sets the stereo location of the phaser sound. L63 is far left, 0 is center, and R63 is far right.

Level (Phaser Level)   0–127 [17]

Adjusts the volume of the phaser sound.

[RT L]

Slow Rate (Rotary Low Frequency Slow Rate)

0.05–10.0Hz [6]

Adjusts the speed of the low-range rotor for the low-speed (Slow) setting.

Fast Rate (Rotary Low Frequency Fast Rate)

0.05–10.0Hz [7]

Adjusts the speed of the low-range rotor for the high-speed (Fast) setting.

Accel (Rotary Low Frequency Acceleration)   0–15 [8]

Adjusts the time over which the rotation speed of the low-range rotor will change from low-speed to high-speed (or high-speed to low-speed) rotation. Smaller values will require greater time to reach the new rotational speed.

Level (Rotary Low Frequency Level)   0–127 [9]

Adjusts the volume of the low-range rotor.

[RT H]

Slow Rate (Rotary High Frequency Slow Rate)

0.05–10.0Hz [10]

Adjusts the speed of the high-range rotor for the low-speed (Slow) setting.

Fast Rate (Rotary High Frequency Fast Rate)

0.05–10.0Hz [11]

Adjusts the speed of the high-range rotor for the high-speed (Fast) setting.

Accel (Rotary High Frequency Acceleration)   0–15 [12]

Adjusts the time over which the rotation speed of the high-range rotor will change from low-speed to high-speed (or high-speed to low-speed) rotation. Smaller values will require greater time to reach the new rotational speed.

Level (Rotary High Frequency Level)   0–127 [13]

Adjusts the volume of the high-range rotor.

Separation (Rotary Separation)   0–127 [14]

Adjusts the spread of the rotary sound.

#Speed   Slow/Fast [15]

Simultaneously switch the rotational speed of both the low-range and the high-range rotors.

    Slow: Slow down the rotation to the specified speeds ([RT L] Slow Rate parameter/[RT H] Slow Rate parameter values).

    Fast: Speed up the rotation to the specified speeds ([RT L] Fast Rate parameter/[RT H] Fast Rate parameter values).

Pan (Rotary Output Pan)   L63–0–R63 [18]

Adjusts the stereo position of the rotary sound. L63 is far left, 0 is center, and R63 is far right.

Level   0–127 [19]

Adjusts the volume of the rotary sound.

[OUT]

Output Level   0–127 [20]

Adjusts the output level.

P-64: Phaser, Auto Wah   [11H, 08H]

This connects a Phaser effect and an Auto-wah effect in parallel.

PHASER, AUTO WAH-OUTPUT

[PHASER]

Manual (Phaser Manual)   100Hz–8.0kHz [1]

Adjusts the center frequency at which the phaser sound will be modulated.

+Rate (Phaser Rate)   0.05–10.0Hz [2]

Adjusts the modulation speed of the phaser.

Depth (Phaser Depth)   0–127 [3]

Adjusts the modulation depth of the phaser.

Resonance (Phaser Resonance)   0–127 [4]

Adjusts the emphasis for the region around the center frequency specified by the PH Man parameter.

Mix Level (Phaser Mix Level)   0–127 [5]

Adjusts the proportion of the phase-shifted sound that will be mixed with the direct sound.

Pan (Phaser Output Pan)   L63–0–R63 [16]

Sets the stereo location of the phaser sound. L63 is far left, 0 is center, and R63 is far right.

Level (Phaser Level)   0–127 [17]

Adjusts the volume of the phaser sound.

[AUTO WAH]

Filttype (Auto-Wah Filter Type)   LPF/BPF [6]

Selects the type of filter for the auto-wah.

    LPF: The wah effect will be produced over a broad frequency range.

    BPF: The wah effect will be produced over a narrow frequency range.

Sens (Auto-Wah Sensitivity)   0–127 [7]

Adjusts the sensitivity with which the auto-wah filter will be modulated.

#Manual (Auto-Wah Manual)   **0–127 [8]**

Sets the center frequency at which the auto-wah effect will be produced.

Peak (Auto-Wah Peak)   **0–127 [9]**

Adjusts the way in which the wah effect will be applied to the region of the center frequency. Lower settings will produce a wah effect in a broad area around the center frequency, and higher settings will produce a wah effect in a narrower area around the center frequency.

Rate (Auto-Wah Rate)   **0.05–10.0Hz [10]**

Adjusts the modulation speed of the auto-wah.

Depth (Auto-Wah Depth)   **0–127 [11]**

Adjusts the modulation depth of the auto-wah.

Polarity (Auto-Wah Polarity)   **Down/Up [12]**

Sets the direction in which the frequency will change when the auto-wah filter is modulated. With a setting of Up, the filter will change toward a higher frequency. With a setting of Down it will change toward a lower frequency.

Pan (Auto-Wah Output Pan)   **L63–0–R63 [18]**

Adjusts the stereo position of the auto-wah sound. L63 is far left, 0 is center, and R63 is far right.

Level (Auto-Wah Level)   **0–127 [19]**

Adjusts the volume of the auto-wah sound.

[OUTPUT]

Output Level   **0–127 [20]**

Adjusts the output level.

Chapter 5

Examples of Using Effects Controllers

Here are some examples of how effect controllers can be used.

In these examples MIDI messages are used to modify the settings, but these settings can also be controlled from the front panel (p. 51).

Hexadecimal values in the < **Settings** > sections denote exclusive messages, and hexadecimal values in the < **Modifying the value** > sections denote control change messages. The exclusive messages are given with device ID 17 (10H) (the factory setting). After the settings in < **Settings** > have been made, the control change messages described in < **Modifying the value** > can be transmitted to modify the parameters to the desired value.

For details on exclusive messages, refer to p. 181 and following.

● Using Control Change 16 to modify the Drive value of P-06: Distortion

< Settings >

1. Turn Multi-Effects on for Part A01.
F0 41 10 42 12 <u>40 41 22 01</u> 5C F7

2. Set the Multi-Effects type to P-06: Distortion (value: 01H 11H)
F0 41 10 42 12 <u>40 03 00 01 11</u> 2B F7

3. Set Drive (address: 40H 03H 03H) to 0.
F0 41 10 42 12 <u>40 03 03 00</u> 3A F7

4. Set Control Source 1 (address: 40H 03H 1BH) to CC16 (10H).
F0 41 10 42 12 <u>40 03 1B 10</u> 12 F7

5. Set Control Depth 1 (address: 40H 03H 1CH) to +100% (7FH).
F0 41 10 42 12 <u>40 03 1C 7F</u> 22 F7

< Modifying the value >

  B0 10 00 Drive → 0
  B0 10 01 Drive → 1
    :   :
  B0 10 7F Drive → 126
  B0 10 7F Drive → 127

● Using Control Change 16 to modify the Speed value of P-09: Rotary

< Settings >

1. Turn Multi-Effects on for Part A01.
F0 41 10 42 12 <u>40 41 22 01</u> 5C F7

2. Set the Multi-Effects type to P-09: Rotary (value: 01H 22H)
F0 41 10 42 12 <u>40 03 00 01 22</u> 01 F7

3. Set Speed (address: 40H 03H 0DH) to Slow.
F0 41 10 42 12 <u>40 03 0D 00</u> 30 F7

4. Set Control Source 1 (address: 40H 03H 1BH) to CC16 (10H).
F0 41 10 42 12 <u>40 03 1B 10</u> 12 F7

5. Set Control Depth 1 (address: 40H 03H 1CH) to +100% (7FH).
F0 41 10 42 12 <u>40 03 1C 7F</u> 22 F7

< Modifying the value >

Since the Speed parameter has only two values, Slow and Fast, the lower half of the range (00H–3FH) will select Slow, and the upper half (40H–7FH) will select Fast.

  B0 10 00 Speed → Slow
    :   :
  B0 10 3F Speed → Slow
  B0 10 40 Speed → Fast
    :   :
  B0 10 7F Speed → Fast

● Using Control Change 16 to modify the Wah Manual value of P-50: Guitar Multi 3

< Settings >

1. Turn Multi-Effects on for Part A01.
F0 41 10 42 12 <u>40 41 22 01</u> 5C F7

2. Set the Multi-Effects type to P-50: Guitar Multi 3 (value: 04H 02H)
F0 41 10 42 12 <u>40 03 00 04 02</u> 37 F7

3. Set Wah Manual (address: 40H 03H 04H) to 0.
F0 41 10 42 12 <u>40 03 04 00</u> 39 F7

4. Set Control Source 1 (address: 40H 03H 1BH) to CC16 (10H).
F0 41 10 42 12 <u>40 03 1B 10</u> 12 F7

5. Set Control Depth 1 (address: 40H 03H 1CH) to +100% (7FH).
F0 41 10 42 12 <u>40 03 1C 7F</u> 22 F7

< Modifying the value >

  B0 10 00 Wah Manual → 0
  B0 10 01 Wah Manual → 1
    :   :
  B0 10 7E Wah Manual → 126
  B0 10 7F Wah Manual → 127

* *For the correspondence between the hexadecimal values and the parameter values, refer to p. 164.*

● Using Control Change 17 to modify the Feedback value of P-10: Stereo Flanger

Example 1: When Control Depth is set to +100

< Settings >

1. Turn Multi-Effects on for Part A01.

F0 41 10 42 12 <u>40 41 22 01</u> 5C F7

2. Set the Multi-Effects type to P-10: Stereo Flanger (value: 01H 23H)

F0 41 10 42 12 <u>40 03 00 01 23</u> 19 F7

3. Set Feedback (address: 40H 03H 08H) to -98%.

F0 41 10 42 12 <u>40 03 08 00</u> 35 F7

4. Set Control Source 2 (address: 40H 03H 1DH) to CC17 (11H).

F0 41 10 42 12 <u>40 03 1D 11</u> 0F F7

5. Set Control Depth 2 (address: 40H 03H 1EH) to +100% (7FH).

F0 41 10 42 12 <u>40 03 1E 7F</u> 20 F7

< Modifying the value >

The Feedback parameter changes in 2% steps, with 40H as the center. (For the correspondence between hexadecimal values and parameter values, refer to the table on p. 164.)

B0 11 00	Feedback	→ -98%
:	:	
B0 11 0F	Feedback	→ -98%
B0 11 10	Feedback	→ -96%
:	:	
B0 11 3E	Feedback	→ -4%
B0 11 3F	Feedback	→ -2%
B0 11 40	Feedback	→ +/-0%
B0 11 41	Feedback	→ +2%
B0 11 42	Feedback	→ +4%
:	:	
B0 11 70	Feedback	→ +96%
B0 11 71	Feedback	→ +98%
:	:	
B0 11 7F	Feedback	→ +98%

● Using Control Change 17 to modify the Feedback value of P-10: Stereo Flanger

Example 2: When Control Depth is set to -100

< Settings >

1. Turn Multi-Effects on for Part A01.

F0 41 10 42 12 <u>40 41 22 01</u> 5C F7

2. Set the Multi-Effects type to P-10: Stereo Flanger (value: 01H 23H)

F0 41 10 42 12 <u>40 03 00 01 23</u> 19 F7

3. Set Feedback (address: 40H 03H 08H) to +98% (7FH).

F0 41 10 42 12 <u>40 03 08 7F</u> 36 F7

4. Set Control Source 2 (address: 40H 03H 1DH) to CC17 (11H).

F0 41 10 42 12 <u>40 03 1D 11</u> 0F F7

5. Set Control Depth 2 (address: 40H 03H 1EH) to -100% (00H).

F0 41 10 42 12 <u>40 03 1E 00</u> 1F F7

< Modifying the value >

The Feedback parameter changes in 2% steps, with 40H as the center. (For the correspondence between hexadecimal values and parameter values, refer to the table on p. 164.) Since Effect Control Depth is set to -100%, increasing control change values will cause the value of the Feedback parameter to decrease.

B0 11 00	Feedback	→ +98%
:	:	
B0 11 0F	Feedback	→ +98%
B0 11 10	Feedback	→ +96%
:	:	
B0 11 3E	Feedback	→ +4%
B0 11 3F	Feedback	→ +2%
B0 11 40	Feedback	→ +/-0%
B0 11 41	Feedback	→ -2%
B0 11 42	Feedback	→ -4%
:	:	
B0 11 70	Feedback	→ -96%
B0 11 71	Feedback	→ -98%
:	:	
B0 11 7F	Feedback	→ -98%

Chapter 6. Setting Up Your Preferences

About the System Mode

In System mode you can make various settings related to the sound generator.

* *System mode can be accessed from any mode.*

Use the following procedure to set System mode parameters.

1. Press [SYSTEM] to make the indicator light.

2. Use CURSOR [▲] to move the cursor to the menu name.

3. Rotate the VALUE dial to select the page in which you wish to edit.

4. Use CURSOR [▲] [▼] [◄] [►] to select the parameter that you wish to modify.

5. Rotate the VALUE dial to adjust the value.

* *To leave system mode, press [EXIT] or [SYSTEM].*

System mode contains pages with the following menu names.

> Setup
> Effect Switch
> MIDI
> Sound
> Lock
> Preview
> Display

* *Parameter values which will not take effect until the next time the power is turned on are displayed in parentheses ( ).*

Power-on Settings

In the "Setup" page you can set the following parameters related to the power-on state.

> LCD Contrast
> Power Up Mode
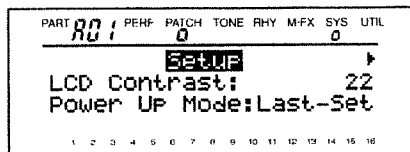
■ Adjusting the Display Contrast

LCD Contrast: 1–32
Depending on the angle at which the SC-880 is placed, the display can sometimes be difficult to read. If so, adjust the contrast of the display. Higher values will make the characters darker.

■ Selecting the Power-on Condition

Power Up Mode: Last-Set/Default
If the Power Up Mode is set to Last-Set, the settings that were in effect when the power was last turned off will be remembered, and the previous screen condition will be reproduced when the power is turned on again. If the Power Up Mode is set to Default, the state at power-off will not be remembered, and the SC-880 will always be in Patch mode when the power is turned on.

Turning Effects On/Off

The various "Effect Switch" parameters let you turn the effects (reverb, chorus, delay, multi-effect) on/off. You may wish to turn these settings off when you are listening to the original sound as you edit, or when you are using external effect devices instead of the built-in effects.
The "Effect Switch" page contains the following parameters for switching effects on/off.

> Multi-FX
> Reverb
> Chorus
> Delay
> EQ
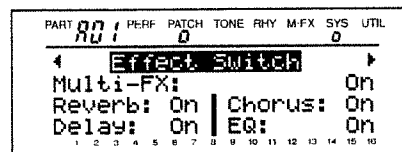
■ Turning the Multi-Effect On/Off

Multi-FX:On/Off
When "Multi-FX" is On, the multi-effect will be applied to each part as specified by the multi-effect On/Off setting that was made for each part.
When "Multi-FX" is Off, the multi-effect will be Off for all parts, regardless of the multi-effect On/Off setting that was made for each part.

■ Turning the Reverb On/Off

Reverb: On/Off
When "Reverb" is On, reverb will be applied according to the value that was specified for each part.
When "Reverb" is Off, reverb for all parts will be Off.

■ Turning the Chorus On/Off

Chorus: On/Off
When "Chorus" is On, Chorus will be applied according to the value that was specified for each part.
When "Chorus" is Off, Chorus for all parts will be Off.

■ Turning the Delay On/Off

Delay: On/Off

When "Delay" is On, Delay will be applied according to the value that was specified for each part.
When "Delay" is Off, Delay for all parts will be Off.

■ Turning the Equalizer On/Off

EQ: On/Off

When "EQ" is On, the equalizer will be applied to each part as specified by the On/Off setting that was made for each part.
When "EQ" is Off, the equalizer will be Off for all parts, regardless of the setting that was made for each part.

Settings Related to MIDI Message Routing

The SC-880 provides various parameters that determine how incoming MIDI messages are routed to the Parts. For some types of MIDI message, a switch is provided to turn reception on or off.
In the "MIDI" page you can set the following eight parameters.

    MIDI OUT/THRU
    Input Mode
    Rx Module Mode
    Device ID Number
    Rx GM On
    Rx GS Reset
    Control Channel
    Bulk Mode
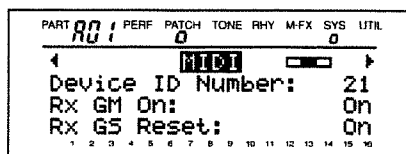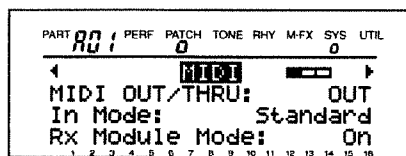
■ MIDI Output Setting

"MIDI OUT/THRU: OUT/THRU"

The MIDI OUT/THRU connector on the rear panel of the SC-880 can function either as a MIDI OUT or a MIDI THRU. When the MIDI OUT/THRU is set to OUT, the connector will function as MIDI OUT; when set to THRU, it will function as MIDI THRU.
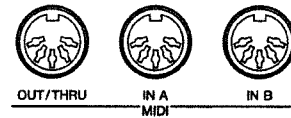
If THRU is selected, data received at MIDI IN A will be re-transmitted from the MIDI OUT/THRU connector. Data received at MIDI IN B will never be "thru-ed", regardless of the THRU setting, and regardless of the setting for Input Mode.
If OUT is selected, exclusive data or data received at the computer connector can be transmitted from the MIDI OUT/THRU connector. (p. 99, 117)

When the COMPUTER switch is set to MIDI

MIDI OUT/THRU: OUT
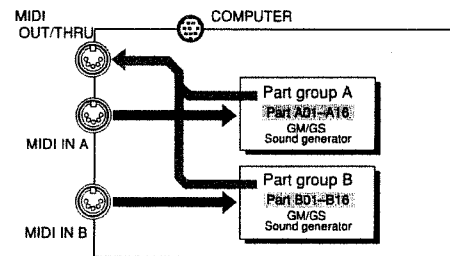
MIDI OUT/THRU: THRU

When the COMPUTER switch is set to PC-1, PC-2 or Mac

MIDI OUT/THRU: OUT

MIDI OUT/THRU: THRU
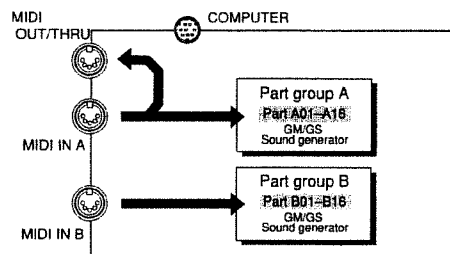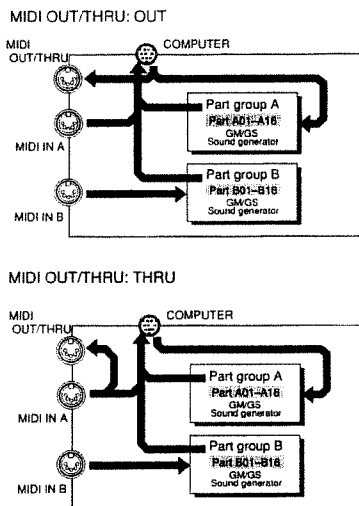
■ MIDI Input Setting

Input Mode: Standard/X-Connect/Merge→A/ Merge→B/A only

Standard, X-connect, Merge → A, Merge → B, A only

With the factory settings, MIDI messages received at MIDI IN A are passed to Part Group A Parts, and MIDI messages received at MIDI IN B are passed to Part Group B. In normal circumstances, there is no need to change the standard setting, but it is also possible to change the MIDI signal in the following. (diagram p. 118)

Standard

MIDI messages received at MIDI IN A are passed to Part Group A, and MIDI messages received at MIDI IN B are passed to Part Group B. Standard is the factory setting.

X-connect (Cross connect)

This reverses the handling of Standard. MIDI messages received at MIDI IN A are passed to Part Group B, and MIDI messages received at MIDI IN B are passed to Part Group A.

Merge → A

MIDI messages received at either MIDI IN A or MIDI IN B are sent to Part Group A. MIDI messages are not sent to Part Group B, so they will not sound. For example, you might use this setting when you wish to play Part Group A simultaneously from a MIDI keyboard and from a MIDI sequencer.

Merge → B

This reverses the handling of Merge → A. MIDI messages received at either MIDI IN A or MIDI IN B are sent to Part Group B. MIDI messages are not sent to Part Group A, so they will not sound.

A only

When using the Roland Super MPU (MIDI Processing Unit: two MIDI OUTs), some software will transmit the same data to both of the SC-880's MIDI IN connectors. This will cause two Parts to sound in unison, causing an unnatural effect. In such cases, do not use both MIDI INs. Either disconnect one of the MIDI cables, or use the preceding procedure to set it to A only. When at A only, data received at MIDI IN B will be ignored.

* Be aware that if the computer switch on the rear panel of the SC-880 is set to either PC-1, PC-2, or Mac, MIDI data received at MIDI IN A will not be sent to the Parts (the sound generator), but will be sent through the computer connector to the computer (p. 117).

* The data sent from the computer through the computer connector will be treated as received from MIDI IN A, and will be passed to the various Parts according to the Input Mode setting.

■ Module Mode Receive Switch Setting

Rx Module Mode: On/Off

The selection of Single Module Mode or Double Module Mode (p. 101) is called the System Mode. The Rx Module Mode setting is the receive switch for MIDI messages (System Mode Set p. 193) that select the System Mode. If Rx Module Mode is turned Off, the mode will not change even if System Mode Set messages are received. If Rx Module Mode is turned On, the mode will change.

Device ID Number Setting

Device ID Number: 1–17–32

The Device ID number is an identification number used when transmitting and receiving exclusive messages (p. 109). The SC-880 receives exclusive messages only if its own device ID number matches the device ID number of the message. This means that if you wish to transmit exclusive messages between devices, you must make sure that their device ID numbers match.

The device ID number is a number from 1–32. With the factory settings the number is 17.

* If you wish to play back Roland SMF music data, be sure that the device ID number is set to 17. If it is not, playback will not be correct.

* It is not possible to specify the device ID number separately for individual Parts.

■ Listening to General MIDI/GS Song Data

Rx GM On: On/Off
Rx GS Reset: On/Off
General MIDI System On and GS Reset (p. 109, 110) are MIDI exclusive messages that are included in the beginning of song data bearing the General MIDI or GS logo. When song data is played back from the beginning, these messages cause the sound generator parameters to be reset to basic values so that playback will be correct. Thus, when playing back song data bearing the General MIDI or GS logo, you should leave these parameters on. If these parameters are turned off, General MIDI System On and GS Reset messages will be ignored.

■ Using MIDI Messages to Select Patches and performances

Control Channel: Off/A01–A16/B01–B16
Normally, when a MIDI program change message is received, the tone of a part will change. However, if you specify the control channel, program changes can select patches (p. 107, 108) and performances (p. 178).
If the Control Channel is turned "Off," incoming program change messages will switch the tone of a part.

* With the factory settings, Control Channel is set to Off.

For example, with the following Control Channel and part MIDI channel settings,

Control Channel: A01
Part A01 MIDI CH: A01

An incoming program change [C0H 01H] on channel 1 will select patch "P-002 MILD OD," and part A01 will switch to the tone (TC Front Pick) that was specified by that patch.
If you wish to use program change messages to switch the tone of part A01, set the Control Channel to "Off."

* It takes a while until the sound can be heard after you change the Patch.

* When you switch the Module Mode (p. 101), Control Channel will be turned "Off."

* When "GM System On" or "GS Reset" are received, the Control Channel will be "OFF."

■ Setting the Model ID

Bulk Mode: Original/GS Compatible
When you wish to save SC-880 settings on another device, use a Bulk Dump (p. 99). A bulk dump consists of system exclusive messages (p. 109), and each system exclusive message contains a model ID that is unique to each device. System exclusive messages cannot be exchanged between devices with differing model ID numbers. The SC-880 has two model IDs: the "MODEL ID=42H" that is common to all GS devices, and the SC-880's own "MODEL ID=45H."

When "Bulk Mode" is set to "Original," the portions of the bulk dump that are common to all GS devices will be transmitted with ID number "42H," and the portions that were added on the SC-880 will be transmitted with the SC-880's own ID number "45H." For normal use you should set this to "Original."
When "Bulk Mode" is set to "GS Compatible," the entire bulk dump will be transmitted with model ID "42H." With a setting of "GS Compatible," there will be limitations on the content that can be transmitted by "Bulk Dump." (p. 99)
Use the "GS Compatible" setting when you are creating song data intended for playback on GS instruments, or when creating song data for playback on an SC-88/88 Pro.

Sound Generator Related Settings

"Sound" occupies two pages, and consists of the following five parameters.

Tone Set Range
Part Monitor
Backing Level
System OUT Mode
Patch Load Mode
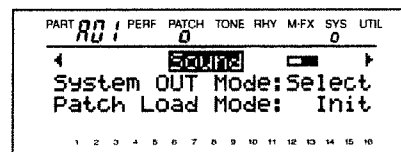
■ Limiting the Selection of Tone Sets

Tone Set Range: 1–3
Switching Tone Set Range here will limit the Tone Sets which can be selected. If you select Tone Set Range: 1 here, only Tone Set: 1 can be selected for the tone selection of each part. If you select Tone Set Range: 2, either Tone Set: 1 or Tone Set: 2 (not both) can be selected for the tone selection of each part. If you select Tone Set Range: 3, all tone sets will be available for selection. Normally you will set this to Tone Set Range 3.
This is convenient when you wish to listen to a song that was created on the SC-55/55Mk2 or SC-88, or when you wish to create a song for playback on the SC-55/55Mk2 or SC-88.

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Tone Set Range 1: The same sounds as the SC-55/55Mk2.
Tone Set Range 2: The same sounds as the SC-88.
Tone Set Range 3: The original tone set of the SC-880.

■ Listening to Just One Part

Part Monitor: On/Off

Part Monitor can be turned on when you want to listen to only one or more Parts that you select. This feature conveniently allows you to listen to only the instruments you want to hear during sequenced playback. When the Part Monitor is turned on, you can hear only the part that is shown in the upper left of the display. With the Part Monitor turned on, you can press [INFO] to increase the number of parts being monitored. Use PART [◄] [►] to select a part, and use the VALUE dial to turn it on/off.

■ Changing the Volume Ratio with Other Parts

Backing Level: 0%–99%

With the Part Monitor turned on, you can raise the Backing Level value to hear the sound of other parts as well. When the Backing Level value is 0, only the parts for which the Part Monitor is on will be heard.

■ Enabling the Output Destination Settings

System OUT Mode: Select/Fixed

This determines whether the OUT Assign (Output Assign) setting (p. 24) will be valid or not.

Select: The sound of each Part will be output as specified by the OUT Asgn settings.

Fixed: The output of each Part will be fixed as follows, regardless of the OUT Asgn settings.

For Single Module Mode:
Both Part Group A and B will be output in stereo with the effect sound from the Output 1 jacks.

Part Group A ─┐
          └─► OUTPUT 1 (Include effects)
Part Group B ─┘

For Double Module Mode:
The Part Group A will be output in stereo with the effect sound from the Output 1 jacks, and the Part Group B similarly from the Output 2 jacks.
In this case only, the Output 2 jacks will output sound that includes the effect sound.

Part Group A ──────► OUTPUT 1 (Includes effects)

Part Group B ──────► OUTPUT 2 (Includes effects)

* The headphone jack will output the sound that is sent to Output 1. This means that the sound of the Parts assigned to Output 2 will not be heard in the headphones.

* At the factory settings, this parameter is set to Select.

■ Selecting the Operation When a Patch Is Selected

Patch Load Mode: Init/Keep

Specify how each mode will operate when selecting patches.

Init: When a preset patch (P-001–P-128) is selected, the settings of Parts A03–B16 will be initialized.
When a user patch (U-001–U-128) is selected, the settings of Parts A07–B16 will be initialized.

Keep: When a preset patch (P-001–P-128) is selected, the settings of Parts A03–B16 will not be initialized, but will maintain the settings that were in effect before the patch was selected.
When a user patch (U-001–U-128) selected, the settings of Parts A07–B16 will not be initialized, but will maintain the settings that were in effect before the patch was selected. When a user patch is selected, any part A01–A06 whose Receive Channel (p. 25) is set to "A–" or "B–" will not be initialized, but will maintain the settings that were in effect before the patch was selected.

The factory setting is Init.

* In Double Module mode, the settings of Part group B will not be initialized.

Keeping Settings from Being Initialized

In the "Lock" page you can set the following parameters to prevent settings from being initialized.

    Output Assign Lock
    Mute Lock
    Equalizer Lock

```
PART АП ι  PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
    ЯЦ ι         0                       0
◀          LOCK                    ▶
Output Assign Lock:Off
Mute Lock:          Off
Equalizer Lock:     Off
  1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16
```
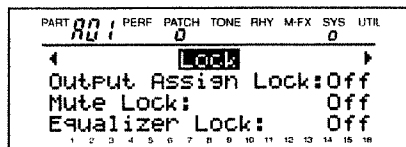
■ Preserving the Output Destination Settings from Initialization

Output Assign Lock: On/Off
The setting of OUT Assign (Output Assign) (p. 24) will return to the factory settings when GS Reset or General MIDI System On are received. However, if Assign Lock is turned On, these settings will not change.

■ Preserving Mute Settings from Initialization

Mute Lock: On/Off
When you once again play back a song that was previously played back, Part Mute settings (p. 23) are sometimes defeated. This is because the beginning of the song data contains a message that causes the SC-880 to reset to initial values (General MIDI System On/GS Reset p. 109, 110). If Mute Lock is turned on, muting will not be turned off even when GS Reset or General MIDI System On is received, so there will be no need for you to remake mute settings. This is convenient when, for example, you are repeatedly playing back a song with a certain Part muted so that you can play that Part yourself.

■ Preserving Equalizer Settings from Initialization

Equalizer Lock: On/Off
When a GS Reset or General MIDI System On message is received, the equalizer settings will be restored to the factory settings (initialized). If Equalizer Lock is turned on, this will not occur.

Settings related to the Phrase Preview function

When you press the VOLUME knob, the tone of the part shown in the upper left of the display will sound. In the "Preview" page you can set the following parameters which specify how notes will be sounded when you press the VOLUME knob.

    Mode
    Key
    Velo

```
PART АП ι  PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
    ЯЦ ι         0                       0
◀         PREVIEW          ▬▢    ▶
Mode:               Phrase
Key 1:  A4 | Vel 1:  100
  1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16
```

```
PART АП ι  PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
    ЯЦ ι         0                       0
◀         PREVIEW          ▢▬    ▶
Key 2:  C#5 | Vel 2:  100
Key 3:   E5 | Vel 3:  100
Key 4:   A5 | Vel 4:  100
  1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16
```
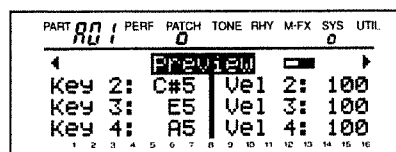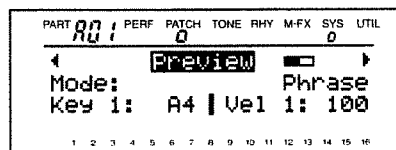
■ Specifying How Notes Will Sound

Mode: Phrase/Chord/Single
Specifies how notes will be sounded when you press the VOLUME knob.

    Phrase: A phrase suitable for the tone will be played.
    Chord: The notes specified by Note 1–4 will sound simultaneously.
    Single: The notes specified by Note 1–4 will sound successively each time you press the VOLUME knob.

■ Selecting the Notes That Will Sound

Key 1–4: C-1–G9
Specifies the names of the notes that will sound when the "Mode" setting is Chord or Single.
When the "Mode" setting is Single, the notes specified by Key 1–4 will sound cyclically, each time you press the VOLUME knob.
When the "Mode" setting is Chord, the notes specified for Key 1–4 will sound as a chord.

* *The A note in the center of the keyboard is A4.*

* *If you have set Key Shift,the pitch will be shifted (p. 23, p. 28)*

■ Selecting the Volume of the Notes That Sound

Velo 1–4: 0–127

Specifies the velocity value of the notes that will be sounded when the "Mode" setting is Chord or Single.

Normally, increasing the velocity values will increase the volume. (p. 24 Velocity sensitivity, etc.)

* *If Velo is set to 0, there will be no sound.*

Screen Display Settings

In "Display," you can set the following two display-related parameters.

    Display
    Peak Hold

■ Setting the Volume Level Display Format

Display: Type 1–Type 4

This parameter allows you to select one of the following 4 types of volume level display.

Type1

Type2

Type3

Type4

■ Setting the Maximum Volume Level Display

Peak Hold: Off/Type 1–Type 3

In the SC-880 display, the highest dot in the bar level display will be held on for a short time after the volume falls below it. You can select one of the following four ways in which this Peak Hold function will work.

    Off: The peak level will not be held
    Type 1: After holding the peak level, the peak level dot will move downward
    Type 2: After holding the peak level, the peak level dot will disappear
    Type 3: After holding the peak level, the peak level dot will move upward

About Utility Mode

Utility mode contains various convenient functions.
You can transmit SC-880 settings to another MIDI device for saving, restore the settings of the SC-880 to the factory-set condition, or copy/delete/exchange part settings.

* *Utility mode can be accessed from any mode.*

Utility mode contains the following pages.

> Bulk Dump
> Module Mode
> Initialize
> Part Transfer
> Factory Preset

Saving Sound Generator Settings on an External MIDI Device

The SC-880 can transmit the contents of its sound generator's memory as MIDI data. The data can be transmitted in two ways: Bulk Dump, which transmits multiple parameters as a group; and Individual Data, which allows parameters to be transmitted individually. All data is transmitted as System Exclusive messages.
Use Bulk Dump when you wish to save the settings of this unit on a sequencer or personal computer. By transmitting a Bulk Dump, you can also set all parameters of two units to identical settings.
By transmitting Individual Data, you can create data without having to look up individual System Exclusive messages, letting you create data more efficiently.
Here we will explain how you can connect the SC-880 to a sequencer and save the SC-880's settings on the sequencer.

■ Transmitting a Bulk Dump

1. Set the MIDI OUT/THRU (p. 93) select switch to OUT.

2. Use a MIDI cable to connect the SC-880 MIDI OUT/THRU connector to the sequencer's MIDI IN connector.

MIDI OUT

MIDI IN
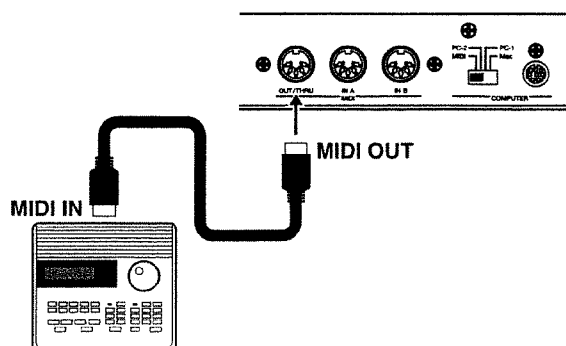
MIDI sequencer etc.

3. Press [UTILITY] to make the indicator light.

4. Use CURSOR [▲] to move the cursor to the menu name.

5. Select "Bulk Dump," by rotating the VALUE dial.
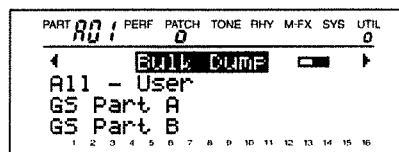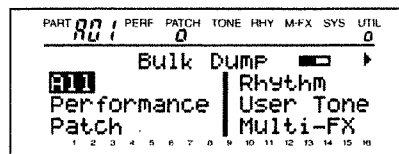
6. Use CURSOR [▲] [▼] [◄] [►] to select the data that will be transmitted.

All:	all parameters of the SC-880 (Including User parameters)S
Performance:	Creating your own User Performance
Patch:	Creating your own User Patch
Rhythm:	Creating your own User Rhythm Set
User Tone:	Creating your own User Tone
Multi-FX:	Creating your own User Multi-Effects
All-User:	all parameters except User Parameter (User tone, User Rhythm Set, User Effect, User Performance and User Patch) settings.
GS-A:	GS parameters for Part group A
GS-B:	GS parameters for Part group B

* *The contents that will be transmitted will depend on the "Bulk Mode" (p. 95). If you are creating song data for the SC-88 Pro, or if you will be using SC-880 settings on the SC-88 Pro, set "Bulk Mode" to Compatible. For details on the contents that will be transmitted, refer to "About Bulk Mode" (p. 100).*

7. Press [ENTER].

transmit start number
transmit end number
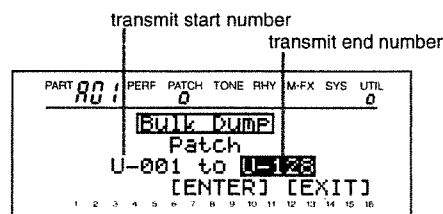
* *If you have selected "All," "All-User," "GS-A" or "GS-B," skip steps 8–11 and continue the procedure from step 12.*

8. Use CURSOR [◄] [►] to move the cursor to the transmit start number.

9. Rotate the VALUE dial to adjust the value.

10. Use CURSOR [◄] [►] to move the cursor to the transmit end number.

11. Rotate the VALUE dial to adjust the value.

12. PRESS [ENTER].

You will be asked for confirmation. To halt the bulk dump, press [EXIT].

13. Start recording on the sequencer.

14. Press [ENTER], and data transmission will begin.

```
PART AU I    PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
  AU I             0                          0
            [Bulk Dump]
              Patch
        Transmitting...
      1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
```

While the SC-880 transmits data, the display will indicate "Transmitting." To halt transmission, press [EXIT].
When transmission ends, the "Transmitting" display will disappear.

15. When the SC-880 finishes transmitting the data, stop recording on the sequencer.

* *Since this operation transmits a large amount of data, make sure that the receiving MIDI device has sufficient memory. If the receiving device has insufficient memory, recording will not be completed. The data sizes of the bulk dumps transmitted by the SC-880 are as follows.*

All:	approximately 360K (approximately 3 minutes are required for transmission)
Performance:	approximately 70K
Patch:	approximately 230K
Rhythm:	approximately 30K
User Tone:	approximately 4K
Multi-FX:	approximately 3K
All-User:	approximately 20K
GS-A:	approximately 10K
GS-B:	approximately 10K

* *"Performance," "Patch," "Rhythm," "User Tone" and "Multi-FX" data amounts are for when all data is transmitted.*

About Bulk Mode

The model ID numbers included in the bulk data transmitted by the SC-880 can be specified by the "Bulk Mode" (p. 95) setting.
When "Bulk Mode" is set to Compatible, setting "Bulk Dump" to "All," "Performance," "Patch" or "Rhythm" will restrict the transmitted contents as follows.

All: Only parts A01 and A02 of user patches will be transmitted.
Only user patches U-001–U-016 will be transmitted.
User performance settings will not be transmitted.
Only user rhythm settings U01 and U02 will be transmitted.

Patch: Only parts A01 and A02 of user patches will be transmitted.
Only user patches U-001–U-016 will be transmitted.

Performance: User performance settings will not be transmitted.
When Bulk Dump transmission is executed, the following display will appear.

```
PART AU I    PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
  AU I             0                          0
            [Bulk Dump]
            Performance
        Bulk Mode:  GS
      1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
```
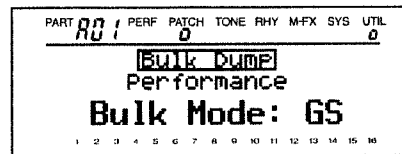
Rhythm: Only user rhythm settings U-01 and U-02 can be transmitted.
If you execute transmission of user rhythms U-03–U-016, the following display will appear.

```
PART AU I    PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
  AU I             0                          0
            [Bulk Dump]
            Rhythm Set
        Bulk Mode:  GS
      1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
```

■ Transmitting Individual Data

For the types of parameters which can be transmitted as Individual Data, refer to p. 123 "Quick Reference of Displays".

* *Data for the following parameters cannot be transmitted.*

    Device ID Number
    MUTE Lock
    Equalizer Lock
    Rx GM On
    Rx GS Reset

1. Move the cursor to the parameter for which you wish to transmit individual data.

```
PART RU I  PERF PATCH TONE RHY M-FX SYS UTIL
              0    0
              Output        ━□ ▶
Level:                        100
Mute:                         Off
Pan:                            0
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
```
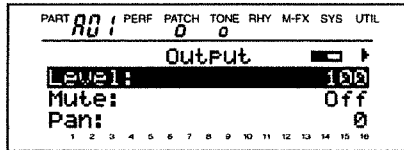
2. Start recording on the sequencer.

3. Press [ENTER].

4. Use CURSOR [◄] [►] to select "GS" or "GM."

```
PART RU I  PERF PATCH TONE RHY M-FX SYS UTIL
              0    0
              Output        ━□ ▶
Level:                        100
       Transmitting...
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
```
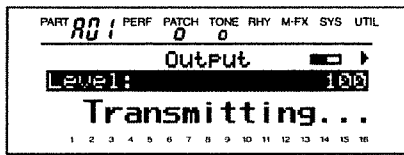
* *The data will not be transmitted when MIDI OUT/THRU (p. 93) is set to THRU.*

```
MIDI OUT/THRU: OUT
COMPUTER switch: MIDI
```
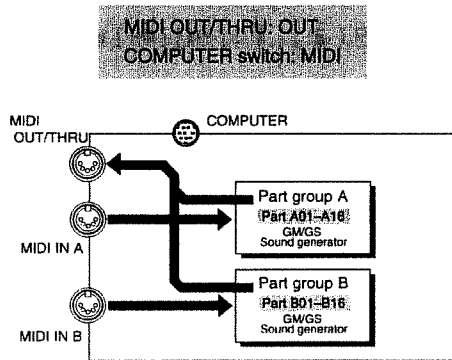

* *It is also possible to transfer data to a computer via the computer connector without using the MIDI connectors. (p. 115)*

```
MIDI OUT/THRU: OUT
COMPUTER switch: MAC, PC-1, PC-2
```
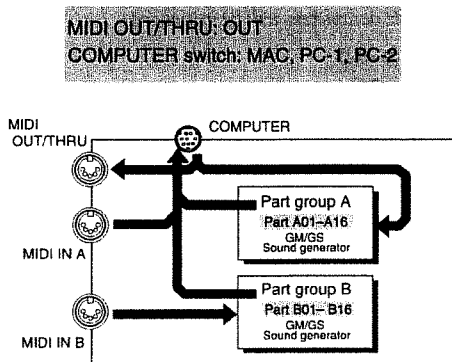

■ Using the SC-880 As Two Sound Modules

Module Mode

The SC-880 has two system modes: **Single Module Mode (Single)** and **Double Module Mode (Double)**. When Double Module Mode is selected, two types of system effect can be used simultaneously. For example, you could use different types of reverb on Rhythm Parts than on Normal Parts. Other parameters can also be set separately in two groups. Multi-effects can be used only for Part Group A. Normally the SC-880 is in Single Module Mode. In the "Module Mode" page you can set the Module Mode.

1. Press [UTILITY] to make the indicator light.

2. Use CURSOR [▲] to move the cursor to the menu name.

3. Select "Module Mode," by rotating the VALUE dial.

4. Use CURSOR [▲] [▼] [◄] [►] to select "Single" or "Double."

Single: The Module Mode is set to single module mode.

Double: The Module Mode is set to double module mode.

```
PART RU I  PERF PATCH TONE RHY M-FX SYS UTIL
              0                        0
   ◄      Module Mode        ▶
      Single  |  Double
 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
```
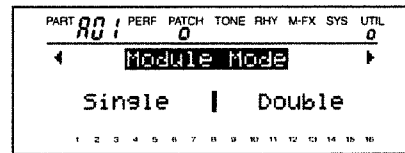
5. PRESS [ENTER].
You will be asked for confirmation. To cancel the setting, press [EXIT].

6. PRESS [ENTER].
The SC-880 will switch to the selected module mode.

When Double Module mode is selected, some pages will show an A or B at the right of the menu name. This indicates whether you are setting the parameters of part group A or B. Pages in which A or B is displayed contain two sets of parameters, for part groups A and B respectively.

```
PART RU I  PERF PATCH TONE RHY M-FX SYS UTIL
              0
   ◄      Master Control A     ▶
Level: 127  Pan:           0
Master Tune:        440.0Hz
Key Shift:             ± 0
```

```
PART RU I  PERF PATCH TONE RHY M-FX SYS UTIL
              0
   ◄      Master Control B     ▶
Level: 127  Pan:           0
Master Tune:        440.0Hz
Key Shift:             ± 0
```

101
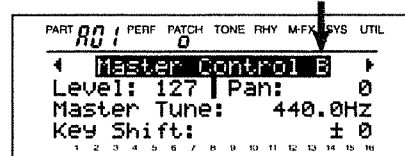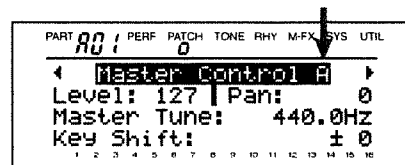
* *The selection of Single Module Mode or Double Module Mode is remembered when the power is turned off. The system mode will not change even if the power is turned off and then on again.*

* *Be aware that if you change the operating module mode, the settings of each Part will be initialized (GS Reset).*

In both Single Module Mode and Double Module Mode, MIDI messages received at MIDI IN A are sent to Part Group A, and MIDI messages received at MIDI IN B are sent to Part Group B (p. 18). Be aware that the route by which data is passed between the two MIDI IN connectors and each Part is determined by the System parameter Input Mode. (p. 94) It is possible to specify the address for Exclusive messages so that an Exclusive message received at MIDI A will be passed to Part Group B. (p. 111)

In Double Module Mode, two groups are provided for the following parameters.

    Patch Name

    Performance Name

    Master Control
        Level (p. 22)
        Pan (p. 22)
        Master Tune (p. 23)
        Key Shift (p. 23)

    Reverb (p. 42)
        Type
        Level
        Character
        Pre-LPF
        Time
        Delay Feedback

    Chorus (p. 44)
        Type
        Level
        Feedback
        Pre-LPF
        Delay
        Rate
        Depth
        Send to Reverb

    Effect Switch (p. 92)
        Reverb
        Chorus

    MIDI
        Device ID Number (p.94)
        Rx GM On (p. 95)
        Rx GS (p. 95)

    Lock
        Mute Lock (p. 97)

Initializing for General MIDI/GS

GS
GM

When you wish to play back song data carrying the General MIDI/GS logo, you need to initialize this unit for General MIDI/GS settings. When this is done, this unit will be set to the basic General MIDI/GS settings appropriate for playing back song data carrying the General MIDI/GS logo.

The beginning of song data carrying the General MIDI/GS logo contains data which requests the sound generator to initialize itself (General MIDI System On, GS Reset p. 109, 110).This means that if you are playing back the song data from the beginning, initialization will be done automatically, and there is no need for you to do it using the front panel buttons.

1. Press [UTILITY] to make the indicator light.

2. Use CURSOR [▲] to move the cursor to the menu name.

3. Select "Initialize," by rotating the VALUE dial.

4. Use CURSOR [▲] [▼] [◄] [►] to select "GS" or "GM."
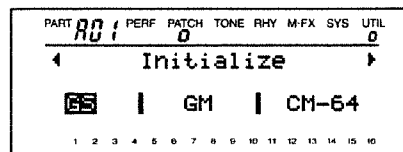
5. Press [ENTER].
You will be asked for confirmation. To cancel initialization, press [EXIT].

6. Press [ENTER].
Initialization will be executed.

* *When you initialize for General MIDI/GS, only the following System mode parameters will be initialized.*

    Multi-FX (p. 92)
    Reverb (p. 92)
    Chorus (p. 92)
    Delay (p. 93)
    Control Channel (p. 95)

■ Selecting the CM-64 Sound Map

CM-64

The SC-880 allows you to select the sound map of the Roland CM-64 (multitimbral sound module). When you wish to play back song data that was created for the CM-64, use the following procedure.

1. Press [UTILITY] to make the indicator light.

2. Use CURSOR [▲] to move the cursor to the menu name.

3. Select "Initialize," by rotating the VALUE dial.

4. Use CURSOR [◄] [►] to move the cursor to "CM-64."
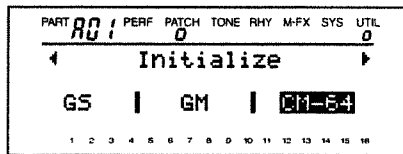
```
PART ΑΠ ι PERF PATCH TONE RHY M-FX SYS UTIL
     ΗU ι       0                        0
◄           Initialize              ►

  GS   |   GM   |  CM-64
  1 2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
```

5. Press [ENTER].
You will be asked for confirmation. To cancel initialization, press [EXIT].

6. Press [ENTER].
The CM-64 sound map will be selected.

* *Be aware that when you select the CM-64 sound map, all previous settings will be lost.*

When you select the CM-64 sound map, the settings of each part will be as follows for both part groups A and B.

Part name	Rx.Channel	Tone (VARIATION/TONE No.)		LEVEL	PAN	REVERB	CHORUS	KEY SHIFT
1	1	Acou Piano 1	(127/001)	100	0	64	0	0
2	2	Slap Bass 1	(127/069)	100	L10	64	0	0
3	3	Str Sect 1	(127/049)	100	L10	64	0	0
4	4	Brs Sect 1	(127/096)	100	L10	64	0	0
5	5	Sax 1	(127/079)	100	L10	64	0	0
6	6	Ice Rain	(127/042)	100	L46	64	0	0
7	7	Elec Piano 1	(127/004)	100	R27	64	0	0
8	8	Bottleblow	(127/111)	100	L63	64	0	0
9	9	Orche Hit	(127/123)	100	R63	64	0	0
10	10	CM-64/32L Set	(128)	100	0	64	0	0
11	11	FRETLESS 1	(126/028)	100	0	64	0	0
12	12	CHOIR 1	(126/030)	100	R17	64	0	0
13	13	A.PIANO 1	(126/001)	100	0	64	0	0
14	14	E.ORGAN 2	(126/038)	100	R35	64	0	0
15	15	E.GUITAR 1	(126/014)	100	L37	64	0	0
16	16	SOFT TP 1	(126/047)	100	L19	64	0	0

* *Bnd Range: +12,   Mod LFO Pch: +4*

* *The names of these sounds are identical to the names on the CM-64, so they differ from what they are called on this unit.*

LEVEL	PAN	REVERB	CHORUS	KEY SHIFT
127	0	64	64	±0

● Differences Between the CM-64 and the SC-880

When the CM-64 sound map is selected, the playback result will be the same as if a CM-64 were used. However, since the internal structure of the sound generator is different, the result is not absolutely identical. Please be aware of the following main differences.

1. How the sounds change

When velocity, modulation, and aftertouch, etc., are used to add expression, the sounds will change in a way slightly different than the CM-64.

2. Exclusive data

The SC-880 is not compatible with Exclusive data from the CM-64. If the CM-64's Exclusive data is received, this unit's settings will not change. This means that if the song data contains CM-64 sound data (Exclusive data), playing back that song data will not have the same result as it would have on the CM-64.

3. Pan

The SC-880's pan settings are opposite to those of the CM-64. Please reverse the left/right (L/R) connections of the audio output jacks.

Part-Related Functions

In the "PART TRANSFER" page, the following three parameters allow you to copy, delete, or exchange part settings.

    Copy
    Clear
    Exchange

```
PART ΑΠ ι PERF PATCH TONE RHY M-FX SYS UTIL
     ΗU ι       0                        0
◄         Part Transfer            ►

  Copy  |  Clear  |  Exchange
  1 2  3  4  5  6  7  8  9 10 11 12 13 14 15 16
```
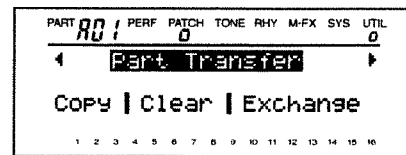
■ Copying Settings to Another Part

You can copy the settings of a part to another part.

* *When a rhythm part is copied to a different part group, the copy source settings will be reflected in the rhythm set settings of the same rhythm part of the copy destination.*

1. Press [UTILITY] to make the indicator light.

2. Use CURSOR [▲] to move the cursor to the menu name.

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3. Select "Part Transfer," by rotating the VALUE dial.

4. Use CURSOR [◄] [►] to move the cursor to "Copy."

5. PRESS [ENTER].

copy source part
copy destination part

```
PART ΠΠ I  PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
     ΠU I          O                         O
        Part Transfer
Copy:    ┗━A01 → A02
            [ENTER] [EXIT]
     1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
```
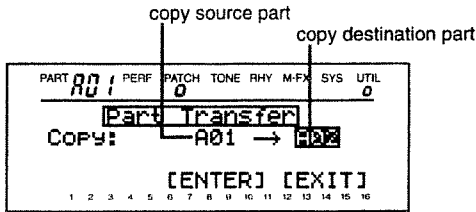
6. Use CURSOR [◄] [►] to move the cursor to the copy source.

7. Rotate the VALUE dial to specify the copy source part.

8. Use CURSOR [◄] [►] to move the cursor to the copy destination.

9. Rotate the VALUE dial to specify the copy destination part.

10. PRESS [ENTER].
You will be asked for confirmation. To cancel, press [EXIT].

11. PRESS [ENTER].
The settings will be copied.
The copy source and copy destination will have the same settings.

■ Deleting Settings

You can delete the settings of the selected part to initialize them.

1. Press [UTILITY] to make the indicator light.

2. Use CURSOR [▲] to move the cursor to the menu name.

3. Select "Part Transfer," by rotating the VALUE dial.

4. Use CURSOR [◄] [►] to move the cursor to "Clear."

5. PRESS [ENTER].

```
PART ΠΠ I  PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
     ΠU I          O                         O
        Part Transfer
Clear:                  A01
            [ENTER] [EXIT]
     1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
```
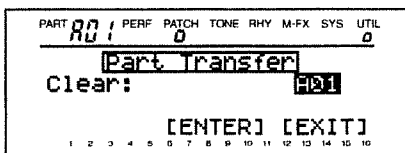
6. Rotate the VALUE dial to select the part whose settings you wish to delete.

7. PRESS [ENTER].
You will be asked for confirmation. To cancel, press [EXIT].

8. PRESS [ENTER].
The settings will be deleted.

* *The settings of the deleted part will be initialized.*

■ Exchanging Settings with Another Part

Settings of the selected part can be exchanged with another part.

1. Press [UTILITY] to make the indicator light.

2. Use CURSOR [▲] to move the cursor to the menu name.

3. Select "Part Transfer," by rotating the VALUE dial.

4. Use CURSOR [◄] [►] to move the cursor to "Exchange."

5. PRESS [ENTER].

exchange source part
exchange destination part

```
PART ΠΠ I  PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
     ΠU I          O                         O
          Part Transfer
Exchange: ┗A01 ↔ A02
            [ENTER] [EXIT]
     1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
```
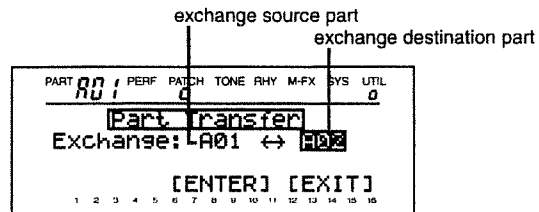
6. Use CURSOR [◄] [►] to move the cursor to the exchange source part.

7. Rotate the VALUE dial to specify the exchange source part.

8. Use CURSOR [◄] [►] to move the cursor to the exchange destination part.

9. Rotate the VALUE dial to specify the exchange destination part.

10. PRESS [ENTER].
You will be asked for confirmation. To cancel, press [EXIT].

11. PRESS [ENTER].
The settings will be exchanged.

Bringing Back the Factory Settings

In the "Factory Preset" page you can restore all settings of the SC-880 to their factory-set condition, or return the contents of user patches to their factory-set condition.

Factory Preset

```
PART ΠΠ I  PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
     ΠU I          O                         O
   ◄    Factory Preset
        All  |  Patch
     1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16
```
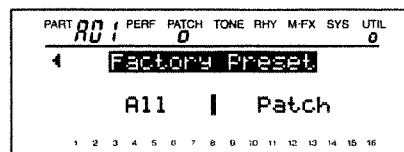
■ Returning All Data to the Factory Settings

Restore all settings of the SC-880 to their factory-set values.

* *Be aware that when you execute Factory Preset, the entire contents that was saved in User memory will be lost.*

1. Press [UTILITY] to make the indicator light.

2. Use CURSOR [▲] to move the cursor to the menu name.

3. Select "Factory Preset," by rotating the VALUE dial.

4. Press CURSOR [▼] to move the cursor to "All."

```
PART  AU  I  PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
      AU  I         0                              0
           [Factory Preset]
                  All
       Sure?   [ENTER]  [EXIT]
      1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16
```
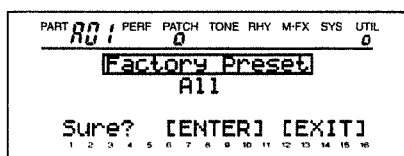
5. Press [ENTER].
You will be asked for confirmation. To cancel, press [EXIT].

6. Press [ENTER].
Restore all settings of the SC-880 to their factory-set values.

* *To cancel the procedure without executing, press [EXIT]. Once the Factory Preset operation has begun, it is not possible to cancel.*

* *When you execute the Factory Preset operation, the screen display values of the following parameters will return to their factory-set values, but the actual settings will not have been initialized. You must turn the power off and on again for initialization to take effect for these parameters.*

    MIDI OUT/THRU (p. 93)
    Input Mode (p. 94)

■ Returning a User Patch to the Factory Settings

When a patch that you create is saved as a user patch, the factory settings that had been stored in that user patch will be lost. In the "Factory Preset" page you can return any desired user patch to its factory settings.

1. Press [UTILITY] to make the indicator light.

2. Use CURSOR [▲] to move the cursor to the menu name.

3. Select "Factory Preset," by rotating the VALUE dial.

4. Use CURSOR [▲] [▼] [◄] [►] to move the cursor to "Patch."

5. Press [ENTER].

```
PART  AU  I  PERF  PATCH  TONE  RHY  M-FX  SYS  UTIL
      AU  I                                        0
           [Factory Preset]
                 Patch
        U-001  →  U-001
              [ENTER]  [EXIT]
      1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16
```
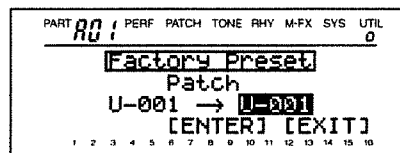
6. Rotate the VALUE dial to select the user patch number which you wish to return to its factory settings.

7. Press CURSOR [►] to move the cursor to the user patch number whose settings you wish to save.

8. Rotate the VALUE dial to select the user patch number in which you wish to save the factory-set user patch settings.

9. Press [ENTER].
You will be asked whether or not you wish to save. If you decide not to save, press [EXIT].

10. Press [ENTER] to save the factory settings.

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Chapter 8 MIDI and the SC-880

About MIDI

MIDI stands for "Musical Instrument Digital Interface." MIDI devices can transmit musically related data, such as performance data or data to select sounds. Since MIDI is a worldwide standard, musical data can be sent and received between devices even if they are of different types and were made by different manufacturers. In the MIDI standard, information describing events in a musical performance, such as "a note was played" or "the pedal was depressed," is transmitted as MIDI messages.

As long as you are using the SC-880 to simply play commercially available music data or to provide sound for game software, it is not necessary to know about MIDI. Simply follow the instructions in the manual for your music data playback device (MIDI player), or your software.

The explanations that follows will help you to use MIDI to control the SC-880 with greater precision.

About MIDI Implementation Charts

MIDI allows many different types of device to be connected, but in some cases there will be types of message which cannot be conveyed meaningfully. For example, if you wish to use keyboard aftertouch to control the sound but the sound generator connected to the keyboard does not receive aftertouch messages, you will not get the musical result you intend. In this way, only messages that are used by both devices will actually be conveyed.

The MIDI specification requires that the owner's manual for each MIDI device include a "MIDI Implementation Chart" (p. 208) that shows the types of MIDI message which are actually transmitted and received by a device. Place the transmit column of the transmitting device's implementation chart side by side with the receive column of the receiving device's implementation chart. Messages which are marked as "O" in both charts can be conveyed successfully. If either chart shows a "X" for a certain type of message, that message cannot be conveyed.

For your reference, the data format for exclusive messages and other details of the SC-880 MIDI implementation are given on p. 178 and following.

■ How MIDI Messages Are Transmitted and Received

First, we will briefly explain how MIDI messages are transmitted and received.

MIDI connectors

MIDI messages are transmitted and received using three types of connectors. Connect MIDI cables to these connectors as appropriate for your setup.

to another MIDI device

from another MIDI device
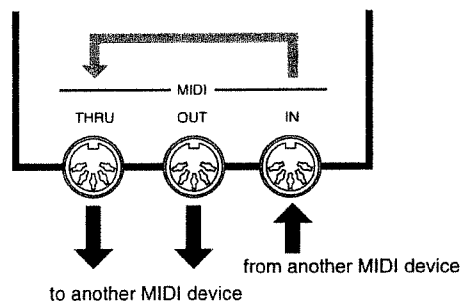
MIDI IN: This connector receives messages from another MIDI device.

MIDI OUT: This connector transmits messages from the SC-880.

MIDI THRU: This connector re-transmits the messages received at MIDI IN.

* It is possible to use MIDI THRU to connect two or more MIDI devices, but in practice the limit is 5 units. This is because as the signal path becomes longer, the signal deteriorates and the messages can no longer be received correctly.

* On the SC-880, MIDI THRU and MIDI OUT share the same connector. The MIDI OUT/THRU (p. 93) determines which function the connector will have.
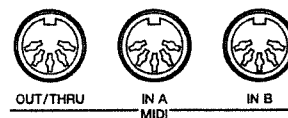
■ MIDI Channels and Multitimbral Sound Modules

MIDI transmits a wide variety of performance data over a single MIDI cable. This is made possible by MIDI channels. MIDI channels allow specific data to be selected out of a large amount of data. The concept is similar to the idea of TV channels. By changing the channel of a TV receiver you can view the programs of different stations. By setting the channel of the receiver to match the channel of the transmitter, you can receive only the program you wish to watch. In the same way, MIDI allows you to receive data only when the channel of the receiver matches the channel of the transmitter.

The cable from the antenna carries the TV signals from many broadcast stations.

The TV is set to the channel of the station you wish to watch.
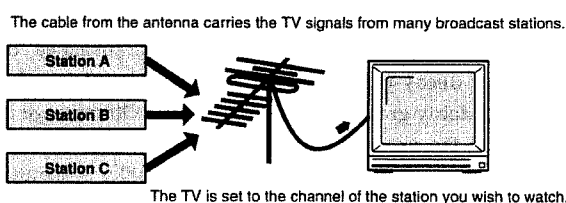
MIDI provides sixteen channels, numbered 1–16. Music data is received when the transmit channel of the transmitting device matches the receive channel of the receiving device. If you make the MIDI channel settings shown in Fig. 1, only sound module B will sound when you play the keyboard—sound module A will remain silent. This is because sound module B matches the transmit channel of the keyboard, but sound module A's channel does not match.

Conversely, if you set the transmit channel of the keyboard to match sound module A, sound module A will sound (Fig. 2).
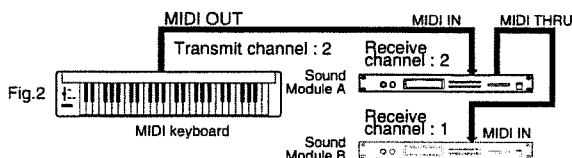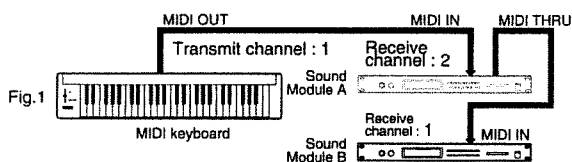
Since the SC-880 has two MIDI IN connectors, it can receive a total of 32 channels simultaneously. By using 32 channels you can play ensembles of 32 Parts (p. 18). Sound modules such as the SC-880, which are able to simultaneously play many parts, are called multitimbral sound modules. "Timbre" refers to the quality of a tone that distinguishes it from others.

The SC-880 has two types of Parts: Normal Parts and Rhythm Parts (p. 27). Normal Parts are used to play melody or bass lines. On General MIDI/GS sound generators, the Rhythm Part uses channel 10.

MIDI Messages That Can Be Received by the SC-880

MIDI uses many different types of message to transmit musical performance data, and there are many types of MIDI message. For example, information describing which keys were played, and how strongly is transmitted as Note messages.

The way that a device responds when it receives each type of MIDI message (i.e., how it produces sound, etc.) will depend on the specifications of that device. This means that if the receiving device is not able to perform the function requested by the incoming message, the musical result will not be what you expect.

The main types of MIDI message received by the SC-880 are as follows.

* MIDI messages for which reception capability is required by the General MIDI system (level 1) are marked by a (☆) sign.

● Note messages ☆

These messages convey notes played on the keyboard. They include the following information.

Note number: a number indicating the note (key) that was pressed or released

Note on: data indicating that the note (key) was pressed

Note off: data indicating that the note (key) was released

Velocity: a number indicating how strongly the note (key) was pressed

Note numbers are a number from 0–127 which designate the position of a key on the keyboard, with middle C (C4) as note number 60.
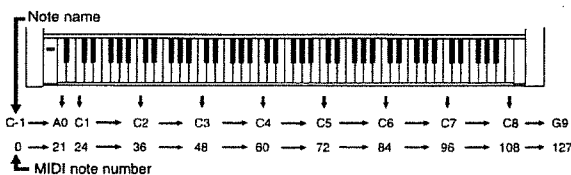
● Pitch Bend ☆

This message conveys the position of the bender lever (or pitch bend wheel). The pitch will change when this message is received.

● Bank Select (Control Change number 0 and 32)
● Program Change ☆

These messages are used to select sounds. Sounds are selected by a Program numbers 1–128. On the SC-880, these messages will select sounds (tones). By using Bank Select messages (which are a type of Control Change message), an even wider variety of sounds can be selected (p. 110). These messages can also be used to select Patches (p. 95). However, if settings have been made to allow Patches to be selected, the program change message for each Part will be ignored.

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● Control Change

These messages control parameters such as modulation and pan. The function of the message is determined by its Control Change number.

○ Modulation (control change number 1) ☆
This message controls vibrato.

○ Volume (control change number 7) ☆
This message controls the volume of a Part. When this message is received the volume of a Part will change.

○ Expression (control change number 11) ☆
This message conveys volume changes. It can be used to add expression during a song.

* *The volume of a Part will be affected both by Volume messages (control change 7) and by Expression messages (control change 11). If a value of 0 is received for either of these messages, the Part volume will be 0 and will not rise even if the other message is sent with a higher value. Be aware of this.*

Using Volume and Expression

It is convenient to use Volume and Expression for separate purposes, as follows.

Volume: Adjust the volume balance between parts (Specify at the beginning of the song)

Expression: Modify the volume during the song (Use to create crescendo and decrescendo, etc.)

If volume changes during a song are created using only Volume messages, adjusting the volume balance between parts will require you to modify all volume data in the entire song, which is quite inconvenient. It is much more convenient to use Volume messages only at the beginning of the song and use Expression messages to create volume changes during the song. For example, if you set a Volume value of 100 for each part at the beginning of the song and use Expression messages to change the volume during the song, the balance between parts can be adjusted simply by modifying the Volume data values at the beginning of the song, and the changes during the song will remain as they are. This is convenient in cases when (for example) you want to make a slight adjustment in the balance of the piano and bass.

○ Pan (control change number 10) ☆
This message controls the stereo position of a Part. (p. 22, 24)

○ Hold (1) (control change number 64) ☆
This message conveys the up/down movements of the damper pedal, causing the currently sounding notes to be sustained. When a message of Hold On is received, notes will be sustained. In the case of decay-type instruments such as a piano, the sound will decay gradually until a Hold Off message is received. In the case of sustain-type instruments such as an organ, the sound will continue sustaining until a Hold Off message is received.

○ Sostenuto (control change number 66)
The sostenuto pedal on a piano sustains only the notes which were already sounding at the moment the pedal was pressed. The Sostenuto message conveys the movement of this pedal. When Sostenuto On is received, only the notes which were already on at that moment will be sustained. In the case of decay-type instruments such as a piano, the sound will decay gradually until a Sostenuto Off message is received. In the case of sustain-type instruments such as an organ, the sound will continue sustaining until a Sostenuto Off message is received.

○ Soft (control change number 67)
The soft pedal on a piano softens the tone during the time the pedal is pressed. The Soft message conveys the movement of this pedal. When Soft On is received, the cutoff frequency will be lowered, causing a softer sound. When Soft Off is received, the previous sound will return.

○ Reverb Send Level (control change number 91)
This message adds a reverb effect to the Part (p. 42).

○ Chorus Send Level (control change number 93)
This message adds a chorus effect to the Part (p. 44)

○ Delay Send Level (control change number 94)
This message adds a delay effect to the Part (p. 45).

○ Portamento (control change number 65)
○ Portamento Time (control change number 5)
○ Portamento Control (control change number 84)
Portamento is an effect that creates a smooth change in pitch between the previously played note and the newly played note. When a Portamento message is received, the portamento effect will be turned on or off. Portamento Time controls the speed of the pitch change. Portamento Control specifies the Source Note number (the previously played note).

○ RPN LSB, MSB (control change number 100/101) ☆
○ Data Entry (control change number 6/38) ☆
Since the function of the RPN (Registered Parameter Number) is defined in the MIDI specification, this message can be used between devices of different types. The RPN MSB and LSB messages specify the parameter which is to be modified, and then Data Entry messages can be used to modify the value of that parameter. RPN can be used to adjust Pitch Bend Sensitivity, Master Coarse Tune, and Master Fine Tune.

* *The values modified using RPN messages will not be initialized even if Program Change messages, etc., are received to select other sounds.*

○ **NRPN LSB, MSB (control change number 98/99)**
○ **Data Entry (control change number 6/38)**

NRPN (Non-registered Parameter Number) messages can be used to modify the values of sound parameters unique to a particular device. The NRPN MSB and LSB messages specify the parameter which is to be modified, and then Data Entry messages can be used to modify the value of that parameter. Since the GS format defines the function of several NRPN messages, GS compatible application programs can use NRPN messages to modify sound data parameters for Vibrato, Cutoff Frequency, Resonance, and Envelope values.

* *The values modified using NRPN messages will not be initialized even if Program Change messages, etc., are received to select other sounds.*

* *With the factory settings, the SC-880 will ignore NRPN messages. After a GS Reset message is received, NRPN messages will be received. You can also turn NRPN on (p. 25) either from the front panel or by using exclusive messages, so that NRPN messages will be received.*

● **Aftertouch (Channel Pressure only)** ☆

Aftertouch is a message which conveys the pressure applied to the keyboard after playing a note, so that this information can be used to control various aspects of the sound. There are two types of aftertouch message; Polyphonic Key Pressure which is transmitted separately for each note, and Channel Key Pressure which is transmitted as one value that affects all notes on the specified MIDI channel.

* *With the factory settings, Aftertouch messages will have no effect when received by the SC-880. In order for Aftertouch messages to do something, you need to set Aftertouch-related parameters. (p. 31).*

● **All Sounds Off**

This message completely turns off the sound of all currently sounding notes. The sound of the specified channel will be forcibly turned off.

● **All Notes Off** ☆

This message causes a Note Off to be sent to each note of the specified channel that is currently on. However, if Hold 1 or Sostenuto are on, the sound will continue until these are turned off.

● **Reset All Controllers** ☆

This message returns controller values to their initial settings. The following controller values for the specified channel will be reset to their initial values.

Controller	Initial value
Pitch Bend	0 (center)
Polyphonic Key Pressure	0 (minimum)
Channel Pressure	0 (minimum)
Modulation	0 (minimum)
Expression	127 (maximum)
Hold	0 (off)
Portamento	0 (off)
Soft	0 (off)
Sostenuto	0 (off)
RPN	number unset
NRPN	number unset

* *Parameter values that were modified using RPN or NRPN will not change even when a Reset All Controllers message is received.*

● **Active Sensing**

This message is used to check for broken MIDI connections, such as MIDI connectors that have been pulled out, or MIDI cables that have been damaged. The SC-880 transmits Active Sensing messages from MIDI OUT at specific intervals. Once an Active Sensing message is received at MIDI IN, Active Sensing monitoring will begin, and if an Active Sensing message fails to arrive for more than 420 milliseconds, it is assumed that the cable has been disconnected. If this happens, all currently sounding notes are turned off, the same procedures that would take place if a Reset All Controllers message were received are carried out, and Active Sensing monitoring stops.

● **System Exclusive messages**

Exclusive messages are used to control functions which are unique to specific devices. Although Universal System Exclusive messages can be used even between devices of different manufacturers, most exclusive messages cannot be used between devices of different types or different manufacturers.

In order to recognize the device for which the data is intended, Roland exclusive messages contain a manufacturer ID, device ID and model ID.

The SC-880 exclusive messages use two model IDs; 42H for GS format, and 45H for SC-55 (88). The two numbers are used depending on the parameter you wish to modify. Be aware that if the appropriate ID number is not used, data will not be transferred. (p. 94)

○ **General MIDI System On** ☆ **(Universal System Exclusive)**

When a General MIDI System On is received, the SC-880 will be set to the basic General MIDI settings. Also, NRPN Bank Select messages will no longer be received after General MIDI System On is received. The beginning of song data bearing the General MIDI logo contains a General MIDI System On message. This means that if you play back the data from the beginning, the sound generating device will automatically be initialized to the basic settings.

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○ GS Reset (GS Format System Exclusive)

When a GS Reset is received, the SC-880 will be set to the basic GS settings. Also, NRPN messages defined in the GS format can be received after a GS Reset is received. A GS System Reset message is at the beginning of song data bearing the GS logo. This means that if you play back the data from the beginning, the sound generating device will be automatically initialized to the basic settings.

○ Master Volume (Universal System Exclusive)

This is an exclusive message common to all MIDI devices that controls the master volume of all Parts.

○ Other exclusive messages

The SC-880 can receive GS format exclusive messages (model ID 42H) that are common to all GS sound generators. The SC-880 can also use exclusive messages (model ID 45H) that are especially for the SC-55 (88). Exclusive messages can be used to store the SC-880 settings or to make fine adjustments to parameters.

For details on the exclusive messages transmitted and received by the SC-880, refer to the explanation on p. 181 and following.

■ Using MIDI Messages to Select Sounds

By sending MIDI messages from a MIDI keyboard or sequencer, you can remotely select the sound (Tone) for each Part. When you press a sound select button on a MIDI keyboard, a MIDI message selecting a sound will be transmitted. You can also use your personal computer to select the SC-880 sounds. You can specify sounds by inputting the Variation number and the Tone number (p. 17) into your computer program, but depending on your software the way in which numbers are displayed may differ, so be aware of this. On the SC-880, Variation numbers begin with 0, and Tone numbers begin with 1.

Variation numbers correspond to MIDI Bank numbers, and Tone numbers correspond to MIDI Program numbers.

* *MIDI Bank numbers have an upper (MSB) and lower (LSB) part. Each can specify a number from 0 to 127, allowing you to specify 128 x 128 = 16384 banks. The upper part of the Bank number corresponds to the SC-880 Variation number. The lower part provides selection of Tone Set 1, Tone Set 2, or Tone Set 3. (MIDI Implementation, p. 178).*

* *For the relation between the sound names and program numbers of your MIDI keyboard, refer to the manual for your MIDI keyboard.*

* *If you specify a tone number that the SC-880 does not have, the tone will not change. Refer to the tone list on p. 128–137 when selecting tones.*

Tone set 3
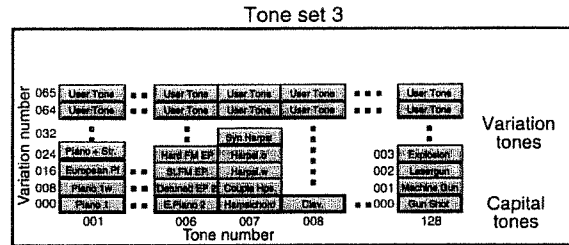
If you want to send MIDI messages you've created on a sequencer or personal computer, they need to be sent in the following order:

1. The value of Control Change 0:
MIDI Bank Number (upper) (the SC-880's Variation number)

2. The value of Control Change 32:
MIDI Bank Number (lower)

3. Program Change value:
MIDI Program Number (the SC-880's tone number)

1.and 2. are the Bank Select message. Bank Select messages are a type of Control Change message (p. 107).

For example, if you wish to select the tone at Variation number 8, Tone number 3 (Piano3w), you would transmit the following data to the SC-880.
(Expressed in decimal notation.)

1. The value of Control Change 0: 8
(Bank number (upper) 8, Variation number 8)

2. The value of Control Change 32: 0

3. Program Change value: 2
(Program number 3, Tone number 3)

* *Note that the data actually transmitted as the Program number will be one less than the Program number.*

The example above can be expressed in hexadecimal as follows.

1. BnH 00H 08H

2. BnH 20H 00H

3. CnH 02H

* *H indicates that the value is expressed as a hexadecimal number. Decimal 32 is written as hexadecimal 20H.*

* *n indicates the MIDI channel.*

* *Note that for MIDI channels and Tone numbers, the number is one less than the channel or Tone number. For example, if you wish to select a sound on the Part receiving MIDI channel 4, n would be 3. If you wish to select Tone 3, the value in step 3 would be 2.*

The SC-880 processes the lower part of the bank select message (LSB) as follows (p. 178).

Least significant byte (LSB)
00H The tone set will not change.
01H Tone Set 1 will be selected.
02H Tone Set 2 will be selected.
03H Tone Set 3 will be selected.

If we use the previous example of selecting the Piano3w sound, we would transmit:

1. BnH 00H 08H

2. BnH 20H 03H

3. CnH 02H

to the SC-880, and Piano3w of Tone Set 3 will be selected. If we transmit BnH 20H 01H in step 2, Piano3w of Tone Set 1 will be selected. If we transmit BnH 20H 02H in step 2, Piano3w of Tone Set 2 will be selected.

Using MIDI Messages to Select Rhythm Sets

You can select Rhythm Sets by transmitting MIDI messages from a MIDI keyboard or sequencer, in the same way as you can select Tones. When a Program Change message is received, the Rhythm Set will change. Transmit a Program Change message on the channel being received by the Rhythm Part. With the factory settings, Part A10 is the Rhythm Part (MIDI receive channel: A10). On the SC-880, Rhythm Set numbers correspond to program numbers (p. 138).

* Set the note numbers of the rhythm data being played back to match the note numbers of this unit Rhythm Set you are using (p. 139–150).

Rhythm Set name and Rhythm Set number (Program number)

STANDARD 1   001
⋮
ROOM   009
⋮
TR-808   026
⋮
User Set   065
⋮
User Set   080

Exclusive Data Addresses

○ **Receiving exclusive data**
As listed in "MIDI Implementation" (p. 178), the address of MIDI exclusive data (GS format) is defined in units of 16 Parts. In other words, starting from address 40 00 00 are the parameters for 16 Parts. The SC-880 has data for another 16 Parts, making a total of 32 Parts. For this reason, the SC-880's MIDI exclusive data format expands the addressing, and places the remaining 16 Parts at starting address 50 00 00.
In the same way as with channel messages, exclusive data received at MIDI IN A is passed to Part Group A, and exclusive data received at MIDI IN B is passed to Part Group B. In other words, exclusive data for the 32 Parts is received using two MIDI IN connectors. If this is done, each MIDI IN receives exclusive data for 16 Parts, so it is not necessary to split up the data into addresses 40 00 00 and 50 00 00.
However, it is also possible for the SC-880 to receive exclusive data for all 32 Parts at a single MIDI IN. In this case it is necessary to use address 50 00 00. For example, the data at starting address 40 00 00 will be passed to Part Group A, and the data at starting address 50 00 00 received at the same MIDI IN will be passed to Part Group B. In other words, using starting address 50 00 00 means that the data will be passed to the Parts of the other Group than the MIDI IN that the data was received at.
Only in the case of Exclusive data, "Input Mode" (p. 94) has no effect on the way in which data is passed from the two MIDI IN connectors to the Parts.

○ **Transmitting exclusive data**
Since the SC-880 has only one MIDI OUT, the exclusive data transmitted is sent using the two address areas of 40 00 00 and 50 00 00. User sound data is located at starting areas of 20 00 00.

* Be aware that exclusive data will be not transmitted from MIDI OUT connector if the MIDI OUT/THRU (p. 93) is set to THRU.

Using NRPNs with GS Sound Modules

Included within the various types of Control Changes (often abbreviated as "CC") is an extended range known as NRPNs (non-registered parameter numbers). The NRPNs can be used with GS sound modules to alter various sound parameters, such as those for the vibrato, filters, and envelopes. There are distinct advantages to using Control Changes rather than Exclusive messages when wishing to modify sounds. They are not as complicated, they are easier to handle, and they do not require a large amount of data (p. 109, 179). Such Control Change messages include a number (the Control Number) which specifies the type of function that is to be controlled.

The MIDI specifications do not define any specific functions which can be set using NRPNs. This is because the NRPNs are intended to serve as a flexible range of controls which can be assigned whatever parameters are required for a specific device in order to achieve the desired changes in its sounds, or enhance its expressive capabilities. In contrast, there is another type of extended form of control known as an RPN (registered parameter number). As their name suggests, RPN functions are all defined (registered) within the MIDI specifications (p. 180).

When using an NRPN, the function (sound parameter) being dealt with needs to be specified by means of the numeric values that are supplied for the NRPN MSB (Controller No. 99) and NRPN LSB (Controller No. 98). By then sending the appropriate value for Data Entry (Controller No. 6), the change in the specified sound parameter is accomplished.

Note that instead of the hexadecimal notation that is used within the "MIDI Implementation" (p. 208), the numbers for the combinations of values for NRPNs that appear in the chart below have all been converted to decimal. (Note also that these NRPNs are specific only to GS sound modules.)

NRPN MSB	NRPN LSB	Range	Function
1	8	0–64–127	Vibrato Rate *1 (p. 29)
1	9	0–64–127	Vibrato Depth *1 (p. 29)
1	10	0–64–127	Vibrato Delay *1 (p. 29)
1	32	0–64–127	TVF Cutoff Frequency *1 (p. 29)
1	33	0–64–127	TVF Resonance *1 (p. 30)
1	99	0–64–127	TVF&TVA Envelope Attack Time *1 (p. 30)
1	100	0–64–127	TVF&TVA Envelope Decay Time *1 (p. 30)
1	102	0–64–127	TVF&TVA Envelope Release Time *1 (p. 30)
24	rr	0–64–127	Rhythm Tone Pitch Coarse *1 Alters the pitch of individual percussion instruments in the rhythm Part.
26	rr	0–127	Rhythm Tone TVA Level Alters the volume of individual percussion instruments in the rhythm Part.
28	rr	0, 1–64–127	Rhythm Tone Pan Alters the panning for individual percussion instruments in the Rhythm Part. A setting of "0" provides random panning, while "1" selects the leftmost position, "64" the center, and "127" places it at the rightmost position.
29	rr	0–127	Rhythm Tone Reverb Send Level Sets the reverb depth for individual percussion instruments in the Rhythm Part.
30	rr	0–127	Rhythm Tone Chorus Send Level Sets the chorus depth for individual percussion instruments in the Rhythm Part.
31	rr	0–127	Rhythm Tone Delay Send Level Determines the amount of delay for individual percussion instruments in the Rhythm Part (SC-88/88 Pro/SC-880 only)

For example, let's say that you want to alter the TVF Cutoff Frequency. First, you need to assert that it is the TVF Cutoff Frequency that you wish to control by sending the appropriate NRPN MSB and NRPN LSB combination.

The value for Controller No. 99 is the NRPN MSB, and that for Controller No. 98 is the NRPN LSB.

So, you would transmit these values:

Controller No. 99: 1
Controller No. 98: 32

The SC-880 has thus been made aware that it is the TVF Cutoff Frequency that you are going to change. To go ahead and make the actual change, you would then use the Data Entry Control Change message to supply the new value (xx) for the TVF Cutoff Frequency.

Thus, you would send:

Controller No. 6: xx

As a result of transmitting the above three controller values, the TVF Cutoff Frequency will have been altered, and the timbre of the tone selected for that Part should sound differently.

After altering sound parameters using an NRPN, we recommend that you make a habit of asserting a "null" by sending the RPN values shown below. This will tell the SC-880 that you are finished working with the parameter that has been specified, and that it should stop waiting for any further new values for that parameter. (It cancels the standing request for change in a particular NRPN or RPN.) This way you can avoid having unexpected changes made if any unintended Data Entry values get sent afterwards.

Controller No. 101: 127
Controller No. 100: 127

For the "NRPN LSB rr" value, you need to supply the value which corresponds to the note number of the particular percussion instrument that you want to address (these numbers can be found in the Rhythm Set List at the rear of the manual; p. 138–150).

For example, let's say that you want to set the High Bongo so that no reverb will be applied to it. This instrument is assigned note number 60 (middle C), and is contained in the Standard Set 1 Rhythm Set.

To accomplish this you would transmit these values:

Controller No. 99: 29
Controller No. 98: 60
Controller No. 6: 0

Note that these MIDI messages need to be sent in the order listed above.

Parameters marked with *1 in the chart at left can be altered in a relative manner, with a value of "0" being the default value. Depending on the particular sound you are working with, the type of change available will be different (in some cases you may not even notice any change). Also, the range of change will vary.

You may need to consult the manual that came with your equipment or software for details on how to properly input and transmit Control Change messages. Note, though, that some devices may only allow you to work with a limited range of controller numbers.

Make sure that you always follow the order shown above when transmitting RPN, NRPN, and Data Entry data. Be careful, since if you insert a multiple number of MIDI messages at the same point in time (or in very close range of each other) when using some types of music software, the messages can sometimes be sent out in an order different than originally intended. To avoid problems, always allow sufficient space between adjacent messages (at least 1 tick at 96 TPQN, and 5 ticks at 480 TPQN).

* *TPQN: Ticks Per Quarter Note*

* *Any value which has been imposed by means of an NRPN will not be initialized even when a different sound is changed to in compliance with a received Program Change. Settings which have been made using NRPNs can only be initialized by sending a GS Reset, or by performing a GS Initialization (p. 102).*

* *At the factory default settings, the SC-880 will not respond to NRPN messages. However, after a GS Reset has been received it will recognize NRPNs. Alternately, you can enable recognition of NRPNs by turning on "NRPN" (p. 25), either by using the panel buttons, or through Exclusive messages.*

■ When Song Data Plays Back with the Wrong Sounds

When song data created using the SC-55 or the SC-155 is played back by the SC-880, the sounds that were intended may not be selected. This can occur for one of the following two reasons.

1. The wrong Variation number was selected

When a Variation number for which sounds do not exist is selected on the SC-880, the display will show a message of No TONE (or for the Rhythm Part, No Rhythm SET). Even if the relevant Part is not displayed, this message will be displayed briefly when any Part receives such data.

The data that specifies sounds is usually placed in the beginning of the song data, so check whether this message appears when the song data starts. If this message appears, it is possible that a control change Bank Select message (or for the Rhythm Part, a program change) within the song is incorrect. (p. 110) Refer to the tone list (p. 128–137), and modify the data value so that an existing tone is selected.

2. The wrong sound map was selected

On this SC-880, the lower byte (LSB) of a control change Bank Select message (control change 32) can be used to switch tone Sets (p. 110).

Control Change 32 values
00H: The tone set will not change.
01H: Tone Set 1 will be selected.
02H: Tone Set 2 will be selected.
03H: Tone Set 3 will be selected.

If values other than these are transmitted to the SC-880, a tone Set for which the SC-880 has no tones will be selected, so a message of No TONE will appear. In the case of the SC-55/155/55mkII, the LSB of this Bank Select message is ignored, so sound selection will not be affected regardless of the value that is transmitted. However, since Bank Select messages are used as a pair of upper and lower values (MSB and LSB), it is best to input 00 as the lower value (LSB) in your song data.

■ How to Use a Part Other Than Part 10 as a Rhythm Part, So That Two Rhythm Sets Can Be Used Simultaneously

● About the Part mode

Each Part 1–16 can be used either for normal sounds (Normal Part) or for a Rhythm set (Rhythm Part). This selection is made by the Part Mode setting. (p. 27)

The mode of a Rhythm Part can be either Rhythm 1 or Rhythm 2. Since the same Rhythm Set will automatically be selected for Parts that have the same Part Mode, this means that up to 2 types of Rhythm set can be used simultaneously. For example, if you set the Part Mode of Part A10 and Part A11 respectively to Rhythm 1 and Rhythm 2, you could select STANDARD 1 Set for Part A10 and JAZZ Set for Part A11. If the Part Mode of both Parts A10 and A11 were set to Rhythm 1, selecting STANDARD 1 Set for Part A10 would automatically select STANDARD 1 Set for Part A11 as well.

● Settings via MIDI

To set the Part Mode using MIDI messages, you need to use system exclusive messages.

For example, if you wish to set the Part Mode of Part A11 to Rhythm 2, transmit the following message. (p. 188)

F0 41 <u>10</u> 42 12 <u>40 1A 15</u> <u>02</u> 0F F7
    10:      Device ID (17)
    40 1A 15: Address
              (USE FOR RHYTHM PART of Part A11)
    02:      Data (Part Mode Rhythm 2)

To select a Rhythm Set after setting the Part Mode, transmit a program change to Part A11.

Chapter 8

■ Using Aftertouch

First, connect a device that is able to transmit aftertouch messages to the SC-880. Be aware that some MIDI keyboards are not able to transmit aftertouch messages.

When the SC-880 receives aftertouch messages, the way in which it responds will depend on its settings. With the factory settings or immediately after the SC-880 has been initialized by a GS Reset, etc., aftertouch messages will have no effect, so you will need to change the settings if you want aftertouch to do something.

Aftertouch parameters are divided into the following two groups.

Channel aftertouch (CAf):

These messages apply an effect to the entire Part of a given channel. For example, if you hold down a "C-E-G" chord and then press strongly on just the "C" note, the effect will be applied to all notes "C-E-G."

Polyphonic aftertouch (PAf):

These messages apply an effect independently for each note number. For example, if you hold down a "C-E-G" chord and then press strongly on just the "C" note, the effect will be applied only to the "C" note.

Of the Channel Aftertouch parameters and Polyphonic aftertouch parameters, the following eleven can be set from the panel (p. 31, 32).

> Range/Cutoff/Amp/LFO 1 Rate/LFO 1 Pitch/LFO 1 TVF/LFO 1 TVA/LFO 2 Rate/LFO 2 Pitch/LFO 2 TVF/LFO 2 TVA

All parameters (CAf: 11 types/PAf: 11 types) can be set by transmitting exclusive messages from a sequencer or computer. For details on the messages for these parameters, refer to MIDI Implementation p. 178.

■ Using MIDI to Control the Depth of a System Effect

● Reverb/Chorus/Delay

The depth of the System effects Reverb/Chorus/Delay can be adjusted for each Part using control change messages (p. 108).

> Reverb Send Level (Controller number 91)
> Chorus Send Level (Controller number 93)
> Delay Send Level (Controller number 94)

The Reverb/Chorus/Delay effects use a portion of the sound from each Part to create a new effect sound (reverberation, etc.) which can then be added to the original sound.

The above three parameters control the amount of the sound (signal) of each Part that will be sent to the effect unit. Higher settings will increase the amount of the signal that is sent to the effect unit, causing more effect sound to be produced. The result is that the effect will be deeper.

● Equalizer

The equalizer modifies the tonal character of the sound. You can specify whether or not the sound of a Part will be passed through the equalizer; i.e., turn the equalizer on/off. Settings are made using exclusive messages, not control change messages. (p. 186)

< Setting example >

Turning the equalizer on for Part A01:

> F0 41 10 42 12 40 41 20 01 5E F7

Connections with Your Computer

The SC-880 can be controlled by music software running on a personal computer. This will allow you to create your own songs, and also to select sounds or edit sounds from the computer display. This type of system is known as a Desk Top Music System (DTMS). The functions provided by a DTMS differ widely depending on the software, so it is important that you choose software suited to your needs.

There are two ways to connect the SC-880 to your computer; using the MIDI connectors or the computer connector. If you use the MIDI connectors, you will need to obtain a computer interface board (adapter) that has MIDI connectors (such as the Roland Super MPU, etc.). If you use the SC-880's computer connector, you can use a special cable to connect it directly with the computer, but your software must be able to correspond to the serial port.

If you wish to connect your computer via the MIDI connectors, refer to p. 116 (Connecting a computer via the MIDI connectors) for how to make connections. The following explanation will show how to make connections using the SC-880 computer connector.

■ Connections with Computer Connector

Apple Macintosh

Apple Macintosh   PC

Modem Port or Printer Port

PC

DUT/THRU   IN A   IN B
MIDI

COMPUTER

Serial Port (IOIOI)

Optional computer cable
RSC-15APL

Optional computer cable
RSC-15AT
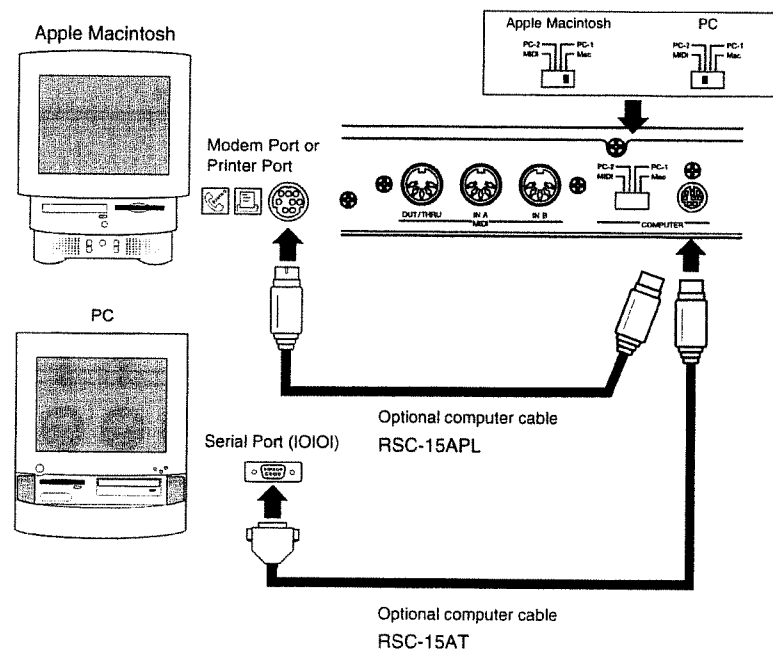
1. Turn power of the SC-880 off, and set the COMPUTER switch located on the back of the SC-880.

Note: The Computer switch will be validated when the power is turned off and then on after the setting has been made.

* *The setting will depend on the type of computer you have and the software you use.*

The PC-1 baud rate is 31.25 Kbps (kilobits per second), and the PC-2 baud rate is 38.4 Kbps. Set the computer switch to the baud rate required by your MIDI application (software). Carefully read the manual for your software regarding the switch setting.

In general, set the switch to PC-2 for PC, and to Mac for Apple Macintosh series.

Apple Macintosh   PC

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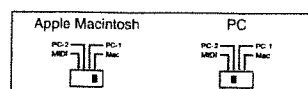
In step 2, the connections will be slightly different depending on the type of computer you are using, so read the section (2a, 2b) that applies to you.

2a. If you're using a PC, connect the computer cable to the serial port (RS-232C) connector on the rear of the computer.

Computer cable: RSC-15AT (sold separately)

This is a 9 pin cable. If you need a 25 pin cable, refer to the wiring diagram on p. 210 and purchase an appropriate cable.

2b. If you're using an Apple Macintosh computer, connect the computer cable to the modem port or printer port on the rear of the computer.

Computer cable: RSC-15APL (sold separately)

3. Connect the other end of the computer cable to the SC-880's computer connector (COMPUTER).

4. Turn power of the SC-880 on.

Caution when using the SC-880 with PC

Even if the SC-880 computer connector is connected to your personal computer, it will not operate correctly if the software (MIDI application) is incompatible. Be sure to use software that is compatible with the serial port of the personal computer.

In some cases, other computer settings will be necessary, so read the owner's manual for your software careful, and make the appropriate settings before use.

■ Connections with MIDI Connectors

*   *Set the Computer select switch located on the back of the SC-880 to MIDI.*
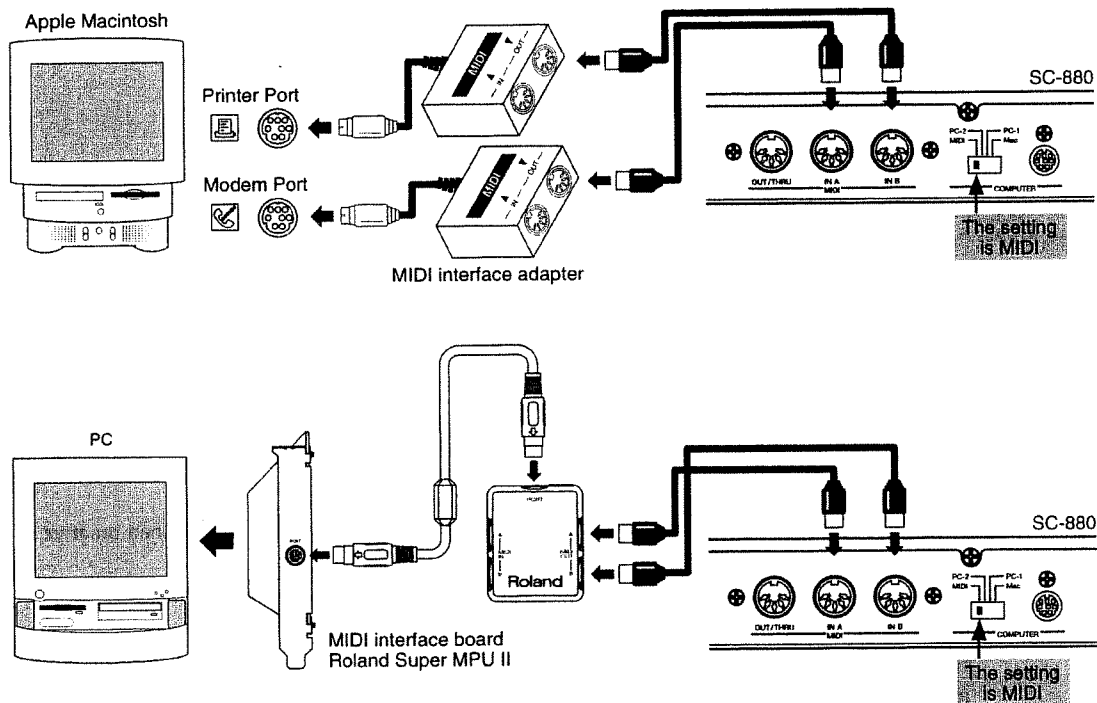
■ MIDI Data Transfer with the Computer

Depending on the setting of the computer switch, MIDI data flow will be different as follows (with the factory settings)

● When the computer switch is set to PC-1, PC-2 or Mac
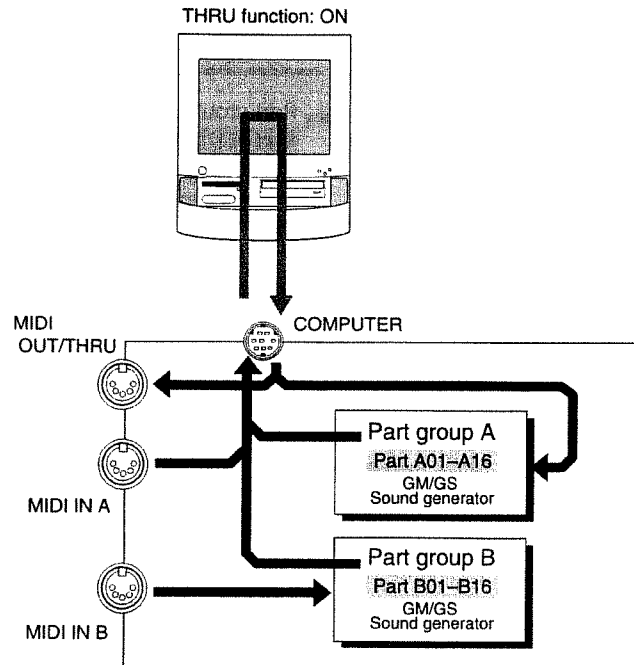
* *In order for data received at MIDI IN A to be sent to the sound generating section, the Thru function of the computer software must be turned on. When thru function is turned on, the data received at MIDI IN A will pass through the computer and be played by the sound generator section. When transmitting MIDI Exclusive data from the sound generator section via the SC-880's MIDI OUT/THRU connector, it is also necessary for thru function to be on.*

* *Data received at MIDI IN B will not be sent to the computer connector, but will be passed directly to the sound generator section.*

* *The number of sound generator Parts that can be controlled using the computer connector will depend on the software you are using. This means that if you are using the computer connector, you will not necessarily be able to play 32 Parts. Carefully read the operating manual for your software. Also be aware that although the SC-880 allows two connectors MIDI IN A and B to be used for 32 Part performance, this may impossible to achieve depending on your software.*

● When the computer switch is set to MIDI
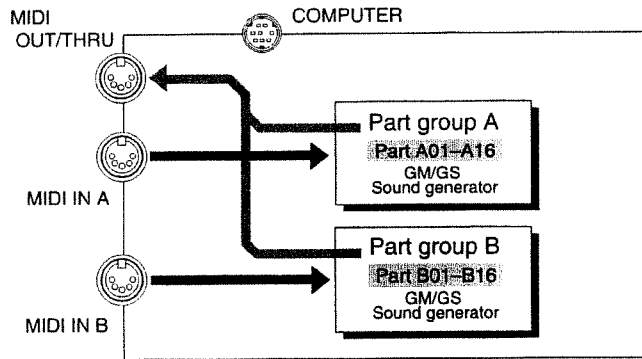
* Be aware that when the computer switch located on the back of the SC-880 is set to MIDI, data will not be exchanged via the computer connector.

* With the factory settings, MIDI OUT/THRU is set to function as MIDI OUT. If you wish to use it as MIDI THRU, set the MIDI OUT/THRU (p. 93) to THRU.

* Exclusive data address settings are explained on p. 111, 184

* With the factory settings, MIDI messages received at MIDI IN A are passed to Part Group A, and MIDI messages received at MIDI IN B are passed to Part Group B. In most situations there is no need to change this, but it is possible to change the MIDI signal flow as shown below (p. 94).
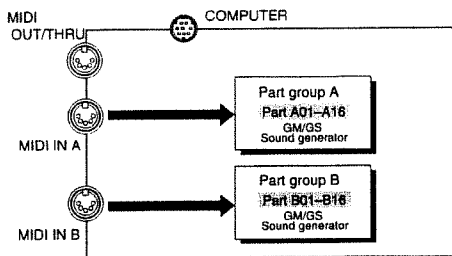
Standard
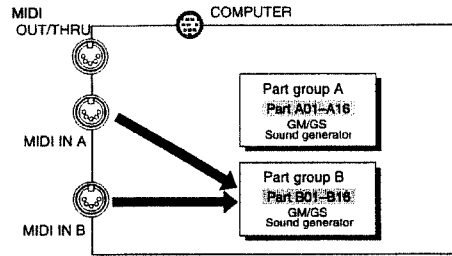
Merge → B
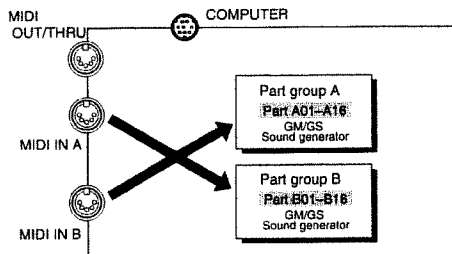
X-connect
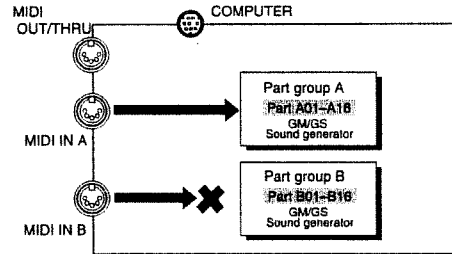
A only
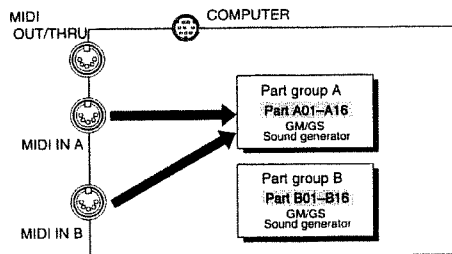
Merge → A

Connecting Another MIDI Sound Generator to the SC-880

If you wish to connect another MIDI sound generator to the SC-880's MIDI OUT/THRU connector, be aware of the following points.

■ Using Another Sound Generator to Play Data Received at the Computer Connector

In this situation, set MIDI OUT/THRU (p. 93) to OUT. Computer data received at the computer connector will be transmitted from the SC-880 MIDI OUT/THRU connector.
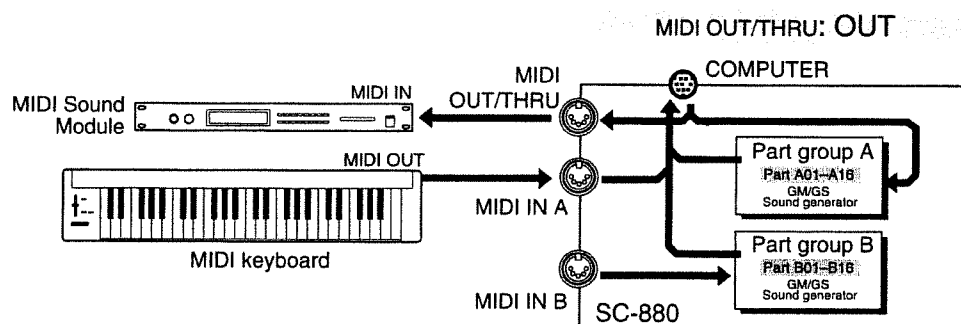
■ When Using Another Sound Generator to Play Data Received at MIDI IN A

In this situation, set MIDI OUT/THRU (p. 93) to THRU. Data received at MIDI IN A will be transmitted just as it is from MIDI OUT/THRU.

* *Data received at MIDI IN B will not be passed THRU even if THRU is selected. Regardless of the Input Mode setting (p. 94), data from MIDI IN B will not be THRUed.*

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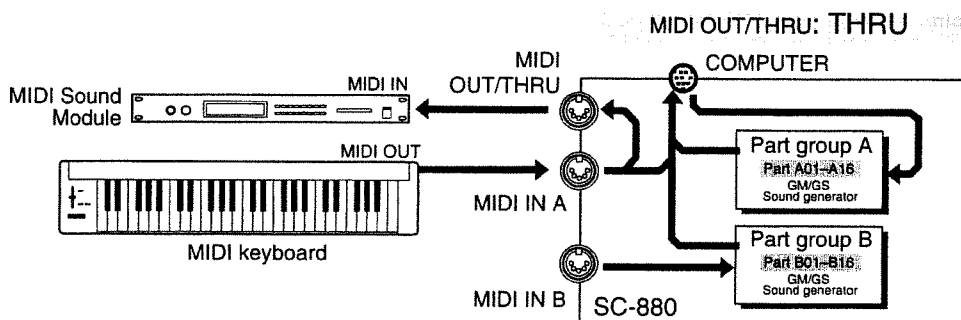
Troubleshooting

If the SC-880 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 Center (listed at the end of this manual).

* If a message appears during operation, consult the following section "If a message appears." (p. 122)

* If performance is incorrect when playing back song data carrying the General MIDI/GS logo, check the following points.

  * That the Device ID is set to 17 (p. 94)

  * That the General MIDI System On/GS Reset Receive Switch (p. 95) is turned on. The above settings are made when the SC-880 is shipped from the factory.

● Cannot turn the power on
* Is the power cord plugged properly into an outlet?

● No sound
* Is the power turned on for the other devices connected to the SC-880?
* Is the volume knob turned all the way down?
* Have you incorrectly connected the MIDI IN and OUT connectors? (p. 9)
* Can you hear sound through headphones? (Phrase Preview the sound p. 97) If you can hear sound through headphones, the problem may be that the audio cable transmitting the sound to the other devices is broken or incorrectly connected, or that there is a problem with your mixer/amp/speaker system.
* Do the bar indicators in the display move?
  (1) If the bar indicators are moving...
  The SC-880 is receiving MIDI data correctly. Check the volume knob position and the cable connections once again.
  (2) If the bar indicators are not moving...
  Is the lowest dot in the bar display turned off?
  If some of the dots are off, the Part Mute function is on. Turn off the Part Mute function. (p. 23)
* Is the overall volume for all parts turned down? (p. 22)
* Has the Expression pedal, etc., on a connected MIDI device turned the volume down?
* Are the settings for the OUTPUT 1, 2 jacks correct? (p. 24, 96)
* Is the rear panel Computer switch set to the correct position for the software you are using? (p. 115) After changing the position of the Computer switch you must turn power of the SC-880 on.

● A specific Part does not sound
* Is the lowest dot in the bar display off? Parts for which this dot is off have been muted. Turn Part Mute off. (p. 23)
* Is the volume level of the Part turned down? (p. 23)

* Does the MIDI Receive channel of the Part match the MIDI Transmit channel of the connected MIDI device? (p. 18)

● A specific keyboard area does not sound
* Has the Keyboard Range been set? (p. 27)

● Sound is heard but the bar indicator does not move
* Are you receiving MIDI messages at MIDI IN B and viewing Part information for Part Group A? If so, press the PART [◄] [►] buttons to display the Part Group B. If you press the [INFO] button to make the indicator light, Part information for both Part Group A and B will be displayed.

● Cannot select the desired sound
* Are you sending an incorrect Program number? (p. 110)
* Have you specified the Control channel of a Patch? (p. 95)
* Has the System mode parameter "Tone Set Range" been set to "Tone Set Range:1" or "Tone Set Range:2"? (p. 95)

● Sound is distorted
* Is an effect which distorts the sound being applied? (p. 49)
* If a specific sound or Part is distorted, lower the volume level of that Part. (p. 23)
* If all sounds are distorted, lower the overall volume level of all Parts (p. 22), or use the Volume knob to lower the volume level.

● Pitch is incorrect
* Is the pitch of a specific Part incorrect? (p. 28)
* Is the pitch of all Parts incorrect by a semitone or more? (p. 23)
* Is the pitch of a specific Part incorrect by a semitone or more? (p. 28)
* Has a MIDI Pitch Bend message been received to change the pitch? Return the pitch bend lever or wheel to the central position. Or, transmit a Pitch Bend message with the central value (40 00H).

● Sound is wrong
* Have you selected another sound after modifying sound parameter settings (filter, etc.)? Restore all sound parameter settings to a value of 0. (p. 28)

● Sounds are interrupted

- If you attempt to play more than 64 voices at once, sounds will be interrupted. (p. 18)
- Is the same data being sent simultaneously to MIDI IN A and MIDI IN B? (p. 94)

● Able to play only from either MIDI IN A or MIDI IN B

- Make sure that the Input Mode is set to Standard. (p. 94)
- Is the Input Mode set to A Only? (p. 94)

● Exclusive messages are not received

- Does the Device ID number of the transmitted exclusive message match the Device ID number of the SC-880? (p. 94)

● The SC-880 does not transmit MIDI data

- If you wish to transmit the SC-880 data via the Computer connector, set the Computer switch to PC-1, PC-2 or Mac, depending on the software you are using. (p. 115)
- When the rear panel Computer switch is set to MIDI, the SC-880 will not transmit data from the Computer connector. In this case, data will be transmitted from the MIDI OUT/THRU connector.
- When the MIDI OUT/THRU is set to THRU, data received at MIDI IN A will be transmitted from MIDI OUT/THRU. (p. 93)

● MIDI sound generators connected to the SC-880 are not played from a computer or sequencer

- Music data received at the SC-880 Computer connector is transmitted from the MIDI OUT/THRU connector, but you need to make the following settings. (p. 93, 115)

* *Set the Computer switch to PC-1, PC-2, or Mac depending on your software*

* *Set MIDI OUT/THRU Select switch to OUT*

- MIDI data received at MIDI IN A is transmitted from the MIDI OUT/THRU connector, but you need to make the following settings (p. 93, 115)

* *Set the Computer switch to MIDI*

* *Set the MIDI OUT/THRU to THRU*

* *After changing the setting for MIDI OUT/THRU, or Input Mode, the power must be turned on again. These settings will take effect the next time the power is turned on.*

Appendices

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If a Message Appears

If operation is incorrect or if the data cannot be processed correctly, an error message will appear in the display. Consult the following list for the appropriate remedy.

Battery Low

Cause: The memory backup battery inside the SC-880 has run down.

Action: Consult a nearby Roland Service Center.

Check Sum Error

Cause: The checksum of the received exclusive message is incorrect.

Action: Check the data that was transmitted to the SC-880, and transmit it once again. Also, make sure that the MIDI cable is not damaged.

MIDI Buffer Full

Cause: A large amount of MIDI data was received by the SC-880 in a time too short for correct processing to be done.

Action: Check whether a large amount of MIDI data is not being transmitted in a short time.

MIDI Off Line

Cause 1: It is possible that the power has been turned off for the MIDI device connected to MIDI IN.

Action 1: The problem is not with the SC-880. Check the power of the connected MIDI device.

Cause 2: It is possible that a MIDI cable has been pulled out or broken.

Action 2: Check the MIDI cables.

No TONE

Cause: A sound (Tone) which the SC-880 does not have has been selected.

Action: The previously selected sound name will be displayed, and that sound will be heard. Carefully refer to the tables on pages 128 to 137, and specify the correct bank number and program number.

No RHYTHM SET

Cause: A Rhythm Set which the SC-880 does not have has been selected.

Action: The previously selected Rhythm Set name will be displayed, and that set will sound.

No PATCH

Cause: A Patch which the SC-880 does not have has been selected.

Action: The previously selected Patch name will be displayed, and that Patch will sound.

No PERFORMANCE

Cause: A Performance which the SC-880 does not have has been selected.

Action: The previously selected Performance name will be displayed, and that Performance will sound.

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Quick Reference of Displays

PATCH EDIT MODE
PERFORMANCE EDIT MODE

(p. 20)

```
P-000
SC-880
- - - - - - - - - - - - - - -
```

```
P-0
SC-880
- - - - - - - - - - - - - - -
```

(p. 37)

EDIT

INFO

(p. 15)

```
A ▁ ▂ ▁ ▁ ▃ ▁ ▂ ▁ ▄ ▃ ▁ ▄ ▃ ▁ ▄
B ▁ ▂ ▁ ▂ ▂ ▂ ▁ ▁ █ ▁ ▁ ▁ ▁ ▁ ▁
```

Patch Name *   (p. 22)

Master Control

| Level * | (p. 22) | Master Tune * | (p. 23) |
| Pan * | (p. 22) | Key Shift * | (p. 23) |

Reverb

Type *	(p. 42)	Time *	(p. 42)
Level *	(p. 42)	Delay Feedback *	(p. 42)
Character *	(p. 42)	Pre Delay Time *	(p. 43)
Pre-LPF *	(p. 42)		

Chorus

Type *	(p. 44)	Rate *	(p. 44)
Level *	(p. 44)	Depth *	(p. 44)
Pre-LPF *	(p. 44)	Send to Reverb *	(p. 44)
Feedback *	(p. 44)	Send to Delay *	(p. 44)
Delay *	(p. 44)		

Delay

Type *	(p. 45)	Time Ratio Left *	(p. 46)
Level *	(p. 45)	Time Ratio Right *	(p. 46)
Feedback *	(p. 46)	Level Center *	(p. 46)
Pre-LPF *	(p. 46)	Level Left *	(p. 46)
ToReverb *	(p. 46)	Level Right *	(p. 46)
Time Center *	(p. 46)		

Equalizer

| Low Fq * | (p. 48) | LowGain * | (p. 48) |
| High Fq * | (p. 48) | HiGain * | (p. 48) |

Multi-FX   Send

| Reverb * | (p. 50) | Delay * | (p. 50) |
| Chorus * | (p. 50) | EQ * | (p. 50) |

Multi-FX   Control

| Src1 * | (p. 52) | Src2 * | (p. 52) |
| Depth1 * | (p. 52) | Depth2 * | (p. 52) |

Appendices

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*: Parameters which can be transmitted as Individual data (p. 100)

TONE EDIT MODE 1/2

EDIT

(p. 23)

[3]000/001
Piano 1

INFO

(p. 16)

[3]000/001 Piano 1

Output

Level *	(p. 23)	Velocity Depth *	(p. 24)
Mute *	(p. 23)	Velocity Offset *	(p. 24)
Pan *	(p. 24)	OUT Assign *	(p. 24)

Effect Send

Multi-Fx *	(p. 47)	Delay *	(p. 47)
Reverb *	(p. 47)	EQ *	(p. 47)
Chorus *	(p. 47)		

Rx MIDI

Recive Channel *	(p. 25)	Bend *	(p. 26)
CC1 Number *	(p. 25)	CAf *	(p. 26)
CC2 Number *	(p. 25)	PAf *	(p. 26)
Bank *	(p. 25)	Volume *	(p. 26)
Bank L *	(p. 25)	Panpot *	(p. 26)
NRPN *	(p. 25)	Expres *	(p. 26)
RPN *	(p. 25)	Hold-1 *	(p. 26)
PC *	(p. 25)	Porta *	(p. 26)
CC *	(p. 26)	Soste *	(p. 26)
Mod *	(p. 26)	Soft *	(p. 27)

Mode

Part Mode *	(p. 27)	Assign Mode *	(p. 27)
Mono/Poly Mode *	(p. 27)		

Keyboard Range

Low *	(p. 27)	High *	(p. 27)

Pitch

Key Shift *	(p. 28)	Fine Tune *	(p. 28)

Scale Tune   (p. 28)

Part Tone Modify

Vibrato Rate *	(p. 29)	Reso *	(p. 30)
Vibrato Depth *	(p. 29)	Attack *	(p. 30)
Vibrato Delay *	(p. 29)	Decay *	(p. 30)
Cutoff *	(p. 29)	Release *	(p. 30)

USER TONE

Vibrato Rate	(p. 29)	Reso	(p. 30)
Vibrato Depth	(p. 29)	Attack	(p. 30)
Vibrato Delay	(p. 29)	Decay	(p. 30)
Cutoff	(p. 29)	Release	(p. 30)

*: Parameters which can be transmitted as Individual data (p. 100)

TONE EDIT MODE 2/2

(p. 23)

[3]000/001
Piano 1

INFO

(p. 16)

[3]000/001 Piano 1

EDIT

Modulation

| Range * | (p. 32) | Amp * | (p. 32) |
| Cutoff * | (p. 32) | | |

Modulation LFO1

| Rate * | (p. 32) | TVF * | (p. 32) |
| Pitch * | (p. 32) | TVA * | (p. 32) |

Modulation LFO2

| Rate * | (p. 32) | TVF * | (p. 32) |
| Pitch * | (p. 32) | TVA * | (p. 32) |

The parameters of the "Bender," "Channel After," "Poly After," "CC1," and "CC2" pages are the same as for the "Modulation" page.

RHYTHM EDIT MODE

(p. 33)

A-1 [3] 001
STANDARD 1

INFO

(p. 27, 33)

INFO   RHYTHM
Norm 001 Piano 1
A ■---------1-------
B ========1======

EDIT

Rhythm Name   (p. 34)

Rhythm Key

Tone Set	(p. 35)	Reverb *	(p. 35)
Src Set	(p. 35)	Chorus *	(p. 35)
Src Key	(p. 35)	Delay *	(p. 35)
Level *	(p. 35)	Pitch *	(p. 36)
Pan *	(p. 35)	Assign Group *	(p. 36)

WRITE

WRITE

(p. 15)

Performance Write   (p. 38)

Patch Write   (p. 21)

Rhythm Write   (p. 36)

Multi-FX Write   (p. 49)

User Tone Write   (p. 32)

Appendices

SYSTEM MODE

SYSTEM

(p. 92)

LCD Contrast	(p. 92)	Power Up Mode	(p. 92)

Multi-Fx	(p. 92)	Delay	(p. 93)
Reverb	(p. 92)	EQ	(p. 93)
Chorus	(p. 92)		

MIDI OUT/THRU	(p. 93)	Rx GM On	(p. 95)
Input Mode	(p. 94)	Rx GS Reset	(p. 95)
Rx Module Mode	(p. 94)	Control Channel	(p. 95)
Device ID Number	(p. 94)	Bulk Mode	(p. 95)

Tone Set Range	(p. 95)	System OUT Mode	(p. 96)
Part Monitor	(p. 96)	Patch Load Mode	(p. 96)
Backing Level	(p. 96)		

Output Assign Lock	(p. 97)	Equalizer Lock	(p. 97)
Mute Lock	(p. 97)		

Mode	(p. 97)	Vel 1–4	(p. 98)
Key1–4	(p. 97)		

Display Type	(p. 98)	Peak Hold	(p. 98)

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UTILITY MODE

UTILITY
(p. 99)

All	(p. 99)	Multi-FX	(p. 99)
Performance	(p. 99)	All - User	(p. 99)
Patch	(p. 99)	GS Part A	(p. 99)
Rhythm	(p. 99)	GS Part B	(p. 99)
User Tone	(p. 99)		

Single	(p. 101)	Double	(p. 101)

GS	(p. 102)	CM-64	(p. 103)
GM	(p. 102)		

Copy	(p. 103)	Exchange	(p. 104)
Clear	(p. 104)		

All	(p. 105)	Patch	(p. 105)

Appendices

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Tone List

■ Piano

PC	CC00	Tone Set 3		Voices	Tone Set 2		Voices	Tone Set 1	Voices
001	000	Piano 1		1	Piano 1		1	Piano 1	1
	008	Piano 1w		1	Piano 1w		1	Piano 1w	1
	016	European Pf		1	Piano 1d		1	Piano 1d	1
	024	Piano + Str.		2	-----			-----	
002	000	Piano 2		2	Piano 2		1	Piano 2	1
	008	Piano 2w		2	Piano 2w		1	Piano 2w	1
	016	Dance Piano		2	-----			-----	
003	000	Piano 3		2	Piano 3		1	Piano 3	1
	001	EG+Rhodes 1		2	EG+Rhodes 1		2	-----	
	002	EG+Rhodes 2	#	2	EG+Rhodes 2		2	-----	
	008	Piano 3w		2	Piano 3w		1	Piano 3w	1
004	000	Honky-tonk		2	Honky-tonk		2	Honky-tonk	2
	008	Honky-tonk 2		2	Old Upright		2	HonkyTonk w	2
005	000	E.Piano 1		1	E.Piano 1		2	E.Piano 1	1
	008	St.Soft EP	#	2	St.Soft EP		2	Detuned EP1	2
	009	Cho.E.Piano		2	-----			-----	
	010	SilentRhodes		2	-----			-----	
	016	FM+SA EP	#	2	FM+SA EP		2	E.Piano 1v	2
	017	Dist E.Piano		2	-----			-----	
	024	Wurly		2	60'sE.Piano		1	60s E.Piano	1
	025	Hard Rhodes	#	2	Hard Rhodes		2	-----	
	026	MellowRhodes	#	2	MellwRhodes		2	-----	
006	000	E.Piano 2	#	2	E.Piano 2		2	E.Piano 2	1
	008	Detuned EP 2	#	2	Detuned EP2		2	Detuned EP2	2
	016	St.FM EP	#	2	St.FM EP		2	E.Piano 2v	2
	024	Hard FM EP	#	2	Hard FM EP		2	-----	
007	000	Harpsichord	#	1	Harpsichord		1	Harpsichord	1
	001	Harpsichord2		2	-----			-----	
	008	Coupled Hps.	#	2	Coupled Hps	*	2	Coupled Hps	2
	016	Harpsi.w	#	1	Harpsi.w		1	Harpsi.w	1
	024	Harpsi.o	#	2	Harpsi.o		2	Harpsi.o	2
	032	Synth Harpsi		2	-----			-----	
008	000	Clav.	#	1	Clav.		1	Clav.	1
	008	Comp Clav.		1	-----			-----	
	016	Reso Clav.		1	-----			-----	
	024	Clav.o		2	-----			-----	
	032	Analog Clav.		2	-----			-----	
	033	JP8 Clav. 1		1	-----			-----	
	035	JP8 Clav. 2		1	-----			-----	

PC:	program number (Tone number)
CC00:	value of controller number 0 (Bank number, Variation number)
Remark ::	legato-enabled sounds
Voices:	number of voices used by the Tone
Remark #:	same sounds as Tone Set 2
Remark *:	same sound as Tone Set 1
Remark +:	a percussive sound which cannot be played melodically. Use near C4 (note number 60).

■ Chromatic percussion

PC	CC00	Tone Set 3		Voices	Tone Set 2		Voices	Tone Set 1	Voices
009	000	Celesta	#	1	Celesta	*	1	Celesta	1
	001	Pop Celesta		2	-----			-----	
010	000	Glockenspiel	#	1	Glocknspiel		1	Glockenspl	1
011	000	Music Box	#	1	Music Box		1	Music Box	1
012	000	Vibraphone		1	Vibraphone		1	Vibraphone	1
	001	Pop Vibe.		2	Hard Vibe		2	-----	
	008	Vibraphone w		1	Vib.w	*	1	Vib.w	1
	009	Vibraphones		2	-----			-----	
013	000	Marimba	#	1	Marimba		1	Marimba	1
	008	Marimba w	#	1	Marimba w		1	Marimba w	1
	016	Barafon	#	1	Barafon		1		-----
	017	Barafon 2	#	1	Barafon 2		1		-----
	024	Log drum	#	1	Log drum		1		-----
014	000	Xylophone	#	1	Xylophone		1	Xylophone	1
015	000	Tubular-bell	#	1	Tubularbell	*	1	Tubularbell	1
	008	Church Bell	#	1	Church Bell	*	1	Church Bell	1
	009	Carillon	#	1	Carillon	*	1	Carillon	1
016	000	Santur	#	1	Santur	*	1	Santur	1
	001	Santur 2	#	2	Santur 2		2	-----	
	008	Cimbalom	#	2	Cimbalom		2	-----	
	016	Zither 1		1	-----			-----	
	017	Zither 2			-----			-----	
	024	Dulcimer		2	-----			-----	

■ Organ

PC	CC00	Tone Set 3		Voices	Tone Set 2		Voices	Tone Set 1	Voices
017	000	Organ 1		2	Organ 1		1	Organ 1	1
	001	Organ 101		2	Organ 101		2	-----	
	008	Trem. Organ		2	DetunedOr.1		2	Detuned Or1	2
	009	Organ.o		2	Organ 109		2	-----	
	016	60's Organ 1		1	60'sOrgan 1		1	60's Organ1	1
	017	60's Organ 2		1	60'sOrgan 2		1	-----	
	018	60's Organ 3		1	60'sOrgan 3		1	-----	
	019	Farf Organ		1	-----			-----	
	024	Cheese Organ	#	1	CheeseOrgan		1	-----	
	025	D-50 Organ		2				-----	
	026	JUNO Organ		2				-----	
	027	Hybrid Organ		2				-----	
	028	VS Organ		2				-----	
	029	Digi Church		2				-----	
	032	70's E.Organ		2	Organ 4		1	Organ 4	2
	033	Even Bar	#	2	Even Bar		2	-----	
	040	Organ Bass	#	1	Organ Bass		1	-----	
	048	5th Organ		2	-----			-----	
018	000	Organ 2		2	Organ 2		1	Organ 2	1
	001	Jazz Organ		2	Organ 201		2	-----	
	002	E.Organ 16+2		2	-----			-----	
	008	Chorus Or.2		2	DetunedOr.2		2	Detuned Or2	2
	009	Octave Organ		2	-----			-----	
	032	Perc.Organ		2	Organ 5		2	Organ 5	2

PC	CC00	Tone Set 3		Voices	Tone Set 2		Voices	Tone Set 1	Voices
019	000	Organ 3	#	2	Organ 3	*	2	Organ 3	2
	008	Rotary Org.	#	1	Rotary Org.		1	-----	
	016	Rotary Org.S	#	1	RotaryOrg.S		1	-----	
	017	Rock Organ 1		2	-----			-----	
	018	Rock Organ 2		2	-----			-----	
	024	Rotary Org.F	#	1	RotaryOrg.F		1	-----	
020	000	Church Org.1	#	1	ChurchOrg.1		1	Church Org1	1
	008	Church Org.2	#	2	ChurchOrg.2		2	Church Org2	2
	016	Church Org.3	#	2	ChurchOrg.3		2	Church Org3	2
	024	Organ Flute	#	1	Organ Flute		1	-----	
	032	Trem.Flute	#	2	Trem.Flute		2	-----	
	033	Theater Org.		2	-----			-----	
021	000	Reed Organ	#	1	Reed Organ	*	1	Reed Organ	1
	008	Wind Organ		2	-----			-----	
022	000	Accordion Fr		1	AccordionFr		1	Accordion F	2
	008	Accordion It		1	AccordionIt		2	Accordion I	2
	009	Dist. Accord		2	-----			-----	
	016	Cho. Accord		2	-----			-----	
	024	Hard Accord		2	-----			-----	
	025	Soft Accord		2	-----			-----	
023	000	Harmonica		1	Harmonica		1	Harmonica	1
	001	Harmonica 2		1	Harmonica 2		2	-----	
024	000	Bandoneon		2	Bandoneon		1	Bandoneon	2
	008	Bandoneon 2		2	-----			-----	
	016	Bandoneon 3		2	-----			-----	

Guitar

PC	CC00	Tone Set 3		Voices	Tone Set 2		Voices	Tone Set 1	Voices
025	000	Nylon-str.Gt		2	Nylonstr.Gt		1	Nylon Gt.	1
	008	Ukulele	#	1	Ukulele1		1	Ukulele	1
	016	Nylon Gt.o		2	Nylon Gt.o		2	Nylon Gt.o	2
	024	Velo Harmnix	#	1	VeloHarmnix		1	-----	
	032	Nylon Gt 2		1	Nylon Gt.2		1	Nylon Gt.2	1
	040	Lequint Gt.	#	1	Lequint Gt.		1	-----	
026	000	Steel-str.Gt		1	Steelstr.Gt		1	Steel Gt.	1
	008	12-str.Gt		2	12-str.Gt		2	12-str.Gt	2
	009	Nylon+Steel		2	Nylon+Steel		2	-----	
	016	Mandolin	#	2	Mandolin		2	Mandolin	1
	017	Mandolin 2		2	-----			-----	
	018	MandolinTrem		2	-----			-----	
	032	Steel Gt.2	#	1	Steel Gt.2		1	-----	
027	000	Jazz Gt.		1	Jazz Gt.	*	1	Jazz Gt.	1
	001	Mellow Gt.	#	2	Mellow Gt.		2	-----	
	008	Pedal Steel	#	1	Pedal Steel		1	Hawaiian Gt	1
028	000	Clean Gt.		1	Clean Gt.		1	Clean Gt.	1
	001	Clean Half		1	-----			-----	
	002	Open Hard 1		2	-----			-----	
	003	Open Hard 2		1	-----			-----	
	004	JC Clean Gt.		1	-----			-----	
	008	Chorus Gt.		2	Chorus Gt.		2	Chorus Gt.	2
	009	JC Chorus Gt		2	-----			-----	
	016	TC FrontPick		1	-----			-----	
	017	TC Rear Pick		1	-----			-----	

PC	CC00	Tone Set 3		Voices	Tone Set 2		Voices	Tone Set 1	Voices
	018	TC Clean ff		2	-----			-----	
	019	TC Clean 2	:	2	-----			-----	
029	000	Muted Gt.		1	Muted Gt.		1	Muted Gt.	1
	001	Muted Dis.Gt	#	1	MutedDis.Gt		1	-----	
	002	TC Muted Gt.		2	-----			-----	
	008	Funk Pop	#	1	Funk Pop		1	Funk Gt.	1
	016	Funk Gt.2	#	1	Funk Gt.2		1	Funk Gt.2	1
030	000	OverdriveGt		2	OverdriveGt		1	OverdriveGt	1
	001	Overdrive 2		2	-----			-----	
	002	Overdrive 3		2	-----			-----	
	003	More Drive		2	-----			-----	
	008	LP OverDrvGt		2	-----			-----	
	009	LP OverDrv	:	2	-----			-----	
031	000	DistortionGt		2	DistortionGt		1	Dist.Gt.	1
	001	Dist. Gt2	:	2	Dist. Gt2		2	-----	
	002	Dazed Guitar	#	2	DazedGuitar		2	-----	
	003	Distortion	:	2	-----			-----	
	004	Dist.Fast	:	2	-----			-----	
	008	Feedback Gt.	#	2	FeedbackGt.		2	Feedback Gt	2
	009	Feedback Gt2	#	2	FeedbackGt2		2	-----	
	016	Power Guitar	#	2	PowerGuitar		2	-----	
	017	Power Gt.2		2	Power Gt.2		2	-----	
	018	5th Dist.	#	2	5th Dist.		2	-----	
	024	Rock Rhythm	#	2	Rock Rhythm		2	-----	
	025	Rock Rhythm2	#	2	RockRhythm2		2	-----	
032	000	Gt.Harmonics	#	1	Gt.Harmonix	*	1	Gt.Harmonix	1
	008	Gt. Feedback	#	1	Gt.Feedback	*	1	Gt.Feedback	1
	009	Gt.Feedback2		2	-----			-----	
	016	Ac.Gt.Harmnx	#	1	Ac.Gt.Harm.		1	-----	
	024	E.Bass Harm.		1	-----			-----	

Bass

PC	CC00	Tone Set 3		Voices	Tone Set 2		Voices	Tone Set 1	Voices
033	000	Acoustic Bs.		1	AcousticBs.		2	Acoustic Bs	1
	001	Rockabilly		2	-----			-----	
	008	Wild A.Bass		2	-----			-----	
	016	Bass + OHH		2	-----			-----	
034	000	Fingered Bs.		1	FingeredBs.		1	Fingered Bs	1
	001	Fingered Bs2		2	FingeredBs2		2	-----	
	002	Jazz Bass	#	1	Jazz Bass		1	-----	
	003	Jazz Bass 2		2	-----			-----	
	004	Rock Bass		2	-----			-----	
	008	ChorusJazzBs		2	-----			-----	
	016	F.Bass/Harm.		1	-----			-----	
035	000	Picked Bass		1	Picked Bass		1	Picked Bass	1
	001	Picked Bass2		2	-----			-----	
	002	Picked Bass3		2	-----			-----	
	003	Picked Bass4		2	-----			-----	
	008	Muted PickBs		1	MutePickBs.		1	-----	
	016	P.Bass/Harm.		1	-----			-----	
036	000	Fretless Bs.	#	1	FretlessBs.		1	Fretless Bs	1
	001	Fretless Bs2		2	FretlessBs2		2	-----	
	002	Fretless Bs3	#	2	FretlessBs3		2	-----	

Appendices

PC	CC00	Tone Set 3		Voices	Tone Set 2	Voices	Tone Set 1	Voices
	003	Fretless Bs4	#	2	FretlessBs4	2	-----	
	004	Syn Fretless	#	2	SynFretless	2	-----	
	005	Mr.Smooth	#	2	Mr.Smooth	2	-----	
	008	Wood+FlessBs		2	-----		-----	
037	000	Slap Bass 1	#	1	Slap Bass 1	1	Slap Bass 1	1
	001	Slap Pop		1	-----		-----	
	008	Reso Slap	#	1	Reso Slap	1	-----	
	009	Unison Slap		2	-----		-----	
038	000	Slap Bass 2	#	2	Slap Bass 2	2	Slap Bass 2	1
	008	FM Slap		2	-----		-----	
039	000	Synth Bass 1	#	2	SynthBass 1	2	Syn.Bass 1	1
	001	SynthBass101	#	1	Syn.Bass101	* 1	Syn.Bass101	1
	002	CS Bass		2	-----		-----	
	003	JP-4 Bass		1	-----		-----	
	004	JP-8 Bass		2	-----		-----	
	005	P5 Bass		1	-----		-----	
	006	JPMG Bass		2	-----		-----	
	008	Acid Bass	#	1	Acid Bass	1	Syn.Bass 3	1
	009	TB303 Bass	#	1	TB303 Bass	1	-----	
	010	Tekno Bass	#	2	Tekno Bass	2	-----	
	011	TB303 Bass 2		1	-----		-----	
	012	Kicked TB303		2	-----		-----	
	013	TB303 Saw Bs		1	-----		-----	
	014	Rubber303 Bs		1	-----		-----	
	015	Reso 303 Bs		1	-----		-----	
	016	Reso SH Bass	#	1	Reso SHBass	1	-----	
	017	303 Sqr Bs		1	-----		-----	
	018	TB303 DistBs		1	-----		-----	
	024	Arpeggio Bs		1	-----		-----	
040	000	Synth Bass 2	#	2	SynthBass 2	2	Syn.Bass 2	2
	001	SynthBass201	#	2	Syn.Bass201	2	-----	
	002	Modular Bass	#	2	ModularBass	2	-----	
	003	Seq Bass	#	2	Seq Bass	2	-----	
	004	MG Bass			-----		-----	
	005	Mg Oct Bass 1			-----		-----	
	006	MG Oct Bass2		2	-----		-----	
	007	MG Blip Bs	:	2	-----		-----	
	008	Beef FM Bass	#	2	Beef FMBass	2	Syn.Bass 4	2
	009	Dly Bass		2	X Wire Bass	2	-----	
	010	X Wire Bass	#	2	-----		-----	
	011	WireStr Bss		2	-----		-----	
	012	Blip Bass	:	2	-----		-----	
	013	RubberBass 1		2	-----		-----	

PC	CC00	Tone Set 3		Voices	Tone Set 2	Voices	Tone Set 1	Voices
	016	RubberBass 2		2	Rubber Bass	* 2	Rubber Bass	2
	017	SH101 Bass 1	#	1	SH101Bass 1	1	-----	
	018	SH101 Bass 2	#	1	SH101Bass 2	1	-----	
	019	Smooth Bass	#	2	Smooth Bass	2	-----	
	020	SH101 Bass 3		1	-----		-----	
	021	Spike Bass		1	-----		-----	
	022	House Bass	:	2	-----		-----	
	023	KG Bass		2	-----		-----	
	024	Sync Bass		2	-----		-----	
	025	MG 5th Bass		2	-----		-----	
	026	RND Bass		2	-----		-----	
	027	WowMG Bass		2	-----		-----	
	028	Bubble Bass		2	-----		-----	

■ Strings/Orchestra

PC	CC00	Tone Set 3		Voices	Tone Set 2	Voices	Tone Set 1	Voices
041	000	Violin	:	2	Violin	1	Violin	1
	001	Violin Atk	:	2	-----		-----	
	008	Slow Violin		1	Slow Violin	1	Slow Violin	1
042	000	Viola	:	2	Viola	1	Viola	1
	001	Viola Atk.	:	2	-----		-----	
043	000	Cello	:	2	Cello	1	Cello	1
	001	Cello Atk.	:	2	-----		-----	
044	000	Contrabass		1	Contrabass	1	Contrabass	1
045	000	Tremolo Str	#	1	Tremolo Str	1	Tremolo Str	1
	008	Slow Tremolo	#	1	SlowTremolo	1	-----	
	009	Suspense Str	#	2	SuspenseStr	2	-----	
046	000	PizzicatoStr	#	1	Pizz. Str.	1	Pizzicato	1
	001	Vcs&Cbs Pizz		2	-----		-----	
	002	Chamber Pizz		2	-----		-----	
	003	St.Pizzicato		2	-----		-----	
	008	Solo Pizz.		1	-----		-----	
	016	Solo Spic.		1	-----		-----	
047	000	Harp	#	1	Harp	1	Harp	1
	016	Synth Harp		1	-----		-----	
048	000	Timpani	#	1	Timpani	1	Timpani	1

■ Ensemble

PC	CC00	Tone Set 3		Voices	Tone Set 2	Voices	Tone Set 1	Voices
049	000	Strings	:	2	Strings	1	Strings	1
	001	Bright Str	:	1	Strings 2	1	-----	
	002	ChamberStr	:	2	-----		-----	
	003	Cello sect.		1	-----		-----	
	008	Orchestra		2	Orchestra	2	Orchestra	2
	009	Orchestra 2		2	Orchestra 2	2	-----	
	010	Tremolo Orch	#	2	TremoloOrch	2	-----	
	011	Choir Str.		2	Choir Str.	2	-----	
	012	Strings+Horn		2	-----		-----	
	016	St. Strings		2	St.Strings	2	-----	
	024	Velo Strings	#	2	VeloStrings	2	-----	
	032	Oct Strings1		2	-----		-----	
	033	Oct Strings2		2	-----		-----	

PC:	program number (Tone number)
CC00:	value of controller number 0 (Bank number, Variation number)
Remark ::	legato-enabled sounds
Voices:	number of voices used by the Tone
Remark #:	same sounds as Tone Set 2
Remark *:	same sound as Tone Set 1
Remark +:	a percussive sound which cannot be played melodically. Use near C4 (note number 60).

PC	CC00	Tone Set 3	Voices	Tone Set 2	Voices	Tone Set 1	Voices
050	000	**SlowStrings**	**1**	**SlowStrings**	**1**	**SlowStrings**	**1**
	001	SlowStrings2	1	Slow Str. 2	1	-----	
	008	Legato Str. #	2	Legato Str.	2	-----	
	009	Warm Strings #	2	WarmStrings	2	-----	
	010	St.Slow Str.	2	St.SlowStr.	2	-----	
051	000	**Syn.Strings1**	**2**	**SynStrings1**	**2**	**SynStrings1**	**1**
	001	OB Strings	2	OB Strings	2	-----	
	002	StackStrings	2	-----		-----	
	003	JP Strings	2	-----		-----	
	008	Syn.Strings3 #	2	SynStrings3 *	2	SynStrings3	2
	009	Syn.Strings4	2	-----		-----	
	016	High Strings	2	-----		-----	
	017	Hybrid Str.	2	-----		-----	
	024	Tron Strings	2	-----		-----	
	025	Noiz Strings	2	-----		-----	
052	000	**Syn.Strings2 #**	**2**	**SynStrings2 ***	**2**	**SynStrings2**	**2**
	001	Syn.Strings5	2	-----		-----	
	002	JUNO Strings	2	-----		-----	
	008	Air Strings	2	-----		-----	
053	000	**Choir Aahs**	**1**	**Choir Aahs**	**1**	**Choir Aahs**	**1**
	008	St.ChoirAahs	2	St.Choir	2	-----	
	009	Melted Choir	2	Mello Choir	2	-----	
	010	Church Choir	2	-----		-----	
	016	Choir Hahs	1	-----		-----	
	024	Chorus Lahs	1	-----		-----	
	032	Chorus Aahs	2	ChoirAahs 2 *	1	Choir Aahs2	1
	033	Male Aah+Str	2	-----		-----	
054	000	**Voice Oohs #**	**1**	**Voice Oohs ***	**1**	**Voice Oohs**	**1**
	008	Voice Dahs	1	-----		-----	
055	000	**SynVox #**	**1**	**SynVox ***	**1**	**SynVox**	**1**
	008	Syn.Voice #	2	Syn.Voice	2	-----	
	009	Silent Night	2	-----		-----	
	016	VP330 Choir	1	-----		-----	
	017	Vinyl Choir	2	-----		-----	
056	000	**OrchestraHit #**	**2**	**Orch. Hit**	**2**	**Orchest.Hit**	**2**
	008	Impact Hit #	2	Impact Hit	2	-----	
	009	Philly Hit #	2	Philly Hit	2	-----	
	010	Double Hit #	2	Double Hit	2	-----	
	011	Perc.Hit	1	-----		-----	
	012	Shock Wave	2	-----		-----	
	016	Lo Fi Rave #	2	Lo Fi Rave	2	-----	
	017	Techno Hit	1	-----		-----	
	018	Dist.Hit	1	-----		-----	
	019	Bam Hit	1	-----		-----	
	020	Bit Hit	1	-----		-----	
	021	Bim Hit	1	-----		-----	
	022	Technorg Hit	1	-----		-----	
	023	Rave Hit	2	-----		-----	
	024	Strings Hit	2	-----		-----	
	025	Stack Hit	2	-----		-----	

■ Brass

PC	CC00	Tone Set 3	Voices	Tone Set 2	Voices	Tone Set 1	Voices
057	000	**Trumpet**	**1**	**Trumpet**	**1**	**Trumpet**	**1**
	001	Trumpet 2 #	1	Trumpet 2	1	-----	
	002	Trumpet :	1	-----		-----	
	008	Flugel Horn #	1	Flugel Horn	1	-----	
	016	4th Trumpets	2	-----		-----	
	024	Bright Tp.	2	Bright Tp.	2	-----	
	025	Warm Tp. #	2	Warm Tp.	2	-----	
	032	Syn. Trumpet	1	-----		-----	
058	000	**Trombone**	**1**	**Trombone**	**1**	**Trombone**	**1**
	001	Trombone 2	1	Trombone 2 *	2	Trombone 2	2
	002	Twin bones	2	-----		-----	
	008	Bs. Trombone	1	-----		-----	
059	000	**Tuba #**	**1**	**Tuba**	**1**	**Tuba**	**1**
	001	Tuba 2 #	1	Tuba 2	1	-----	
060	000	**MutedTrumpet#**	**1**	**Muted Tp.**	**1**	**MuteTrumpet**	**1**
	008	Muted Horns	1	-----		-----	
061	000	**French Horns#**	**1**	**FrenchHorns**	**1**	**French Horn**	**2**
	001	Fr.Horn 2 #	2	Fr.Horn 2 *	2	Fr.Horn 2	2
	002	Horn + Orche	2	-----		-----	
	003	Wide FreHrns	2	-----		-----	
	008	F.Hm Slow :	1	Fr.HornSolo	1	-----	
	009	Dual Horns	2	-----		-----	
	016	Synth Horn	2	Horn Orch	2	-----	
	024	F.Horn Rip	1	-----		-----	
062	000	**Brass 1**	**2**	**Brass 1 ***	**1**	**Brass 1**	**1**
	001	Brass ff	1	-----		-----	
	002	Bones Sect.	1	-----		-----	
	008	Brass 2	2	Brass 2	2	Brass 2	2
	009	Brass 3	2	-----		-----	
	010	Brass sfz	2	-----		-----	
	016	Brass Fall #	1	Brass Fall	1	-----	
	017	Trumpet Fall	1	-----		-----	
	024	Octave Brass	2	-----		-----	
	025	Brass + Reed	2	-----		-----	
063	000	**SynthBrass1**	**2**	**SynthBrass1**	**2**	**Syn.Brass 1**	**2**
	001	JUNO Brass	2	Poly Brass	2	-----	
	002	StackBrass	2	-----		-----	
	003	SH-5 Brass	2	-----		-----	
	004	MKS Brass	2	-----		-----	
	008	Pro Brass	2	Syn.Brass 3 *	2	Syn.Brass 3	2
	009	P5 Brass	2	Quack Brass	2	-----	
	016	Oct SynBrass	2	OctaveBrass	2	Analog Brs1	2
	017	Hybrid Brass	2	-----		-----	
064	000	**SynthBrass 2**	**2**	**Syn.Brass 2 ***	**2**	**Syn.Brass 2**	**2**
	001	Soft Brass	2	Soft Brass	2	-----	
	002	Warm Brass	2	-----		-----	
	008	SynBrass sfz	1	Syn.Brass 4 *	1	Syn.Brass 4	1
	009	OB Brass	2	-----		-----	
	010	Reso Brass	2	-----		-----	
	016	Velo Brass 1 #	2	VeloBrass 1	2	Analog Brs2	2
	017	Transbrass	2	VeloBrass 2	2	-----	

Appendices

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■ Reed

PC	CC00	Tone Set 3		Voices	Tone Set 2		Voices	Tone Set 1	Voices
065	000	Soprano Sax		1	Soprano Sax		1	Soprano Sax	1
	008	SopranoExp.		1	-----			-----	
066	000	Alto Sax		1	Alto Sax		1	Alto Sax	1
	008	AltoSax Exp.		1	Hyper Alto		1	-----	
	009	Grow Sax		1	-----			-----	
	016	AltoSax + Tp		2	-----			-----	
067	000	Tenor Sax		2	Tenor Sax		2	Tenor Sax	1
	001	Tenor Sax	:	2	-----			-----	
	008	BreathyTn.	:	1	BreathyTnr.		1	-----	
	009	St.Tenor Sax		2	-----			-----	
068	000	Baritone Sax		2	BaritoneSax		1	BaritoneSax	1
	001	Bari. Sax	:	2	-----			-----	
069	000	Oboe		1	Oboe		1	Oboe	1
	008	Oboe Exp.		1	-----			-----	
	016	Multi Reed		1	-----			-----	
070	000	English Horn	#	1	EnglishHorn		1	EnglishHorn	1
071	000	Bassoon	#	1	Bassoon		1	Bassoon	1
072	000	Clarinet		1	Clarinet		1	Clarinet	1
	008	Bs Clarinet	#	1	Bs Clarinet		1	-----	
	016	Multi Wind		1	-----			-----	

■ Pipe

PC	CC00	Tone Set 3		Voices	Tone Set 2		Voices	Tone Set 1	Voices
073	000	Piccolo	#	1	Piccolo		1	Piccolo	1
	001	Piccolo	:	1	-----			-----	
	008	Nay		2	-----			-----	
	009	Nay Tremolo		2	-----			-----	
	016	Di		2	-----			-----	
074	000	Flute	#	1	Flute		1	Flute	1
	001	Flute 2	:	1	-----			-----	
	002	Flute Exp.		1	-----			-----	
	003	Flt Travelso		2	-----			-----	
	008	Flute + Vln		2	-----			-----	
	016	Tron Flute		1	-----			-----	
075	000	Recorder	#	1	Recorder	*	1	Recorder	1
076	000	Pan Flute	#	2	Pan Flute		2	Pan Flute	1
	008	Kawala	#	2	Kawala		2	-----	
	016	Zampona		2	-----			-----	
	017	Zampona Atk		1	-----			-----	
077	000	Bottle Blow	#	2	Bottle Blow		2	Bottle Blow	2
078	000	Shakuhachi	#	2	Shakuhachi	*	2	Shakuhachi	2
	001	Shakuhachi	:	2	-----			-----	

PC: program number (Tone number)
CC00: value of controller number 0 (Bank number, Variation number)
Remark :: legato-enabled sounds
Voices: number of voices used by the Tone
Remark #: same sounds as Tone Set 2
Remark *: same sound as Tone Set 1
Remark +: a percussive sound which cannot be played melodically. Use near C4 (note number 60).

PC	CC00	Tone Set 3		Voices	Tone Set 2		Voices	Tone Set 1	Voices
079	000	Whistle	#	1	Whistle	*	1	Whistle	1
	001	Whistle 2		2	-----			-----	
080	000	Ocarina	#	1	Ocarina	*	1	Ocarina	1

■ Synth lead

PC	CC00	Tone Set 3		Voices	Tone Set 2		Voices	Tone Set 1	Voices
081	000	Square Wave		2	Square Wave	*	2	Square Wave	2
	001	MG Square		1	Square	*	1	Square	1
	002	Hollow Mini	#	1	Hollow Mini		1	-----	
	003	Mellow FM	#	2	Mellow FM		2	-----	
	004	CC Solo	#	2	CC Solo		2	-----	
	005	Shmoog	#	2	Shmoog		2	-----	
	006	LM Square	#	2	LM Square		2	-----	
	008	2600 Sine		1	Sine Wave	*	1	Sine Wave	1
	009	Sine Lead		1	-----			-----	
	010	KG Lead		1	-----			-----	
	016	P5 Square		1	-----			-----	
	017	OB Square		1	-----			-----	
	018	JP-8 Square		1	-----			-----	
	024	Pulse Lead		2	-----			-----	
	025	JP8 PulseLd1		2	-----			-----	
	026	JP8 PulseLd2		1	-----			-----	
	027	MG Reso. Pls		1	-----			-----	
082	000	Saw Wave		2	Saw Wave	*	2	Saw Wave	2
	001	OB2 Saw		1	Saw	*	1	Saw	1
	002	Pulse Saw	#	2	Pulse Saw		2	-----	
	003	Feline GR	#	2	Feline GR		2	-----	
	004	Big Lead	#	2	Big Lead		2	-----	
	005	Velo Lead	#	2	Velo Lead		2	-----	
	006	GR-300	#	2	GR-300		2	-----	
	007	LA Saw	#	1	LA Saw		1	-----	
	008	Doctor Solo	#	2	Doctor Solo	*	2	Doctor Solo	2
	009	Fat Saw Lead		2	-----			-----	
	011	D-50 Fat Saw		2	-----			-----	
	016	Waspy Synth	#	2	Waspy Synth		2	-----	
	017	PM Lead		1	-----			-----	
	018	CS Saw Lead		1	-----			-----	
	024	MG Saw 1		1	-----			-----	
	025	MG Saw 2		1	-----			-----	
	026	OB Saw 1		1	-----			-----	
	027	OB Saw 2		1	-----			-----	
	028	D-50 Saw		1	-----			-----	
	029	SH-101 Saw		1	-----			-----	
	030	CS Saw		1	-----			-----	
	031	MG Saw Lead		1	-----			-----	
	032	OB Saw Lead		1	-----			-----	
	033	P5 Saw Lead		2	-----			-----	
	034	MG unison		2	-----			-----	
	035	Oct Saw Lead		2	-----			-----	
	040	SequenceSaw1		2	-----			-----	
	041	SequenceSaw2		1	-----			-----	
	042	Reso Saw		1	-----			-----	
	043	Cheese Saw 1		1	-----			-----	

PC	CC00	Tone Set 3	Voices	Tone Set 2	Voices	Tone Set 1	Voices
	044	Cheese Saw 2	2	-----		-----	
	045	Rhythmic Saw	2	-----		-----	
083	000	Syn.Calliope #	2	SynCalliope *	2	SynCalliope	2
	001	Vent Synth #	2	Vent Synth	2	-----	
	002	Pure PanLead #	2	PurePanLead	2	-----	
084	000	Chiffer Lead #	2	ChifferLead *	2	ChifferLead	2
	001	TB Lead	2	-----		-----	
	008	Mad Lead	2	-----		-----	
085	000	Charang #	2	Charang *	2	Charang	2
	008	Dist.Lead #	2	Dist.Lead	2	-----	
	009	Acid Guitar1	2	-----		-----	
	010	Acid Guitar2	2	-----		-----	
	016	P5 Sync Lead	1	-----		-----	
	017	Fat Sync Lead	2	-----		-----	
	018	Rock Lead	2	-----		-----	
	019	5th DecaSync	2	-----		-----	
	020	Dirty Sync	1	-----		-----	
	024	JUNO Sub Osc	1	-----		-----	
086	000	Solo Vox #	2	Solo Vox *	2	Solo Vox	2
	008	Vox Lead	2	-----		-----	
	009	LFO Vox	2	-----		-----	
087	000	5th Saw Wave#	2	5th Saw *	2	5th Saw	2
	001	Big Fives #	2	Big Fives	2	-----	
	002	5th Lead	2	-----		-----	
	003	5th Ana.Clav	2	-----		-----	
	008	4th Lead	2	-----		-----	
088	000	Bass & Lead #	2	Bass & Lead *	2	Bass & Lead	2
	001	Big & Raw #	2	Big & Raw	2	-----	
	002	Fat & Perky #	2	Fat & Perky	2	-----	
	003	JUNO Rave	1	-----		-----	
	004	JP8 BsLead 1	1	-----		-----	
	005	JP8 BsLead 2	2	-----		-----	
	006	SH-5 Bs.Lead	2	-----		-----	

■ Synth pad, etc

PC	CC00	Tone Set 3	Voices	Tone Set 2	Voices	Tone Set 1	Voices
089	000	Fantasia #	2	Fantasia *	2	Fantasia	2
	001	Fantasia 2 #	2	Fantasia 2	2	-----	
	002	New Age Pad	2	-----		-----	
	003	Bell Heaven	2	-----		-----	
090	000	Warm Pad #	1	Warm Pad *	1	Warm Pad	1
	001	Thick Matrix	2	Thick Pad	2	-----	
	002	Horn Pad #	2	Horn Pad	2	-----	
	003	Rotary Strng #	2	RotaryStrng	2	-----	
	004	OB Soft Pad	2	Soft Pad	2	-----	
	008	Octave Pad	2	-----		-----	
	009	Stack Pad	2	-----		-----	
091	000	Polysynth #	2	Polysynth *	2	Polysynth	2
	001	80's PolySyn #	2	80'sPolySyn	2	-----	
	002	Polysynth 2	2	-----		-----	
	003	Poly King	2	-----		-----	
	008	Power Stack	2	-----		-----	
	009	Octave Stack	2	-----		-----	

PC	CC00	Tone Set 3	Voices	Tone Set 2	Voices	Tone Set 1	Voices
	010	Reso Stack	1	-----		-----	
	011	Techno Stack	2	-----		-----	
092	000	Space Voice #	1	Space Voice *	1	Space Voice	1
	001	Heaven II #	2	Heaven II	2	-----	
	002	SC Heaven	2	-----		-----	
	008	Cosmic Voice	2	-----		-----	
	009	Auh Vox	1	-----		-----	
	010	AuhAuh	2	-----		-----	
	011	Vocorderman	2	-----		-----	
093	000	Bowed Glass #	2	Bowed Glass *	2	Bowed Glass	2
	001	SoftBellPad	2	-----		-----	
	002	JP8 Sqr Pad	2	-----		-----	
	003	7thBelPad	2	-----		-----	
094	000	Metal Pad #	2	Metal Pad *	2	Metal Pad	2
	001	Tine Pad #	2	Tine Pad	2	-----	
	002	Panner Pad #	2	Panner Pad	2	-----	
095	000	Halo Pad #	2	Halo Pad *	2	Halo Pad	2
	001	Vox Pad	2	-----		-----	
	002	Vox Sweep	2	-----		-----	
	008	Horror Pad	2	-----		-----	
096	000	Sweep Pad #	1	Sweep Pad *	1	Sweep Pad	1
	001	Polar Pad #	1	Polar Pad	1	-----	
	008	Converge #	1	Converge	1	-----	
	009	Shwimmer #	2	Shwimmer	2	-----	
	010	Celestial Pd #	2	CelestialPd	2	-----	
	011	Bag Sweep	2	-----		-----	

■ Synth SFX

PC	CC00	Tone Set 3	Voices	Tone Set 2	Voices	Tone Set 1	Voices
097	000	Ice Rain #	2	Ice Rain *	2	Ice Rain	2
	001	Harmo Rain #	2	Harmo Rain	2	-----	
	002	African wood #	2	AfricanWood	2	-----	
	003	Anklung Pad	2	-----		-----	
	004	Rattle Pad	2	-----		-----	
	008	Clavi Pad #	2	Clavi Pad	2	-----	
098	000	Soundtrack #	2	Soundtrack *	2	Soundtrack	2
	001	Ancestral #	2	Ancestral	2	-----	
	002	Prologue #	2	Prologue	2	-----	
	003	Prologue 2	2	-----		-----	
	004	Hols Strings	2	-----		-----	
	008	Rave #	2	Rave	2	-----	
099	000	Crystal #	2	Crystal *	2	Crystal	2
	001	Syn Mallet #	1	Syn Mallet *	1	Syn Mallet	1
	002	Soft Crystal #	2	SoftCrystal	2	-----	
	003	Round Glock #	2	Round Glock	2	-----	
	004	Loud Glock #	2	Loud Glock	2	-----	
	005	GlockenChime#	2	GlocknChime	2	-----	
	006	Clear Bells #	2	Clear Bells	2	-----	
	007	ChristmasBel #	2	X'mas Bell	2	-----	
	008	Vibra Bells #	2	Vibra Bells	2	-----	
	009	Digi Bells #	2	Digi Bells	2	-----	
	010	Music Bell	2	-----		-----	
	011	Analog Bell	1	-----		-----	

PC	CC00	Tone Set 3		Voices	Tone Set 2		Voices	Tone Set 1	Voices
	016	Choral Bells	#	2	ChoralBells		2	-----	
	017	Air Bells	#	2	Air Bells		2	-----	
	018	Bell Harp	#	2	Bell Harp		2	-----	
	019	Gamelimba	#	2	Gamelimba		2	-----	
	020	JUNO Bell		2	-----			-----	
100	000	Atmosphere	#	2	Atmosphere	*	2	Atmosphere	2
	001	Warm Atmos	#	2	Warm Atmos		2	-----	
	002	Nylon Harp	#	2	Nylon Harp		2	-----	
	003	Harpvox	#	2	Harpvox		2	-----	
	004	HollowReleas	#	2	HollowRels.		2	-----	
	005	Nylon+Rhodes	#	2	NylonRhodes		2	-----	
	006	Ambient Pad	#	2	Ambient Pad		2	-----	
	007	Invisible		2	-----			-----	
	008	Pulsey Key		2	-----			-----	
	009	Noise Piano		2	-----			-----	
101	000	Brightness	#	2	Brightness	*	2	Brightness	2
	001	Shining Star		2	-----			-----	
	002	OB Stab		1	-----			-----	
	008	Org Bell		2	-----			-----	
102	000	Goblin	#	2	Goblin	*	2	Goblin	2
	001	Goblinson	#	2	Goblinson		2	-----	
	002	50's Sci-Fi	#	2	50's Sci-Fi		2	-----	
	003	Abduction		2	-----			-----	
	004	Auhbient		2	-----			-----	
	005	LFO Pad		2	-----			-----	
	006	Random Str		2	-----			-----	
	007	Random Pad		2	-----			-----	
	008	LowBirds Pad		2	-----			-----	
	009	Falling Down		2	-----			-----	
	010	LFO RAVE		2	-----			-----	
	011	LFO Horror		2	-----			-----	
	012	LFO Techno		2	-----			-----	
	013	Alternative		2	-----			-----	
	014	UFO FX		2	-----			-----	
	015	Gargle Man		1	-----			-----	
	016	Sweep FX		1	-----			-----	
103	000	Echo Drops	#	1	Echo Drops	*	1	Echo Drops	1
	001	Echo Bell	#	2	Echo Bell	*	2	Echo Bell	2
	002	Echo Pan	#	2	Echo Pan	*	2	Echo Pan	2
	003	Echo Pan 2	#	2	Echo Pan 2		2	-----	
	004	Big Panner	#	2	Big Panner		2	-----	
	005	Reso Panner	#	2	Reso Panner		2	-----	
	006	Water Piano	#	2	Water Piano		2	-----	

PC	CC00	Tone Set 3		Voices	Tone Set 2		Voices	Tone Set 1	Voices
	008	Pan Sequence		2	-----			-----	
	009	Aqua		2	-----			-----	
104	000	Star Theme	#	2	Star Theme	*	2	Star Theme	2
	001	Star Theme 2	#	2	StarTheme 2		2	-----	
	008	Dream Pad		2	-----			-----	
	009	Silky Pad		2	-----			-----	
	016	New Century		1	-----			-----	
	017	7th Atmos.		2	-----			-----	
	018	Galaxy Way		2	-----			-----	

■ Ethnic, etc

PC	CC00	Tone Set 3		Voices	Tone Set 2		Voices	Tone Set 1	Voices
105	000	Sitar	#	1	Sitar	*	1	Sitar	1
	001	Sitar 2	#	2	Sitar 2	*	2	Sitar 2	2
	002	Detune Sitar	#	2	DetuneSitar		2	-----	
	003	Sitar 3		2	-----			-----	
	008	Tambra	#	1	Tambra		1	-----	
	016	Tamboura	#	2	Tamboura		2	-----	
106	000	Banjo	#	1	Banjo		1	Banjo	1
	001	Muted Banjo	#	1	Muted Banjo		1	-----	
	008	Rabab	#	2	Rabab		2	-----	
	009	San Xian		2	-----			-----	
	016	Gopichant	#	2	Gopichant		2	-----	
	024	Oud	#	2	Oud		2	-----	
	028	Oud+Strings		2	-----			-----	
	032	Pi Pa		1	-----			-----	
107	000	Shamisen	#	1	Shamisen	*	1	Shamisen	1
	001	Tsugaru	#	2	Tsugaru		2	-----	
	008	Syn Shamisen		2	-----			-----	
108	000	Koto		2	Koto	*	1	Koto	1
	001	Gu Zheng		2	-----			-----	
	008	Taisho Koto	#	1	Taisho Koto		1	Taisho Koto	2
	016	Kanoon	#	2	Kanoon		2	-----	
	019	Kanoon+Choir		2	-----			-----	
	024	Oct Harp		1	-----			-----	
109	000	Kalimba		1	Kalimba		1	Kalimba	1
	008	Sanza		2	-----			-----	
110	000	Bagpipe	#	1	Bagpipe		1	Bagpipe	1
	008	Didgeridoo	+	1	-----			-----	
111	000	Fiddle	#	1	Fiddle	*	1	Fiddle	1
	008	Er Hu		1	-----			-----	
	009	Gao Hu		1	-----			-----	
112	000	Shanai	#	1	Shanai	*	1	Shanai	1
	001	Shanai 2	#	1	Shanai 2		1	-----	
	008	Pungi	#	1	Pungi		1	-----	
	016	Hichiriki	#	2	Hichiriki		2	-----	
	024	Mizmar		1	-----			-----	
	032	Suona 1		1	-----			-----	
	033	Suona 2		1	-----			-----	

PC:	program number (Tone number)
CC00:	value of controller number 0 (Bank number, Variation number)
Remark ::	legato-enabled sounds
Voices:	number of voices used by the Tone
Remark #:	same sounds as Tone Set 2
Remark *:	same sound as Tone Set 1
Remark +:	a percussive sound which cannot be played melodically. Use near C4 (note number 60).

■ Percussive

PC	CC00	Tone Set 3	Voices	Tone Set 2	Voices	Tone Set 1	Voices
113	000	Tinkle Bell #	1	Tinkle Bell *	1	Tinkle Bell	1
	008	Bonang #	1	Bonang	1	-----	
	009	Gender #	1	Gender	1	-----	
	010	Gamelan Gong#	1	GamelanGong	1	-----	
	011	St.Gamelan #	2	St.Gamelan	2	-----	
	012	Jang-Gu	2	-----		-----	
	016	RAMA Cymbal#	1	RAMA Cymbal	1	-----	
114	000	Agogo #	1	Agogo	1	Agogo	1
	008	Atarigane #	1	Atarigane	1	-----	
	016	Tambourine +	1	-----		-----	
115	000	Steel Drums #	1	Steel Drums *	1	Steel Drums	1
	001	Island Mlt	2	-----		-----	
116	000	Woodblock #+	1	Woodblock *+	1	Woodblock +	1
	008	Castanets #+	1	Castanets *+	1	Castanets +	1
	016	Angklung	1	-----		-----	
	017	Angkl Rhythm	2	-----		-----	
	024	Finger Snaps +	1	-----		-----	
	032	909 HandClap +	1	-----		-----	
117	000	Taiko #+	1	Taiko *+	1	Taiko +	1
	001	Small Taiko +	1	-----		-----	
	008	Concert BD #+	1	Concert BD *+	1	Concert BD +	1
	016	Jungle BD +	1	-----		-----	
	017	Techno BD +	1	-----		-----	
	018	Bounce +	1	-----		-----	
118	000	Melo. Tom 1 #+	1	Melo. Tom 1 *+	1	Melo. Tom 1 +	1
	001	Real Tom #+	2	Real Tom +	2	-----	
	008	Melo. Tom 2 #+	1	Melo. Tom 2 *+	1	Melo. Tom 2 +	1
	009	Rock Tom #+	2	Rock Tom +	2	-----	
	016	Rash SD +	1	-----		-----	
	017	House SD +	1	-----		-----	
	018	Jungle SD +	1	-----		-----	
	019	909 SD +	1	-----		-----	
119	000	Synth Drum #+	1	Synth Drum *+	1	Synth Drum +	1
	008	808 Tom #+	2	808 Tom +	2	808 Tom +	1
	009	Elec Perc #+	1	Elec Perc *+	1	Elec Perc +	1
	010	Sine Perc.	1	-----		-----	
	011	606 Tom +	1	-----		-----	
	012	909 Tom +	1	-----		-----	
120	000	Reverse Cym.#+	1	Reverse Cym*+	1	Reverse Cym +	1
	001	Reverse Cym2#+	1	ReverseCym2 +	1	-----	
	002	Reverse Cym3+	1	-----		-----	
	008	Rev.Snare 1 #+	1	Rev.Snare 1 +	1	-----	
	009	Rev.Snare 2 #+	1	Rev.Snare 2 +	1	-----	
	016	Rev.Kick 1 #+	1	Rev.Kick 1 +	1	-----	
	017	Rev.ConBD #+	1	Rev.ConBD +	1	-----	
	024	Rev.Tom 1 #+	1	Rev.Tom 1 +	1	-----	
	025	Rev.Tom 2 #+	1	Rev.Tom 2 +	1	-----	

■ SFX

PC	CC00	Tone Set 3	Voices	Tone Set 2	Voices	Tone Set 1	Voices
121	000	Gt.FretNoise #	1	Gt.FretNoiz *	1	Gt.FretNoiz	1
	001	Gt.Cut Noise #+	1	Gt.CutNoise *+	1	Gt.CutNoise +	1
	002	String Slap #+	1	String Slap *+	1	String Slap +	1
	003	Gt.CutNoise2#+	1	Gt.CutNz. 2 +	1	-----	
	004	Dist.CutNoiz #+	1	Dist.CutNz. +	1	-----	
	005	Bass Slide #+	1	Bass Slide +	1	-----	
	006	Pick Scrape #+	1	Pick Scrape +	1	-----	
	008	Gt. FX Menu	1	-----		-----	
	009	Bartok Pizz.	1	-----		-----	
	010	Guitar Slap +	1	-----		-----	
	011	Chord Stroke	1	-----		-----	
	012	Biwa Stroke +	1	-----		-----	
	013	Biwa Tremolo +	1	-----		-----	
122	000	Breath Noise #	1	BreathNoise *	1	BreathNoise	1
	001	Fl.Key Click #+	1	Fl.KeyClick *+	1	Fl.KeyClick +	1
123	000	Seashore #+	1	Seashore *+	1	Seashore +	1
	001	Rain #+	1	Rain *+	1	Rain +	1
	002	Thunder #+	1	Thunder *+	1	Thunder +	1
	003	Wind #+	1	Wind *+	1	Wind +	1
	004	Stream #+	2	Stream *+	2	Stream +	2
	005	Bubble #+	2	Bubble *+	2	Bubble +	2
	006	Wind 2 +	1	-----		-----	
	016	Pink Noise	1	-----		-----	
	017	White Noise	1	-----		-----	
124	000	Bird #+	2	Bird *+	2	Bird +	2
	001	Dog #+	1	Dog *+	1	Dog +	1
	002	Horse-Gallop#+	1	HorseGallop *+	1	HorseGallop +	1
	003	Bird 2 #+	1	Bird 2 *+	1	Bird 2 +	1
	004	Kitty #+	1	Kitty +	1	-----	
	005	Growl #+	1	Growl +	1	-----	
125	000	Telephone 1 #+	1	Telephone 1 *+	1	Telephone 1 +	1
	001	Telephone 2 #+	1	Telephone 2 *+	1	Telephone 2 +	1
	002	DoorCreaking#+	1	Creaking *+	1	Creaking +	1
	003	Door #+	1	Door *+	1	Door +	1
	004	Scratch #+	1	Scratch *+	1	Scratch +	1
	005	Wind Chimes#+	2	Wind Chimes *+	2	Wind Chimes +	2
	007	Scratch 2 #+	1	Scratch 2 +	1	-----	
	008	ScratchKey +	2	-----		-----	
	009	TapeRewind +	1	-----		-----	
	010	Phono Noise +	1	-----		-----	
	011	MC-500 Beep	1	-----		-----	
126	000	Helicopter #+	1	Helicopter *+	1	Helicopter +	1
	001	Car-Engine #+	1	Car-Engine *+	1	Car-Engine +	1
	002	Car-Stop #+	1	Car-Stop *+	1	Car-Stop +	1
	003	Car-Pass #+	1	Car-Pass *+	1	Car-Pass +	1
	004	Car-Crash #+	2	Car-Crash *+	2	Car-Crash +	2
	005	Siren #+	1	Siren *+	1	Siren +	1
	006	Train #+	1	Train *+	1	Train +	1
	007	Jetplane #+	2	Jetplane *+	2	Jetplane +	2
	008	Starship #+	2	Starship *+	2	Starship +	2
	009	Burst Noise #+	2	Burst Noise *+	2	Burst Noise +	2
	010	Calculating +	2	-----		-----	

Appendices

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Tone List

PC	CC00	Tone Set 3		Voices	Tone Set 2		Voices	Tone Set 1		Voices
	011	Perc. Bang	+	2	-----			-----		
127	000	**Applause**	#+	2	**Applause**	'+	2	**Applause**	+	2
	001	Laughing	#+	1	Laughing	'+	1	Laughing	+	1
	002	Screaming	#+	1	Screaming	'+	1	Screaming	+	1
	003	Punch	#+	1	Punch	'+	1	Punch	+	1
	004	Heart Beat	#	1	Heart Beat	'	1	Heart Beat		1
	005	Footsteps	#+	1	Footsteps	'+	1	Footsteps	+	1
	006	Applause 2	#+	2	Applause 2	+	2	-----		
	007	Small Club	+	2	-----			-----		
	008	ApplauseWave	+	2	-----			-----		
	016	Voice One	+	1	-----			-----		
	017	Voice Two	+	1	-----			-----		
	018	Voice Three	+	1	-----			-----		
	019	Voice Tah	+	1	-----			-----		
	020	Voice Whey	+	1	-----			-----		
128	000	**Gun Shot**	#+	1	**Gun Shot**	'+	1	**Gun Shot**	+	1
	001	Machine Gun	#+	1	Machine Gun	'+	1	Machine Gun	+	1
	002	Lasergun	#+	1	Lasergun	'+	1	Lasergun	+	1
	003	Explosion	#+	2	Explosion	'+	2	Explosion	+	2
	004	Eruption	+	1	-----			-----		
	005	Big Shot	+	2	-----			-----		

PC:	program number (Tone number)
CC00:	value of controller number 0 (Bank number, Variation number)
Remark ::	legato-enabled sounds
Voices:	number of voices used by the Tone
Remark #:	same sounds as Tone Set 2
Remark ':	same sound as Tone Set 1
Remark +:	a percussive sound which cannot be played melodically. Use near C4 (note number 60).

CM-64 Sound Map

CM-64 (PCM Sounds)

PC	CC00	Tone	Voices
001	126	Piano 2	1
002	126	Piano 2	1
003	126	Piano 2	1
004	126	Honky-tonk	2
005	126	Piano 1	1
006	126	Piano 2	1
007	126	Piano 2	1
008	126	E.Piano 1	1
009	126	Detuned EP1	2
010	126	E.Piano 2	1
011	126	Steel Gt.	1
012	126	Steel Gt.	1
013	126	12-str.Gt	2
014	126	Funk Gt.	1
015	126	Muted Gt.	1
016	126	Slap Bass 1	1
017	126	Slap Bass 1	1
018	126	Slap Bass 1	1
019	126	Slap Bass 1	1
020	126	Slap Bass 2	1
021	126	Slap Bass 2	1
022	126	Slap Bass 2	1
023	126	Slap Bass 2	1
024	126	Fingered Bs	1
025	126	Fingered Bs	1
026	126	Picked Bass	1
027	126	Picked Bass	1
028	126	Fretless Bs	1
029	126	Acoustic Bs	1
030	126	Choir Aahs	1
031	126	Choir Aahs	1
032	126	Choir Aahs	1
033	126	Choir Aahs	1
034	126	SlowStrings	1
035	126	Strings	1
036	126	SynStrings3	2
037	126	SynStrings3	2
038	126	Organ 1	1
039	126	Organ 1	1
040	126	Organ 1	1
041	126	Organ 2	1
042	126	Organ 1	1
043	126	Organ 1	1
044	126	Organ 2	1
045	126	Organ 2	1
046	126	Organ 2	1
047	126	Trumpet	1
048	126	Trumpet	1
049	126	Trombone	1
050	126	Trombone	1
051	126	Trombone	1
052	126	Trombone	1
053	126	Trombone	1
054	126	Trombone	1
055	126	Alto Sax	1
056	126	Tenor Sax	1
057	126	BaritoneSax	1
058	126	Alto Sax	1
059	126	Brass 1	1
060	126	Brass 1	1
061	126	Brass 2	2
062	126	Brass 2	2
063	126	Brass 1	1
064	126	Orchest.Hit	2

CM-64 (LA Sounds)

PC	CC00	Tone	Voices
001	127	Acou Piano1	1
002	127	Acou Piano2	1
003	127	Acou Piano3	1
004	127	Elec Piano1	1
005	127	Elec Piano2	1
006	127	Elec Piano3	1
007	127	Elec Piano4	1
008	127	Honkytonk	2
009	127	Elec Org 1	1
010	127	Elec Org 2	2
011	127	Elec Org 3	1
012	127	Elec Org 4	1
013	127	Pipe Org 1	2
014	127	Pipe Org 2	2
015	127	Pipe Org 3	2
016	127	Accordion	2
017	127	Harpsi 1	1
018	127	Harpsi 2	2
019	127	Harpsi 3	1
020	127	Clavi 1	1
021	127	Clavi 2	1
022	127	Clavi 3	1
023	127	Celesta 1	1
024	127	Celesta 2	1
025	127	Syn Brass 1	2
026	127	Syn Brass 2	2
027	127	Syn Brass 3	2
028	127	Syn Brass 4	2
029	127	Syn Bass 1	1
030	127	Syn Bass 2	2
031	127	Syn Bass 3	2
032	127	Syn Bass 4	1
033	127	Fantasy	2
034	127	Harmo Pan	2
035	127	Chorale	1
036	127	Glasses	2
037	127	Soundtrack	2
038	127	Atmosphere	2
039	127	Warm Bell	2
040	127	Funny Vox	1
041	127	Echo Bell	2
042	127	Ice Rain	2
043	127	Oboe 2001	2
044	127	Echo Pan	2
045	127	Doctor Solo	2
046	127	School Daze	1
047	127	Bellsinger	1
048	127	Square Wave	2
049	127	Str Sect 1	1
050	127	Str Sect 2	1
051	127	Str Sect 3	1
052	127	Pizzicato	1
053	127	Violin 1	1
054	127	Violin 2	1
055	127	Cello 1	1
056	127	Cello 2	1
057	127	Contrabass	1
058	127	Harp 1	1
059	127	Harp 2	1
060	127	Guitar 1	1
061	127	Guitar 2	1
062	127	Elec Gtr 1	1
063	127	Elec Gtr 2	1
064	127	Sitar	2

CM-64 (LA Sounds)

PC	CC00	Tone		Voices
065	127	Acou Bass 1		1
066	127	Acou Bass 2		1
067	127	Elec Bass 1		1
068	127	Elec Bass 2		1
069	127	Slap Bass 1		1
070	127	Slap Bass 2		1
071	127	Fretless 1		1
072	127	Fretless 2		1
073	127	Flute 1		1
074	127	Flute 2		1
075	127	Piccolo 1		1
076	127	Piccolo 2		2
077	127	Recorder		1
078	127	Pan Pipes		1
079	127	Sax 1		1
080	127	Sax 2		1
081	127	Sax 3		1
082	127	Sax 4		1
083	127	Clarinet 1		1
084	127	Clarinet 2		1
085	127	Oboe		1
086	127	Engl Horn		1
087	127	Bassoon		1
088	127	Harmonica		1
089	127	Trumpet 1		1
090	127	Trumpet 2		1
091	127	Trombone 1		2
092	127	Trombone 2		2
093	127	Fr Horn 1		2
094	127	Fr Horn 2		2
095	127	Tuba		1
096	127	Brs Sect 1		1
097	127	Brs Sect 2		2
098	127	Vibe 1		1
099	127	Vibe 2		1
100	127	Syn Mallet		1
101	127	Windbell		2
102	127	Glock		1
103	127	Tube Bell		1
104	127	Xylophone		1
105	127	Marimba		1
106	127	Koto		1
107	127	Sho		2
108	127	Shakuhachi		2
109	127	Whistle 1		2
110	127	Whistle 2		1
111	127	Bottleblow		2
112	127	Breathpipe		1
113	127	Timpani		1
114	127	Melodic Tom		1
115	127	Deep Snare	+	1
116	127	Elec Perc 1	+	1
117	127	Elec Perc 2	+	1
118	127	Taiko		1
119	127	Taiko Rim		1
120	127	Cymbal		1
121	127	Castanets	+	1
122	127	Triangle	+	1
123	127	Orche Hit		1
124	127	Telephone	+	1
125	127	Bird Tweet	+	1
126	127	OneNote Jam	+	1
127	127	Water Bell		2
128	127	Jungle Tune		2

Rhythm Set List

The rhythm sets of the SC-880 are organized as follows.
The Tone Set 3 has 25 types, the Tone Set 2 has 14 types, and the Tone Set 1 has 10 types.

PC	Tone Set 3		Tone Set 2	Tone Set 1
001	STANDARD 1		STANDARD 1	STANDARD
002	STANDARD 2	#	STANDARD 2	---
003	STANDARD 3	*	---	---
009	ROOM	#	ROOM	ROOM
010	HIP HOP		---	---
011	JUNGLE		---	---
012	TECHNO		---	---
017	POWER		POWER	POWER
025	ELECTRONIC	#	ELECTRONIC	ELECTRONIC
026	TR-808		TR-808/909	TR-808
027	DANCE		DANCE	---
028	CR-78		---	---
029	TR-606		---	---
030	TR-707		---	---
031	TR-909		---	---
033	JAZZ		JAZZ	JAZZ
041	BRUSH		BRUSH	BRUSH
049	ORCHESTRA	#	ORCHESTRA	ORCHESTRA
050	ETHNIC	#	ETHNIC	---
051	KICK & SNARE	#	KICK & SNARE	---
053	ASIA		---	---
054	CYMBAL&CLAPS		---	---
057	SFX		SFX	SFX
058	RHYTHM FX	#	RHYTHM FX	---
059	RHYTHM FX 2		---	---
128	---		---	CM-64/32L

\# : Same as the Tone Set 2 rhythm sets

* : Sounds in the STANDARD 3 rhythm set that have "RND" appended to their name
(such as Kick, Snare, and Hi-Hat) in the list on the next page are sounds which will
change randomly with each note played (these changes affect the timbre and tim-
ing). The purpose of this is to create a more natural sounding performance--even if
all note messages for percussive instruments are sent with absolute precision, sub-
tle fluctuations will be applied so the performance sounds less mechanical.

Note, however, that you may not always be able to obtain the desired effect,
depending on the circumstances.

■ Rhythm Set (Tone Set 3) (1)

* For note number 0–19 and 97–127, refer to p. 145.

Note	PC1 STANDARD 1	PC2 STANDARD 2 #	PC3 STANDARD 3	PC9 ROOM #	PC10 Hip-Hop
22	MC-500 Beep 1	<-	<-	<-	<-
23	MC-500 Beep 2	<-	<-	<-	<-
C1 24	Concert SD	<-	<-	<-	<-
25	Snare Roll	<-	<-	<-	<-
26	Finger Snap 2	Finger Snap	<-	Finger Snap	<-
27	High Q	<-	<-	<-	<-
28	Slap	<-	<-	<-	<-
29	Scratch Push [EXC7]	<-	<-	<-	Scratch Push 2 [EXC7]
30	Scratch Pull [EXC7]	<-	<-	<-	Scratch Pull 2 [EXC7]
31	Sticks	<-	<-	<-	<-
32	Square Click	<-	<-	<-	<-
33	Metronome Click	<-	<-	<-	<-
34	Metronome Bell	<-	<-	<-	<-
35	Standard 1 Kick 2	Standard 2 Kick 2	Standard 3 Kick 2	Room Kick 2	Hip-Hop Kick 2
C2 36	Standard 1 Kick 1	Standard 2 Kick 1	[RND] Kick	Room Kick 1	Hip-Hop Kick 1
37	Side Stick	<-	<-	<-	TR-808 Rim Shot
38	Standard 1 Snare 1	Standard 2 Snare 1	[RND] Snare	Room Snare 1	Rap Snare
39	TR-909 Hand Clap	Hand Clap	[RND] Hand Clap *	Hand Clap	<-
40	Standard 1 Snare 2	Standard 2 Snare 2	Standard 3 Snare 2	Room Snare 2	Hip-Hop Snare 2
41	Low Tom 2 *	<-	<-	Room Low Tom 2 *	TR-909 Low Tom 2
42	Closed Hi-Hat [EXC1]	Closed Hi-Hat [EXC1]	[RND] Closed Hi-Hat [EXC1]	Closed Hi-Hat 3 [EXC1]	Room Closed Hi-Hat [EXC1]
43	Low Tom 1 *	<-	<-	Room Low Tom 1 *	TR-909 Low Tom 1
44	Pedal Hi-Hat [EXC1]	Pedal Hi-Hat [EXC1]	[RND] Pedal Hi-Hat [EXC1]	Pedal Hi-Hat [EXC1]	Pedal Hi-Hat [EXC1]
45	Mid Tom 2 *	<-	<-	Room Mid Tom 2 *	TR-909 Mid Tom 2
46	Open Hi-Hat [EXC1]	Open Hi-Hat [EXC1]	[RND] Open Hi-Hat [EXC1]	Open Hi-Hat 3 [EXC1]	Room Open Hi-Hat [EXC1]
47	Mid Tom 1 *	<-	<-	Room Mid Tom 1 *	TR-909 Mid Tom 1
C3 48	High Tom 2 *	<-	<-	Room High Tom 2 *	TR-909 High Tom 2
49	Crash Cymbal 1	<-	[RND] Crash Cymbal	<-	TR-909 Crash Cymbal
50	High Tom 1 *	<-	<-	Room High Tom 1 *	TR-909 High Tom 1
51	Ride Cymbal 1	<-	[RND] Ride Cymbal 1 *	<-	<-
52	Chinese Cymbal	<-	<-	<-	Reverse Cymbal
53	Ride Bell	<-	[RND] Ride Bell 1	<-	<-
54	Tambourine	<-	<-	<-	Shake Tambourine
55	Splash Cymbal	<-	<-	<-	<-
56	Cowbell	<-	<-	<-	TR-808 Cowbell
57	Crash Cymbal 2	<-	<-	<-	<-
58	Vibra-slap	<-	<-	<-	<-
59	Ride Cymbal 2	<-	[RND] Ride Cymbal 2 *	<-	<-
C4 60	High Bongo	<-	<-	<-	<-
61	Low Bongo	<-	<-	<-	<-
62	Mute High Conga	<-	<-	<-	<-
63	Open High Conga	<-	<-	<-	<-
64	Low Conga	<-	<-	<-	<-
65	High Timbale	<-	<-	<-	<-
66	Low Timbale	<-	<-	<-	<-
67	High Agogo	<-	<-	<-	<-
68	Low Agogo	<-	<-	<-	<-
69	Cabasa	<-	<-	<-	<-
70	Maracas	<-	<-	<-	TR-808 Maracas
71	Short High Whistle [EXC2]	<-	<-	<-	<-
C5 72	Long Low Whistle [EXC2]	<-	<-	<-	<-
73	Short Guiro [EXC3]	<-	<-	<-	<-
74	Long Guiro [EXC3]	<-	<-	<-	CR-78 Guiro [EXC3]
75	Claves	<-	<-	<-	TR-808 Claves
76	High Wood Block	<-	<-	<-	<-
77	Low Wood Block	<-	<-	<-	<-
78	Mute Cuica [EXC4]	<-	<-	<-	High Hoo [EXC4]
79	Open Cuica [EXC4]	<-	<-	<-	Low Hoo [EXC4]
80	Mute Triangle [EXC5]	<-	<-	<-	Mute Triangle
81	Open Triangle [EXC5]	<-	<-	<-	Open Triangle
82	Shaker	<-	<-	<-	TR-626 Shaker
83	Jingle Bell	<-	<-	<-	<-
C6 84	Bell Tree	Bar Chimes	<-	<-	<-
85	Castanets	<-	<-	<-	<-
86	Mute Surdo [EXC6]	<-	<-	<-	<-
87	Open Surdo [EXC6]	<-	<-	<-	<-
88	Applause 2 *	<-	<-	<-	Small Club 1 *
89	---	---	---	---	---
90	---	---	---	---	---
91	---	---	---	---	---
92	---	---	---	---	---
93	---	---	---	---	---
94	---	---	---	---	---
95	---	---	---	---	---
C7 96	---	---	---	---	---

↗ Note Number

PC: Program number (Rhythm Set number)   <- : Same as the percussion sound of "STANDARD1" (PC1).   [2] : Same as the sound of SC-88.
[1] : Same as the sound of SC-55   --- : No sound
* : Tones which are created using two voices   [EXC] : Percussion sounds of the same number will not be heard at the same time.

Appendices

■ Rhythm Set (Tone Set 3) (2)

* For note number 0–19 and 97–127, refer to p. 145.

Note Number	PC 11 JUNGLE	PC 12 TECHNO	PC 17 POWER	PC 25 ELECTRONIC #	PC 26 TR-808
22	<-	<-	<-	<-	<-
23	<-	<-	<-	<-	<-
C1 24	<-	<-	<-	<-	<-
25	<-	<-	<-	<-	<-
26	<-	<-	<-	Finger Snap 2	<-
27	<-	<-	<-	<-	<-
28	<-	<-	<-	<-	<-
29	Scratch Push 2 [EXC7]	Scratch Push 2 [EXC7]	<-	Scratch Push 2 [EXC7]	Scratch Push 2 [EXC7]
30	Scratch Pull 2 [EXC7]	Scratch Pull 2 [EXC7]	<-	Scratch Pull 2 [EXC7]	Scratch Pull 2 [EXC7]
31	<-	<-	<-	<-	<-
32	<-	<-	<-	<-	<-
33	<-	<-	<-	<-	<-
34	<-	<-	<-	<-	<-
35	Jungle Kick 2	Techno Kick 2	Power Kick 2	Electric Kick 2	TR-808 Kick 2
C2 36	Jungle Kick 1	Techno Kick 1	Power Kick 1	Electric Kick 1 *	TR-808 Kick 1
37	<-	TR-808 Rim Shot	<-	<-	TR-808 Rim Shot
38	Jungle Snare 1	Techno Snare 1	Power Snare 1	Electric Snare 1	TR-808 Snare 1
39	Hand Clap 2	TR-707 Hand Clap	Hand Clap	Hand Clap	Hand Clap
40	Jungle Snare 2	Techno Snare 2	Power Snare 2	Electric Snare 2	TR-808 Snare 2
41	TR-909 Low Tom 2	TR-808 Low Tom 2 *	Power Low Tom 2 *	Electric Low Tom 2 *	TR-808 Low Tom 2 *
42	TR-606 Closed Hi-Hat [EXC1]	TR-707 Closed Hi-Hat [EXC1]	<-	Closed Hi-Hat 2 [EXC1]	TR-808 Closed Hi-Hat 2 [EXC1]
43	TR-909 Low Tom 1	TR-808 Low Tom 1 *	Power Low Tom 1 *	Electric Low Tom 1 *	TR-808 Low Tom 1 *
44	Jungle Hi-Hat [EXC1]	CR-78 Closed Hi-Hat [EXC1]	<-	Pedal Hi-Hat [EXC1]	TR-808 Closed Hi-Hat [EXC1]
45	TR-909 Mid Tom 2	TR-808 Mid Tom 2 *	Power Mid Tom 2 *	Electric Mid Tom 2 *	TR-808 Mid Tom 2 *
46	TR-606 Open Hi-Hat [EXC1]	TR-909 Open Hi-Hat [EXC1]	<-	Open Hi-Hat 2 [EXC1]	TR-808 Open Hi-Hat [EXC1]
47	TR-909 Mid Tom 1	TR-808 Mid Tom 1 *	Power Mid Tom 1 *	Electric Mid Tom 1 *	TR-808 Mid Tom 1 *
C3 48	TR-909 High Tom 2	TR-808 High Tom 2 *	Power High Tom 2 *	Electric High Tom 2 *	TR-808 High Tom 2 *
49	TR-808 Crash Cymbal	TR-909 Crash Cymbal	<-	<-	TR-808 Crash Cymbal
50	TR-909 High Tom 1	TR-808 High Tom 1 *	Power High Tom 1 *	Electric High Tom 1 *	TR-808 High Tom 1 *
51	<-	<-	<-	<-	TR-606 Ride Cymbal
52	Reverse Cymbal	Reverse Cymbal	<-	Reverse Cymbal	<-
53	<-	<-	<-	<-	<-
54	Shake Tambourine	Shake Tambourine	<-	<-	CR-78 Tambourine
55	<-	<-	<-	<-	<-
56	TR-808 Cowbell	TR-808 Cowbell	<-	<-	TR-808 Cowbell
57	<-	TR-909 Crash Cymbal	<-	<-	TR-909 Crash Cymbal
58	<-	<-	<-	<-	<-
59	<-	<-	<-	<-	Ride Cymbal 2
C4 60	<-	CR-78 High Bongo	<-	<-	CR-78 High Bongo
61	<-	CR-78 Low Bongo	<-	<-	CR-78 Low Bongo
62	<-	TR-808 High Conga	<-	<-	TR-808 High Conga
63	<-	TR-808 Mute Conga	<-	<-	TR-808 Mute Conga
64	<-	TR-808 Low Conga	<-	<-	TR-808 Low Conga
65	<-	<-	<-	<-	<-
66	<-	<-	<-	<-	<-
67	<-	<-	<-	<-	<-
68	<-	<-	<-	<-	<-
69	<-	<-	<-	<-	<-
70	TR-808 Maracas	TR-808 Maracas	<-	<-	TR-808 Maracas
71	<-	<-	<-	<-	<-
C5 72	<-	<-	<-	<-	<-
73	<-	<-	<-	<-	<-
74	CR-78 Guiro [EXC3]	CR-78 Guiro [EXC3]	<-	<-	CR-78 Guiro [EXC3]
75	TR-808 Claves	TR-808 Claves	<-	<-	TR-808 Claves
76	<-	<-	<-	<-	<-
77	<-	<-	<-	<-	<-
78	High Hoo [EXC4]	High Hoo [EXC4]	<-	<-	High Hoo [EXC4]
79	Low Hoo [EXC4]	Low Hoo [EXC4]	<-	<-	Low Hoo [EXC4]
80	Mute Triangle	Mute Triangle	<-	<-	Mute Triangle
81	Open Triangle	Open Triangle	<-	<-	Open Triangle
82	TR-626 Shaker	TR-626 Shaker	<-	<-	TR-626 Shaker
83	<-	<-	<-	<-	<-
C6 84	<-	<-	<-	<-	<-
85	<-	<-	<-	<-	<-
86	<-	<-	<-	<-	<-
87	<-	<-	<-	<-	<-
88	Small Club 1 *	<-	<-	Small Club 1 *	Small Club 1 *
89	---	---	---	---	---
90	---	---	---	---	---
91	---	---	---	---	---
92	---	---	---	---	---
93	---	---	---	---	---
94	---	---	---	---	---
95	---	---	---	---	---
C7 96	---	---	---	---	---

↗
Note Number

PC: Program number (Rhythm Set number)
[1] : Same as the sound of SC-55
* : Tones which are created using two voices

<- : Same as the percussion sound of "STANDARD1" (PC1).
--- : No sound
[EXC] : Percussion sounds of the same number will not be heard at the same time.

[2] : Same as the sound of SC-88.

■ Rhythm Set (Tone Set 3) (3)

* For note number 0–19 and 97–127, refer to p. 145.

Note Number	PC 27 DANCE	PC 28 CR-78	PC 29 TR-606	PC 30 TR-707
22	<-	<-	<-	<-
23	<-	<-	<-	<-
C1 24	<-	<-	<-	<-
25	<-	<-	<-	<-
26	Finger Snap 2	<-	<-	<-
27	<-	<-	<-	<-
28	<-	<-	<-	<-
29	Scratch Push 2 [EXC7]	Scratch Push 2 [EXC7]	Scratch Push 2 [EXC7]	Scratch Push 2 [EXC7]
30	Scratch Pull 2 [EXC7]	Scratch Pull 2 [EXC7]	Scratch Pull 2 [EXC7]	Scratch Pull 2 [EXC7]
31	<-	<-	<-	<-
32	<-	<-	<-	<-
33	<-	<-	<-	<-
34	<-	<-	<-	<-
35	TR-909 Comp Kick	CR-78 Kick 2	CR-78 Kick 2	TR-707 Kick 2
C2 36	Electric Kick 2	CR-78 Kick 1	TR-606 Kick 1	TR-707 Kick 1
37	<-	CR-78 Rim Shot	CR-78 Rim Shot	TR-707 Rim Shot
38	House Snare	CR-78 Snare 1	TR-606 Snare 1	TR-707 Snare 1
39	<-	TR-707 Hand Clap	TR-707 Hand Clap	TR-707 Hand Clap
40	Dance Snare 2	CR-78 Snare 2	TR-606 Snare 2	TR-707 Snare 2
41	Electric Low Tom 2 *	CR-78 Low Tom 2 *	TR-606 Low Tom 2	TR-707 Low Tom 2 *
42	CR-78 Closed Hi-Hat [EXC1]	CR-78 Closed Hi-Hat [EXC1]	TR-606 Closed Hi-Hat [EXC1]	TR-707 Closed Hi-Hat [EXC1]
43	Electric Low Tom 1 *	CR-78 Low Tom 1 *	TR-606 Low Tom 1	TR-707 Low Tom 1 *
44	TR-808 Closed Hi-Hat 2 [EXC1]	TR-606 Closed Hi-Hat [EXC1]	TR-606 Closed Hi-Hat [EXC1]	TR-707 Closed Hi-Hat [EXC1]
45	Electric Mid Tom 2 *	CR-78 Mid Tom 2 *	TR-606 Mid Tom 2	TR-707 Mid Tom 2 *
46	CR-78 Open Hi-Hat [EXC1]	CR-78 Open Hi-Hat [EXC1]	TR-606 Open Hi-Hat [EXC1]	TR-707 Open Hi-Hat [EXC1]
47	Electric Mid Tom 1 *	CR-78 Mid Tom 1 *	TR-606 Mid Tom 1	TR-707 Mid Tom 1 *
C3 48	Electric High Tom 2 *	CR-78 High Tom 2 *	TR-606 High Tom 2	TR-707 High Tom 2 *
49	TR-808 Crash Cymbal	TR-808 Crash Cymbal	TR-808 Crash Cymbal	TR-909 Crash Cymbal
50	Electric High Tom 1 *	CR-78 High Tom 1 *	TR-606 High Tom 1	TR-707 High Tom 1 *
51	TR-606 Ride Cymbal	TR-606 Ride Cymbal	TR-606 Ride Cymbal	TR-909 Ride Cymbal *
52	Reverse Cymbal	<-	<-	<-
53	<-	<-	<-	<-
54	Shake Tambourine	CR-78 Tambourine	CR-78 Tambourine	Tambourine 2
55	<-	<-	<-	<-
56	TR-808 Cowbell	CR-78 Cowbell	CR-78 Cowbell	TR-808 Cowbell
57	<-	TR-909 Crash Cymbal	TR-909 Crash Cymbal	<-
58	<-	<-	<-	<-
59	<-	Ride Cymbal Edge	Ride Cymbal Edge	Ride Cymbal Edge
C4 60	<-	CR-78 High Bongo	CR-78 High Bongo	<-
61	<-	CR-78 Low Bongo	CR-78 Low Bongo	<-
62	<-	TR-808 High Conga	TR-808 High Conga	<-
63	<-	TR-808 Mute Conga	TR-808 Mute Conga	<-
64	<-	TR-808 Low Conga	TR-808 Low Conga	<-
65	<-	<-	<-	<-
66	<-	<-	<-	<-
67	<-	<-	<-	<-
68	<-	<-	<-	<-
69	<-	<-	<-	<-
70	<-	CR-78 Maracas	CR-78 Maracas	TR-808 Maracas
71	<-	<-	<-	<-
C5 72	<-	<-	<-	<-
73	<-	<-	<-	<-
74	<-	CR-78 Guiro [EXC3]	CR-78 Guiro [EXC3]	<-
75	<-	CR-78 Claves	CR-78 Claves	<-
76	<-	<-	<-	<-
77	<-	<-	<-	<-
78	High Hoo [EXC4]	High Hoo [EXC4]	High Hoo [EXC4]	High Hoo [EXC4]
79	Low Hoo [EXC4]	Low Hoo [EXC4]	Low Hoo [EXC4]	Low Hoo [EXC4]
80	Mute Triangle	CR-78 Metallic Beat 1 [EXC5]	CR-78 Metallic Beat 1 [EXC5]	Mute Triangle
81	Open Triangle	CR-78 Metallic Beat 2 [EXC5]	CR-78 Metallic Beat 2 [EXC5]	Open Triangle
82	TR-626 Shaker	TR-626 Shaker	TR-626 Shaker	TR-626 Shaker
83	<-	<-	<-	<-
C6 84	<-	<-	<-	<-
85	<-	<-	<-	<-
86	<-	<-	<-	<-
87	<-	<-	<-	<-
88	Small Club 1 *	Small Club 1 *	Small Club 1 *	Small Club 1 *
89	---	---	---	---
90	---	---	---	---
91	---	---	---	---
92	---	---	---	---
93	---	---	---	---
94	---	---	---	---
95	---	---	---	---
C7 96	---	---	---	---

↗ Note Number

PC: Program number (Rhythm Set number)
[1] : Same as the sound of SC-55
* : Tones which are created using two voices

<- : Same as the percussion sound of "STANDARD1" (PC1).
--- : No sound
[EXC] : Percussion sounds of the same number will not be heard at the same time.

[2] : Same as the sound of SC-88.

Appendices

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■ Rhythm Set (Tone Set 3) (4)

* For note number 0–19 and 97–127, refer to p. 145.

Note	Oct	PC 31 TR-909		PC 33 JAZZ		PC 41 BRUSH		PC 49 ORCHESTRA #	
22		<-		<-		<-		<-	
23		<-		<-		<-		<-	
24	C1	<-		<-		<-		<-	
25		<-		<-		<-		<-	
26		<-		Finger Snap 2		Finger Snap 2		Finger Snap	
27		<-		<-		<-		Closed Hi-Hat 2	[EXC1]
28		<-		<-		<-		Pedal Hi-Hat	[EXC1]
29		Scratch Push 2	[EXC7]	<-		<-		Open Hi-Hat 2	[EXC1]
30		Scratch Pull 2	[EXC7]	<-		<-		Ride Cymbal 1	
31		<-		<-		<-		<-	
32		<-		<-		<-		<-	
33		<-		<-		<-		<-	
34		<-		<-		<-		<-	
35		TR-909 Kick 2		Jazz Kick 2		Jazz Kick 2		Jazz Kick 1	
36	C2	TR-909 Kick 1	*	Jazz Kick 1		Jazz Kick 1		Concert BD 1	
37		TR-909 Rim		<-		<-		<-	
38		TR-909 Snare 1		Jazz Snare 1		Brush Tap 1		Concert SD	
39		<-		Hand Clap 2		Brush Slap 1		Castanets	
40		TR-909 Snare2		Jazz Snare 2		Brush Swirl 1		Concert SD	
41		TR-909 Low Tom 2		<-		Brush Low Tom 2	*	Timpani F	
42		TR-707 Closed Hi-Hat	[EXC1]	Closed Hi-Hat 2	[EXC1]	Brush Closed Hi-Hat	[EXC1]	Timpani F#	
43		TR-909 Low Tom 1		<-		Brush Low Tom 1	*	Timpani G	
44		TR-707 Closed Hi-Hat	[EXC1]	Pedal Hi-Hat	[EXC1]	Pedal Hi-Hat	[EXC1]	Timpani G#	
45		TR-909 Mid Tom 2		<-		Brush Mid Tom 2	*	Timpani A	
46		TR-909 Open Hi-Hat	[EXC1]	Open Hi-Hat 2	[EXC1]	Brush Open Hi-Hat	[EXC1]	Timpani A#	
47		TR-909 Mid Tom 1		<-		Brush Mid Tom 1	*	Timpani B	
48	C3	TR-909 High Tom 2		<-		Brush High Tom 2	*	Timpani c	
49		TR-909 Crash Cymbal		<-		Brush Crash Cymbal		Timpani c#	
50		TR-909 High Tom 1		<-		Brush High Tom 1	*	Timpani d	
51		TR-909 Ride Cymbal	*	Ride Cymbal Inner		Ride Cymbal Inner		Timpani d#	
52		<-		<-		<-		Timpani e	
53		<-		<-		Brush Ride Bell		Timpani f	
54		Tambourine 2		<-		<-		<-	
55		<-		<-		<-		<-	
56		TR-808 Cowbell		<-		<-		<-	
57		<-		<-		<-		Concert Cymbal 2	
58		<-		<-		<-		<-	
59		Ride Cymbal Edge		Ride Cymbal Edge		Ride Cymbal Edge		Concert Cymbal 1	
60	C4	<-		<-		<-		<-	
61		<-		<-		<-		<-	
62		<-		<-		<-		<-	
63		<-		<-		<-		<-	
64		<-		<-		<-		<-	
65		<-		<-		<-		<-	
66		<-		<-		<-		<-	
67		<-		<-		<-		<-	
68		<-		<-		<-		<-	
69		<-		<-		<-		<-	
70		TR-808 Maracas		<-		<-		<-	
71		<-		<-		<-		<-	
72	C5	<-		<-		<-		<-	
73		<-		<-		<-		<-	
74		CR-78 Guiro	[EXC3]	<-		<-		<-	
75		TR-808 Claves		<-		<-		<-	
76		<-		<-		<-		<-	
77		<-		<-		<-		<-	
78		High Hoo	[EXC4]	<-		<-		<-	
79		Low Hoo	[EXC4]	<-		<-		<-	
80		Mute Triangle		<-		<-		<-	
81		Open Triangle		<-		<-		<-	
82		TR-626 Shaker		<-		<-		<-	
83		<-		<-		<-		<-	
84	C6	<-		<-		<-		<-	
85		<-		<-		<-		<-	
86		<-		<-		<-		<-	
87		<-		<-		<-		<-	
88		<-		Applause	*	Applause	*	Applause	*
89		---		---		---		---	
90		---		---		---		---	
91		---		---		---		---	
92		---		---		---		---	
93		---		---		---		---	
94		---		---		---		---	
95		---		---		---		---	
96	C7	---		---		---		---	

Note Number

PC: Program number (Rhythm Set number)
[1] : Same as the sound of SC-55
* : Tones which are created using two voices

<- : Same as the percussion sound of "STANDARD1" (PC1).
--- : No sound
[EXC] : Percussion sounds of the same number will not be heard at the same time.

[2] : Same as the sound of SC-88

■ Rhythm Set (Tone Set 3) (5)

Note	PC 50 ETHNIC #	PC 51 KICK & SNARE #	PC 53 ASIA	PC 54 CYMBAL&CLAPS
25	Finger Snap	CR-78 Kick 1	Gamelan Gong 1	---
26	Tambourine	CR-78 Kick 2	Gamelan Gong 2	---
27	Castanets	TR-606 Kick	Gamelan Gong 3	---
28	Crash Cymbal 1	TR-707 Kick	Gamelan Gong 4	---
29	Snare Roll	TR-808 Kick 1	Gamelan Gong 5	---
30	Concert SD	TR-909 Kick 1	Gamelan Gong 6	---
31	Concert Cymbal	TR-909 Kick 2 *	Gamelan Gong 7	---
32	Concert BD 1	Hip-Hop Kick 2	Gamelan Gong 8	Reverse Open Hi-Hat
33	Jingle Bell	Hip-Hop Kick 1	Gamelan Gong 9	Reverse Closed Hi-Hat 1
34	Bell Tree	Jungle Kick 2	Gamelan Gong 10	Reverse Closed Hi-Hat 2
35	Bar Chimes	Jungle Kick 1	Gender 1	Jungle Hi-Hat [EXC1]
C2 36	Wadaiko *	Techno Kick 2	Gender 2	[1] Closed Hi-Hat [EXC1]
37	Wadaiko Rim *	Techno Kick 1	Gender 3	[2] Closed Hi-Hat 2 [EXC1]
38	Shime Taiko	Standard 1 Kick 2	Gender 4	[2] Closed Hi-Hat 3 [EXC1]
39	Atarigane	Standard 1 Kick 1	Gender 5	Closed Hi-Hat 4 [EXC1]
40	Hyoushigi	[2] Standard 1 Kick 1	Bonang 1	Closed Hi-Hat [EXC1]
41	Ohkawa	[2] Standard 1 Kick 2	Bonang 2	TR-707 Closed Hi-Hat [EXC1]
42	High Kotsuzumi	[2] Standard 2 Kick 1	Bonang 3	TR-606 Closed Hi-Hat [EXC1]
43	Low Kotsuzumi	[2] Standard 2 Kick 2	Bonang 4	[2] TR-808 Closed Hi-Hat [EXC1]
44	Ban Gu	[1] Kick Drum1	Bonang 5	TR-808 Closed Hi-Hat [EXC1]
45	Big Gong	[1] Kick Drum 2	Rama Cymbal Low	CR-78 Closed Hi-Hat [EXC1]
46	Small Gong	[2] Soft Kick	Rama Cymbal High	[1] Pedal Hi-Hat [EXC1]
47	Bend Gong	[2] Jazz Kick 1	Sagat Open [EXC7]	[2] Pedal Hi-Hat [EXC1]
C3 48	Thai Gong	[2] Jazz Kick 2	Sagat Closed [EXC7]	Pedal Hi-Hat [EXC1]
49	Rama Cymbal	[1] Concert BD 1	Jaws Harp	Half-Open Hi-Hat 1 [EXC1]
50	Gamelan Gong	[2] Room Kick 1	Wadaiko *	Half-Open Hi-Hat 2 [EXC1]
51	Udo Short [EXC1]	[2] Room Kick 2	Wadaiko Rim *	[1] Open Hi Hat [EXC1]
52	Udo Long [EXC1]	[2] Power Kick1	Small Taiko	[2] Open Hi-Hat 2 [EXC1]
53	Udo Slap	[2] Power Kick2	Shimedaiko	[2] Open Hi-Hat 3 [EXC1]
54	Bendir	[2] Electric Kick 2	Atarigane	Open Hi-Hat 2 [EXC1]
55	Req Dum	[2] Electric Kick 1 *	Hyoushigi	TR-909 Open Hi-Hat [EXC1]
56	Req Tik	[1] Electric Kick	Ohkawa	TR-707 Open Hi-Hat [EXC1]
57	Tabla Te	[2] TR-808 Kick	High Kotsuzumi	TR-606 Open Hi-Hat [EXC1]
58	Tabla Na	[2] TR-909 Kick	Low Kotsuzumi	[2] TR-808 Open Hi-Hat [EXC1]
59	Tabla Tun	[2] Dance Kick	Yyoo Dude	TR-808 Open Hi-Hat [EXC1]
C4 60	Tabla Ge	[2] Standard 1 Snare 1	Buk	CR-78 Open Hi-Hat [EXC1]
61	Tabla Ge Hi	[2] Standard 1 Snare 2	Buk Rim	Crash Cymbal 1 [EXC3]
62	Talking Drum *	[2] Standard 2 Snare 1	Gengari p [EXC1]	Crash Cymbal 2 [EXC4]
63	Bend Talking Drum *	[2] Standard 2 Snare 2	Gengari Mute Low [EXC1]	Crash Cymbal 3
64	Caxixi	[1] Tight Snare	Gengari I [EXC2]	Brush Crash Cymbal
65	Djembe	[1] Concert Snare	Gengari Mute High [EXC2]	Hard Crash Cymbal *
66	Djembe Rim	[2] Jazz Snare 1	Gengari Samll	TR-909 Crash Cymbal
67	Timbales Low	[2] Jazz Snare 2	Jang-Gu Che	TR-808 Crash Cymbal
68	Timbales Paila	[2] Room Snare 1	Jang-Gu Kun	Mute Crash Cymbal 1 [EXC3]
69	Timbales High	[2] Room Snare 2	Jang-Gu Rim	Mute Crash Cymbal 2 [EXC4]
70	Cowbell	[2] Power Snare 1	Jing p [EXC3]	Reverse Crash Cymbal 1
71	High Bongo	[2] Power Snare 2	Jing f *[EXC3]	Reverse Crash Cymbal 2
C5 72	Low Bongo	[1] Gated Snare	Jing Mute [EXC3]	Reverse Crash Cymbal 3
73	Mute High Conga	[2] Dance Snare 1	Asian Gong	Reverse TR-909 Crash Cymbal
74	Open High Conga	[2] Dance Snare 2	Big Gong	[1] Splash Cymbal
75	Mute Low Conga	[2] Disco Snare	Small Gong	Splash Cymbal
76	Conga Slap	[2] Electric Snare 2	Pai Ban	[2] Ride Bell
77	Open Low Conga	[2] House Snare *	Ban Gu	[2] Brush Ride Bell
78	Conga Slide *	[1] Electric Snare 1	Tang Gu [EXC4]	[2] Ride Cymbal 1
79	Mute Pandiero	[2] Electric Snare 3 *	Tang Gu Mute [EXC4]	[2] Ride Cymbal 2
80	Open Pandiero	[2] TR-808 Snare 1	Shou Luo *	[2] Brush Ride Cymbal
81	Open Surdo [EXC2]	[2] TR-808 Snare 2 *	Bend Gong	Ride Cymbal Low Inner
82	Mute Surdo [EXC2]	[2] TR-909 Snare 1	Hu Yin Luo Low *	Ride Cymbal Mid Inner
83	Tamborim	[2] TR-909 Snare 2 *	Hu Yin Luo Mid	Ride Cymbal High Inner
C6 84	High Agogo	[2] Brush Tap 1	Hu Yin Luo Mid 2 [EXC5]	Ride Cymbal Low Edge
85	Low Agogo	[2] Brush Tap 2	Hu Yin Luo High [EXC5]	Ride Cymbal Mid Edge
86	Shaker	[2] Brush Slap 1	Hu Yin Luo High 2 [EXC6]	Ride Cymbal High Edge
87	High Whistle [EXC3]	[2] Brush Slap 2	Nao Bo	TR-606 Ride Cymbal
88	Low Whistle [EXC3]	[2] Brush Slap 3	Xiao Bo	TR-808 Ride Cymbal
89	Mute Cuica [EXC4]	[2] Brush Swirl 1	---	Chinese Cymbal
90	Open Cuica [EXC4]	[2] Brush Swirl 2	---	Chinese Cymbal 2
91	Mute Triangle [EXC5]	[2] Brush Long Swirl	---	[1] Hand Clap
92	Open Triangle [EXC5]	Standard 1 Snare 1	---	[2] Hand Clap 2
93	Short Guiro [EXC6]	Standard 1 Snare 2	---	[2] Hand Clap
94	Long Guiro [EXC6]	Standard 1 Snare 3	---	Hand Clap
95	Cabasa Up	Rap Snare	---	Hand Clap 2
C7 96	Cabasa Down	Hip-Hop Snare 2	---	TR-707 Hand Clap
97	Claves	Jungle Snare 1	---	---
98	High Wood Block	Jungle Snare 2	---	---
99	Low Wood Block	Techno Snare 1	---	---

↗
Note Number

PC: Program number (Rhythm Set number)　　<- : Same as the percussion sound of "STANDARD1" (PC1).　　[2] : Same as the sound of SC-88.
[1] : Same as the sound of SC-55　　--- : No sound
* : Tones which are created using two voices　　[EXC] : Percussion sounds of the same number will not be heard at the same time.

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■ Rhythm Set (Tone Set 3) (6)

Note	PC 57 SFX	PC 58 RHYTHM FX #	PC 59 RHYTHM FX 2
21	MC-500 Beep 1	---	---
22	MC-500 Beep 2	---	---
23	Guitar Slide	---	---
C1 24	Guitar Wah	---	---
25	Guitar Slap	---	---
26	Chord Stroke Down	---	---
27	Chord Stroke Up	---	---
28	Biwa FX *	---	---
29	Phonograph Noise	---	---
30	Tape Rewind	---	---
31	Scratch Push 2 [EXC1]	---	---
32	Scratch Pull 2 [EXC1]	---	---
33	Cutting Noise 2 Up	---	---
34	Cutting Noise 2 Down	---	---
35	Distortion Guitar Cutting Noise Up	---	---
C2 36	Distortion Guitar Cutting Noise Down	Reverse Kick 1	Reverse TR-707 Kick 1
37	Bass Slide	Reverse Concert Bass Drum	Reverse TR-909 Kick 1
38	Pick Scrape	Reverse Power Kick1	Reverse Hip-Hop Kick 1
39	High Q	Reverse Electric Kick 1	Reverse Jungle Kick 2
40	Slap	Reverse Snare 1	Reverse Techno Kick 2
41	Scratch Push [EXC7]	Reverse Snare 2	Reverse TR-606 Snare 2
42	Scratch Pull [EXC7]	Reverse Standard 1 Snare 1	Reverse CR-78 Snare 1
43	Sticks	Reverse Tight Snare	Reverse CR-78 Snare 2
44	Square Click	Reverse Dance Snare	Reverse Jungle Snare 2
45	Metronome Click	Reverse 808 Snare	Reverse Techno Snare 2
46	Metronome Bell	Reverse Tom 1	Reverse TR-707 Snare
47	Guitar Fret Noise	Reverse Tom 2	Reverse TR-606 Snare 1
C3 48	Guitar Cutting Noise Up	Reverse Sticks	Reverse TR-909 Snare 1
49	Guitar Cutting Noise Down	Reverse Slap	Reverse Hip-Hop Snare 2
50	String Slap of Double Bass	Reverse Cymbal 1	Reverse Jungle Snare 1
51	Flute Key Click Noise	Reverse Cymbal 2	Reverse House Snare
52	Laughing	Reverse Open Hi-Hat	Reverse Closed Hi-Hat
53	Screaming	Reverse Ride Cymbal	Reverse TR-606 Closed Hi-Hat
54	Punch	Reverse CR-78 Open Hi-Hat	Reverse TR-707 Closed Hi-Hat
55	Heart Beat	Reverse Closed Hi-Hat	Reverse TR-808 Closed Hi-Hat
56	Footsteps 1	Reverse Gong	Reverse Jungle Hi-Hat
57	Footsteps 2	Reverse Bell Tree	Reverse Tambourine 2
58	Applause *	Reverse Guiro	Reverse Shake Tambourine
59	Door Creaking	Reverse Bendir	Reverse TR-808 Open Hi-Hat
C4 60	Door	Reverse Gun Shot	Reverse TR-707 Open Hi-Hat
61	Scratch	Reverse Scratch	Reverse Open Hi-Hat
62	Wind Chimes *	Reverse Laser Gun	Reverse TR-606 Open Hi-Hat
63	Car - Engine	Key Click	Reverse Hu Yin Luo
64	Car - Stop	Techno Thip	Reverse TR-707 Crash Cymbal *
65	Car - Passing	Pop Drop	Voice One
66	Car - Crash *	Woody Slap	Reverse Voice One
67	Siren	Distortion Kick *	Voice Two
68	Train	Syn. Drops	Reverse Voice Two
69	Jetplane *	Reverse Hi Q	Voice Three
70	Helicopter	Pipe	Reverse Voice Three
71	Starship *	Ice Block	Voice Tah
C5 72	Gun Shot	Digital Tambourine *	Reverse Voice Tah
73	Machine Gun	Alias	Voice Ou
74	Laser Gun	Modulated Bell	Voice Au
75	Explosion *	Spark	Voice Whey
76	Dog	Metallic Percussion	Frog Vpoce *
77	Horse-Gallop	Velocity Noise FX	Reverse Yyoo Dude
78	Birds *	Stereo Noise Clap *	Douby
79	Rain	Swish	Reverse Douby
80	Thunder	Slappy *	Baert High
81	Wind	Voice Ou	Baert Low
82	Seashore	Voice Au	Bounce
83	Stream *	Hoo	Reverse bounce
C6 84	Bubble *	Tape Stop 1 *	Distortion Knock
85	Kitty	Tape Stop 2 *	Guitar Slide
86	Bird 2	Missile *	Sub Marine
87	Growl	Space Birds	Noise Attack
88	<-	Flying Monster	Space Worms
89	Telephone 1	---	Emergency! *
90	Telephone 2	---	Calculating... *
91	Small Club 1 *	---	Saw LFO Saw
92	Small Club 2 *	---	---
93	Applause Wave *	---	---
94	Eruption	---	---
95	Big Shot *	---	---
C7 96	Percussion Bang *	---	---

Note Number

PC: Program number (Rhythm Set number)
[1] : Same as the sound of SC-55
* : Tones which are created using two voices
<- : Same as the percussion sound of "STANDARD1" (PC1).
--- : No sound
[EXC] : Percussion sounds of the same number will not be heard at the same time.
[2] : Same as the sound of SC-88.

■ Rhythm Set (Tone Set 3) (7)

Notes 0-19 and 97-127 are as follows.

Program numbers:

PC 1 STANDARD 1	PC 10 Hip-Hop
PC 2 STANDARD 2	PC 11 JUNGLE
PC 3 STANDARD 3	PC 12 TECHNO
PC 9 ROOM	PC 25 ELECTRONIC
PC 17 POWER	PC 26 TR-808
	PC 27 DANCE
	PC 28 CR-78
	PC 29 TR-606
	PC 30 TR-707
	PC 31 TR-909
PC 33 JAZZ	PC 41 BRUSH
PC 49 ORCHESTRA	PC 51 KICK & SNARE

Note	PC 1 / 2 / 3 / 9 / 17	PC 10-31	PC 33 JAZZ	PC 41 BRUSH	PC 49 ORCHESTRA	PC 51 KICK & SNARE
C-1 0	[2] Standard 1 Kick 1	[2] Electric Kick 2	<-		<-	---
1	[2] Standard 1 Kick 2	[2] Electric Kick 1 *	<-		<-	---
2	[2] Standard 2 Kick 1	CR-78 Kick 1	<-		<-	---
3	[2] Standard 2 Kick 2	CR-78 Kick 2	<-		<-	---
4	[1] Kick Drum 1	TR-606 Kick1	<-		<-	---
5	[1] Kick Drum 2	TR-707 Kick 1	<-		<-	---
6	[2] Jazz Kick 1	[1] TR-808 Kick	<-		<-	---
7	[2] Jazz Kick 2	[2] TR-808 Kick	<-		<-	---
8	[2] Room Kick 1	TR-808 Kick 2	<-		<-	---
9	[2] Room Kick 2	[2] TR-909 Kick	<-		<-	---
10	[2] Power Kick 1	[2] Dance Kick	<-		<-	---
11	[2] Power Kick 2	Hip-Hop Kick 2	<-		<-	---
C0 12	[2] Electric Kick 2	TR-909 Kick 1 *	<-		<-	---
13	[2] Electric Kick 1 *	Hip-Hop Kick 3	<-		<-	---
14	[2] TR-808 Kick	Jungle Kick 1	<-		<-	---
15	[2] TR-909 Kick	Techno Kick 1	<-		<-	---
16	[2] Dance Kick	Bounce Kick	<-		<-	---
17	Voice One	<-	<-		<-	---
18	Voice Two	<-	<-		<-	---
19	Voice Three	<-	<-		<-	---
⋮						

Note	PC 1 / 2 / 3 / 9 / 17	PC 10-31	PC 33 JAZZ	PC 41 BRUSH	PC 49 ORCHESTRA	PC 51 KICK & SNARE
97	[2] Standard 1 Snare1	Techno Hit	---		Applause 2 *	Jungle Snare 1
98	[2] Standard 1 Snare 2	Philly Hit *	---		Small Club 1 *	Jungle Snare 2
99	[2] Standard 2 Snare 1	Impact Hit *	---		[1] Timpani D#	Techno Snare 1
100	[2] Standard 2 Snare 2	Lo-Fi Rave *		[2] Brush Tap 1	[1] Timpani E	Techno Snare 2
101	[1] Snare Drum 2	Bam Hit		[2] Brush Tap 2	[1] Timpani F	House Snare 2
102	Standard 1 Snare 1	Bim Hit		[2] Brush Slap 1	[1] Timpani F#	CR-78 Snare 1
103	Standard 1 Snare 2	Tape Rewind		[2] Brush Slap 2	[1] Timpani G	CR-78 Snare 2
104	Standard 1 Snare 3	Phonograph Noise		[2] Brush Slap 3	[1] Timpani G#	TR-606 Snare 1
105	[2] Jazz Snare 1	[2] Power Snare 1		[2] Brush Swirl 1	[1] Timpani A	TR-606 Snare 2
106	[2] Jazz Snare 2	[2] Dance Snare 1		[2] Brush Swirl 2	[1] Timpani A#	TR-707 Snare 1
107	[2] Room Snare 1	[2] Dance Snare 2		[2] Brush Long Swirl	[1] Timpani B	TR-707 Snare 2
C8 108	[2] Room Snare 2	[2] Disco Snare		[2] Jazz Snare 1	[1] Timpani c	Standard 3 Snare 2
109	[2] Power Snare 1	[2] Electric Snare 2		[2] Jazz Snare 2	[1] Timpani c#	TR-808 Snare 2
110	[2] Power Snare 2	[1] Electric Snare		[2] Standard 1 Snare1	[1] Timpani d	TR-909 Snare 1
111	[1] Gated Snare	[2] Electric Snare 3 *		[2] Standard 1 Snare2	[1] Timpani d#	TR-909 Snare 2
112	[2] Dance Snare 1	TR-606 Snare 2		[2] Standard 2 Snare1	[1] Timpani e	---
113	[2] Dance Snare 2	TR-707 Snare 1		[2] Standard 2 Snare2	[1] Timpani f	---
114	[2] Disco Snare	[2] TR-808 Snare 2		[1] Snare Drum 2	---	---
115	[2] Electric Snare 2	[2] TR-808 Snare 1 *		Standard 1 Snare 1	---	---
116	[1] Electric Snare	TR-808 Snare 2		Standard 1 Snare 2	---	---
117	[2] Electric Snare 3 *	[2] TR-909 Snare 1		Standard 1 Snare 3	---	---
118	TR-707 Snare 1	[2] TR-909 Snare 2 *		[2] Room Snare 1	---	---
119	[2] TR-808 Snare 1	TR-909 Snare 1		[2] Room Snare 2	---	---
C9 120	[2] TR-808 Snare 2 *	TR-909 Snare 2		[2] Power Snare 1	---	---
121	[2] TR-909 Snare 1	Rap Snare		[2] Power Snare 2	---	---
122	[2] TR-909 Snare 2 *	Jungle Snare		[2] Gated Snare	---	---
123	Rap Snare	House Snare 1		[2] Dance Snare 1	---	---
124	Jungle Snare 1	[2] House Snare *		[2] Dance Snare 2	---	---
125	House Snare 1	House Snare 2		[2] Disco Snare	---	---
126	[2] House Snare *	Voice Tah		[2] Electric Snare 2	---	---
127	House Snare 2	[2] Slappy *		[2] Electric Snare 3 *	---	---

↗ Note Number

PC: Program number (Rhythm Set number)   <- : Same as the percussion sound of "STANDARD1" (PC1).   [2] : Same as the sound of SC-88.
[1] : Same as the sound of SC-55   --- : No sound
* : Tones which are created using two voices   [EXC] : Percussion sounds of the same number will not be heard at the same time.

Appendices

■ Rhythm Set (Tone Set 2) (1)

Note Number	PC 1 STANDARD 1		PC 2 STANDARD 2		PC 9 ROOM		PC 17 POWER		PC 25 ELECTRONIC	
25	Snare Roll		<-		<-		<-		<-	
26	Finger Snap		<-		<-		<-		<-	
27	High Q		<-		<-		<-		<-	
28	Slap		<-		<-		<-		<-	
29	Scratch Push	[EXC7]	<-		<-		<-		Scratch Push2	[EXC7]
30	Scratch Pull	[EXC7]	<-		<-		<-		Scratch Pull2	[EXC7]
31	Sticks		<-		<-		<-		<-	
32	Square Click		<-		<-		<-		<-	
33	Metronome Click		<-		<-		<-		<-	
34	Metronome Bell		<-		<-		<-		<-	
35	Standard 1 Kick 2		Standard 2 Kick 2		Room Kick 2		Power Kick 2		Electric Kick 2	
C2 36	Standard 1 Kick 1		Standard 2 Kick 1		Room Kick 1		Power Kick 1		Electric Kick 1	
37	Side Stick		<-		<-		<-		<-	
38	Standard 1 Snare 1		Standard 2 Snare 1		Room Snare 1		Power Snare 1		Electric Snare 1	
39	Hand Clap		<-		<-		<-		<-	
40	Standard 1 Snare 2		Standard 2 Snare 2		Room Snare 2		Power Snare 2		Electric Snare 2	
41	Low Tom2	*	<-		Room Low Tom2	*	Power Low Tom2	*	Electric Low Tom2	*
42	Closed Hi-hat1	[EXC1]	Closed Hi-hat2	[EXC1]	Closed Hi-hat3	[EXC1]	Closed Hi-hat3	[EXC1]	Closed Hi-hat2	[EXC1]
43	Low Tom1	*	<-		Room Low Tom1	*	Power Low Tom1	*	Electric Low Tom1	*
44	Pedal Hi-hat	[EXC1]	<-		<-		<-		<-	
45	Mid Tom2	*	<-		Room Mid Tom2	*	Power Mid Tom2	*	Electric Mid Tom2	*
46	Open Hi-hat1	[EXC1]	Open Hi-hat2	[EXC1]	Open Hi-hat3	[EXC1]	Open Hi-hat3	[EXC1]	Open Hi-hat2	[EXC1]
47	Mid Tom1	*	<-		Room Mid Tom1	*	Power Mid Tom1	*	Electric Mid Tom1	*
C3 48	High Tom2	*	<-		Room Hi Tom2	*	Power Hi Tom2	*	Electric Hi Tom2	*
49	Crash Cymbal1		<-		<-		<-		<-	
50	High Tom1	*	<-		Room Hi Tom1	*	Power Hi Tom1	*	Electric Hi Tom1	*
51	Ride Cymbal1		<-		<-		<-		<-	
52	Chinese Cymbal		<-		<-		<-		Reverse Cymbal	
53	Ride Bell		<-		<-		<-		<-	
54	Tambourine		<-		<-		<-		<-	
55	Splash Cymbal		<-		<-		<-		<-	
56	Cowbell		<-		<-		<-		<-	
57	Crash Cymbal2		<-		<-		<-		<-	
58	Vibra-slap		<-		<-		<-		<-	
59	Ride Cymbal2		<-		<-		<-		<-	
C4 60	High Bongo		<-		<-		<-		<-	
61	Low Bongo		<-		<-		<-		<-	
62	Mute High Conga		<-		<-		<-		<-	
63	Open High Conga		<-		<-		<-		<-	
64	Low Conga		<-		<-		<-		<-	
65	High Timbale		<-		<-		<-		<-	
66	Low Timbale		<-		<-		<-		<-	
67	High Agogo		<-		<-		<-		<-	
68	Low Agogo		<-		<-		<-		<-	
69	Cabasa		<-		<-		<-		<-	
70	Maracas		<-		<-		<-		<-	
71	Short Hi Whistle	[EXC2]	<-		<-		<-		<-	
C5 72	Long Low Whistle	[EXC2]	<-		<-		<-		<-	
73	Short Guiro	[EXC3]	<-		<-		<-		<-	
74	Long Guiro	[EXC3]	<-		<-		<-		<-	
75	Claves		<-		<-		<-		<-	
76	High Wood Block		<-		<-		<-		<-	
77	Low Wood Block		<-		<-		<-		<-	
78	Mute Cuica	[EXC4]	<-		<-		<-		<-	
79	Open Cuica	[EXC4]	<-		<-		<-		<-	
80	Mute Triangle	[EXC5]	<-		<-		<-		<-	
81	Open Triangle	[EXC5]	<-		<-		<-		<-	
82	Shaker		<-		<-		<-		<-	
83	Jingle Bell		<-		<-		<-		<-	
C6 84	Bell Tree		Bar Chimes		<-		<-		<-	
85	Castanets		<-		<-		<-		<-	
86	Mute Surdo	[EXC6]	<-		<-		<-		<-	
87	Open Surdo	[EXC6]	<-		<-		<-		<-	
88	---		---		---		---		---	
89	---		---		---		---		---	
90	---		---		---		---		---	
91	---		---		---		---		---	
92	---		---		---		---		---	
93	---		---		---		---		---	
94	---		---		---		---		---	
95	---		---		---		---		---	
C7 96	---		---		---		---		---	
97	---		---		---		---		---	
98	---		---		---		---		---	
99	---		---		---		---		---	

↗ Note Number

PC: Program number (Rhythm Set number)   <- : Same as the percussion sound of "STANDARD1" (PC1).   --- : No sound
* : Tones which are created using two voices   [EXC] : Percussion sounds of the same number will not be heard at the same time.

■ Rhythm Set (Tone Set 2) (2)

Note Number	PC 26 TR-808/909		PC 27 DANCE		PC 33 JAZZ		PC 41 BRUSH		PC 49 ORCHESTRA	
25	<-		<-		<-		<-		<-	
26	<-		<-		<-		<-		<-	
27	<-		<-		<-		<-		Closed Hi-hat2	[EXC1]
28	<-		<-		<-		<-		Pedal Hi-hat	[EXC1]
29	Scratch Push2	[EXC7]	Scratch Push2	[EXC7]	<-		<-		Open Hi-hat2	[EXC1]
30	Scratch Pull2	[EXC7]	Scratch Pull2	[EXC7]	<-		<-		Ride Cymbal1	
31	<-		<-		<-		<-		<-	
32	<-		<-		<-		<-		<-	
33	<-		<-		<-		<-		<-	
34	<-		<-		<-		<-		<-	
35	<-		<-		<-		<-		<-	
C2 36	909 Bass Drum		Dance Kick		Jazz Kick 2		Jazz Kick 2		Jazz Kick 1	
37	808 Bass Drum		Electric Kick 2		Jazz Kick 1		Jazz Kick 1		Concert BD1	
38	808 Rim Shot		<-		<-		<-		<-	
39	808 Snare 1		Dance Snare 1		Jazz Snare 1		Brush Tap1		Concert SD	
40	<-		<-		Hand Clap2		Brush Slap1		Castanets	
41	909 Snare 1		Dance Snare 2		Jazz Snare 2		Brush Swirl1		Concert SD	
42	808 Low Tom2 *		Electric Low Tom2 *				Brush Low Tom2 *		Timpani F	
43	808 CHH	[EXC1]	CR-78 CHH	[EXC1]	Closed Hi-hat2	[EXC1]	Brush Closed Hi-hat	[EXC1]	Timpani F#	
44	808 Low Tom1 *		Electric Low Tom1 *		<-		Brush Low Tom1 *		Timpani G	
45	808 CHH	[EXC1]	808 CHH	[EXC1]	<-		<-		Timpani G#	
46	808 Mid Tom2 *		Electric Mid Tom2 *		<-		Brush Mid Tom2 *		Timpani A	
47	808 OHH	[EXC1]	CR-78 OHH	[EXC1]	Open Hi-hat2	[EXC1]	Brush Open Hi-hat	[EXC1]	Timpani A#	
48	808 Mid Tom1 *		Electric Mid Tom1 *		<-		Brush Mid Tom1 *		Timpani B	
C3 49	808 Hi Tom2 *		Electric High Tom2 *		<-		Brush Hi Tom2 *		Timpani c	
50	808 Cymbal		<-		<-		Brush Crash Cymbal		Timpani c#	
51	808 Hi Tom1		Electric High Tom1 *		<-		Brush Hi Tom1 *		Timpani d	
52	<-		<-		<-		Brush Ride Cymbal		Timpani d#	
53	<-		Reverse Cymbal		<-		<-		Timpani e	
54	<-		<-		<-		Brush Ride Bell		Timpani f	
55	<-		<-		<-		<-		<-	
56	<-		<-		<-		<-		<-	
57	808 Cowbell		<-		<-		<-		<-	
58	<-		<-		<-		<-		Concert Cymbal2	
59	<-		<-		<-		<-		<-	
60	<-		<-		<-		<-		Concert Cymbal1	
C4 61	<-		<-		<-		<-		<-	
62	<-		<-		<-		<-		<-	
63	808 High Conga		<-		<-		<-		<-	
64	808 Mid Conga		<-		<-		<-		<-	
65	808 Low Conga		<-		<-		<-		<-	
66	<-		<-		<-		<-		<-	
67	<-		<-		<-		<-		<-	
68	<-		<-		<-		<-		<-	
69	<-		<-		<-		<-		<-	
70	<-		<-		<-		<-		<-	
71	808 Maracas		<-		<-		<-		<-	
72	<-		<-		<-		<-		<-	
C5 73	<-		<-		<-		<-		<-	
74	<-		<-		<-		<-		<-	
75	<-		<-		<-		<-		<-	
76	808 Claves		<-		<-		<-		<-	
77	<-		<-		<-		<-		<-	
78	<-		<-		<-		<-		<-	
79	<-		High Hoo	[EXC4]	<-		<-		<-	
80	<-		Low Hoo	[EXC4]	<-		<-		<-	
81	<-		Electric Mute Triangle	[EXC5]	<-		<-		<-	
82	<-		Electric Open Triangle	[EXC5]	<-		<-		<-	
83	<-		<-		<-		<-		<-	
C6 84	<-		<-		<-		<-		<-	
85	<-		<-		<-		<-		<-	
86	<-		<-		<-		<-		<-	
87	<-		<-		<-		<-		<-	
88	---		---		---		---		Applause *	
89	---		---		---		---		---	
90	---		---		---		---		---	
91	---		---		---		---		---	
92	---		---		---		---		---	
93	---		---		---		---		---	
94	---		---		---		---		---	
95	---		---		---		---		---	
C7 96	---		---		---		---		---	
97	---		---		---		---		---	
98	---		---		---		---		---	
99	---		---		---		---		---	

↗ Note Number

PC: Program number (Rhythm Set number)   <- : Same as the percussion sound of "STANDARD1" (PC1).   --- : No sound
* : Tones which are created using two voices   [EXC] : Percussion sounds of the same number will not be heard at the same time.

Appendices

■ Rhythm Set (Tone Set 2) (3)

Note	PC 50 ETHNIC	PC 51 KICK&SNARE	PC 57 SFX	PC 58 RHYTHM FX
25	Finger Snap	---	---	---
26	Tambourine	---	---	---
27	Castanets	---	---	---
28	Crash Cymbal1	---	---	---
29	Snare Roll	---	---	---
30	Concert Snare Drum	---	---	---
31	Concert Cymbal	---	Scratch Push2 [EXC1]	---
32	Concert BD1	---	Scratch Pull2 [EXC1]	---
33	Jingle Bell	---	Cutting Noise 2 Up	---
34	Bell Tree	---	Cutting Noise 2 Down	---
35	Bar Chimes	---	Distortion Guitar Cutting Noise Up	---
C2 36	Wadaiko *	---	Distortion Guitar Cutting Noise Down	Reverse Kick 1
37	Wadaiko Rim *	---	Bass Slide	Reverse Concert BD 1
38	Shime Taiko	---	Pick Scrape	Reverse Power Kick 1
39	Atarigane	---	High Q	Reverse Electric Kick 1
40	Hyoushigi	Standard 1 Kick 1	Slap	Reverse Snare 1
41	Ohkawa	Standard 1 Kick 2	Scratch Push [EXC7]	Reverse Snare 2
42	High Kotsuzumi	Standard 2 Kick 1	Scratch Pull [EXC7]	Reverse Standard set1 Snare 1
43	Low Kotsuzumi	Standard 2 Kick 2	Sticks	Reverse Tight Snare
44	Ban Gu	Kick 1	Square Click	Reverse Dance Snare
45	Big Gong	Kick 2	Metronome Click	Reverse 808 Snare
46	Small Gong	Soft Kick	Metronome Bell	Reverse Tom1
47	Bend Gong	Jazz Kick 1	Guitar Fret Noise	Reverse Tom2
C3 48	Thai Gong	Jazz Kick 2	Guitar Cutting Noise Up	Reverse Sticks
49	Rama Cymbal	Concert BD	Guitar Cutting Noise Down	Reverse Slap
50	Gamelan Gong	Room Kick 1	String Slap of Double Bass	Reverse Cymbal1
51	Udo Short [EXC1]	Room Kick 2	Fl.Key Click	Reverse Cymbal2
52	Udo Long [EXC1]	Power Kick 1	Laughing	Reverse Open Hi-hat
53	Udo Slap	Power Kick 2	Scream	Reverse Ride Cymbal
54	Bendir	Electric Kick 2	Punch	Reverse CR-78 OHH
55	Req Dum	Electric Kick 1 *	Heart Beat	Reverse Closed Hi-hat
56	Req Tik	Electric Kick	Footsteps1	Reverse Gong
57	Tabla Te	808 Bass Drum	Footsteps2	Reverse Bell Tree
58	Tabla Na	909 Bass Drum	Applause *	Reverse Guiro
59	Tabla Tun	Dance Kick	Door Creaking	Reverse Bendir
C4 60	Tabla Ge	Standard 1 Snare 1	Door	Reverse Gun Shot
61	Tabla Ge Hi	Standard 1 Snare 2	Scratch	Reverse Scratch
62	Talking Drum *	Standard 2 Snare 1	Wind Chimes *	Reverse Laser
63	Bend Talking Drum *	Standard 2 Snare 2	Car-Engine	Key Click
64	Caxixi	Tight Snare	Car-Stop	Tekno Thip
65	Djembe	Concert Snare	Car-Pass	Pop Drop
66	Djembe Rim	Jazz Snare 1	Car-Crash *	Woody Slap
67	Timbales Low	Jazz Snare 2	Siren	Distortion Kick *
68	Timbales Paila	Room Snare 1	Train	Syn Drop
69	Timbales High	Room Snare 2	Jetplane *	Reverse High Q
70	Cowbell	Power Snare 1	Helicopter	Pipe
71	Hi Bongo	Power Snare 2	Starship *	Ice Block
C5 72	Low Bongo	Gated Snare	Gun Shot	Digital Tambourine *
73	Mute Hi Conga	Dance Snare 1	Machine Gun	Alias
74	Open Hi Conga	Dance Snare 2	Lasergun	Modulated Bell
75	Mute Low Conga	Disco Snare	Explosion *	Spark
76	Conga Slap	Electric Snare2	Dog	Metalic Percussion
77	Open Low Conga	House Snare *	Horse-Gallop	Velocity Noise FX
78	Conga Slide *	Electric Snare 1	Birds *	Stereo Noise Clap *
79	Mute Pandiero	Electric Snare 3 *	Rain	Swish
80	Open Pandiero	808 Snare 1	Thunder	Slappy *
81	Open Surdo [EXC2]	808 Snare 2 *	Wind	Voice Ou
82	Mute Surdo [EXC2]	909 Snare 1	Seashore	Voice Au
83	Tamborim	909 Snare 2 *	Stream *	Hoo
C6 84	High Agogo	Brush Tap1	Bubble *	Tape Stop1 *
85	Low Agogo	Brush Tap2	Kitty	Tape Stop2 *
86	Shaker	Brush Slap1	Bird2	Missile *
87	High Whistle [EXC3]	Brush Slap2	Growl	Space Bird
88	Low Whistle [EXC3]	Brush Slap3	Applause2 *	Flying Monster
89	Mute Cuica [EXC4]	Brush Swirl1	Telephone1	---
90	Open Cuica [EXC4]	Brush Swirl2	Telephone2	---
91	Mute Triangle [EXC5]	Brush Long Swirl	---	---
92	Open Triangle [EXC5]	---	---	---
93	Short Guiro [EXC6]	---	---	---
94	Long Guiro [EXC6]	---	---	---
95	Cabasa Up	---	---	---
96	Cabasa Down	---	---	---
C7 96	Claves	---	---	---
98	High Wood Block	---	---	---
99	Low Wood Block	---	---	---

↗
Note Number

PC: Program number (Rhythm Set number)   <- : Same as the percussion sound of "STANDARD1" (PC1).   --- : No sound
* : Tones which are created using two voices   [EXC] : Percussion sounds of the same number will not be heard at the same time.

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■ Rhythm Set (Tone Set 1) (1)

Note Number	PC 1/PC 33 STANDARD/JAZZ	PC 9 ROOM	PC 17 POWER	PC 25 ELECTRONIC	PC 26 TR-808	PC 41 BRUSH	PC 49 ORCHESTRA
25	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---
27	High Q	<-	<-	<-	<-	<-	Closed Hi-hat [EXC1]
28	Slap	<-	<-	<-	<-	<-	Pedal Hi-hat [EXC1]
29	Scratch Push	<-	<-	<-	<-	<-	Open Hi-hat [EXC1]
30	Scratch Pull	<-	<-	<-	<-	<-	Ride Cymbal1
31	Sticks	<-	<-	<-	<-	<-	<-
32	Square Click	<-	<-	<-	<-	<-	<-
33	Metronome Click	<-	<-	<-	<-	<-	<-
34	Metronome Bell	<-	<-	<-	<-	<-	<-
35	Kick Drum2 / Jazz BD2	<-	<-	<-	<-	Jazz BD2	Concert BD2
C2 36	Kick Drum1 / Jazz BD1	<-	MONDO Kick	Elec BD	808 Bass Drum	Jazz BD1	Concert BD1
37	Side Stick	<-	<-	<-	808 Rim Shot	<-	<-
38	Snare Drum1	<-	Gated SD	Elec SD	808 Snare Drum	Brush Tap	Concert SD
39	Hand Clap	<-	<-	<-	<-	Brush Slap	Castanets
40	Snare Drum2	<-	<-	Gated SD	<-	Brush Swirl	Concert SD
41	Low Tom2	Room Low Tom2	Room Low Tom2	Elec Low Tom2	808 Low Tom2	<-	Timpani F
42	Closed Hi-hat [EXC1]	<-	<-	<-	808 CHH [EXC1]	<-	Timpani F#
43	Low Tom1	Room Low Tom1	Room Low Tom1	Elec Low Tom1	808 Low Tom1	<-	Timpani G
44	Pedal Hi-hat [EXC1]	<-	<-	<-	808 CHH [EXC1]	<-	Timpani G#
45	Mid Tom2	Room Mid Tom2	Room Mid Tom2	Elec Mid Tom2	808 Mid Tom2	<-	Timpani A
46	Open Hi-hat [EXC1]	<-	<-	<-	808 OHH [EXC1]	<-	Timpani A#
47	Mid Tom1	Room Mid Tom1	Room Mid Tom1	Elec Mid Tom1	808 Mid Tom1	<-	Timpani B
C3 48	High Tom2	Room Hi Tom2	Room Hi Tom2	Elec Hi Tom2	808 Hi Tom2	<-	Timpani c
49	Crash Cymbal1	<-	<-	<-	808 Cymbal	<-	Timpani c#
50	High Tom1	Room Hi Tom1	Room Hi Tom1	Elec Hi Tom1	808 Hi Tom1	<-	Timpani d
51	Ride Cymbal1	<-	<-	<-	<-	<-	Timpani d#
52	Chinese Cymbal	<-	<-	Reverse Cymbal	<-	<-	Timpani e
53	Ride Bell	<-	<-	<-	<-	<-	Timpani f
54	Tambourine	<-	<-	<-	<-	<-	<-
55	Splash Cymbal	<-	<-	<-	<-	<-	<-
56	Cowbell	<-	<-	<-	808 Cowbell	<-	<-
57	Crash Cymbal2	<-	<-	<-	<-	<-	Concert Cymbal2
58	Vibra-slap	<-	<-	<-	<-	<-	<-
59	Ride Cymbal2	<-	<-	<-	<-	<-	Concert Cymbal1
C4 60	High Bongo	<-	<-	<-	<-	<-	<-
61	Low Bongo	<-	<-	<-	<-	<-	<-
62	Mute High Conga	<-	<-	<-	808 High Conga	<-	<-
63	Open High Conga	<-	<-	<-	808 Mid Conga	<-	<-
64	Low Conga	<-	<-	<-	808 Low Conga	<-	<-
65	High Timbale	<-	<-	<-	<-	<-	<-
66	Low Timbale	<-	<-	<-	<-	<-	<-
67	High Agogo	<-	<-	<-	<-	<-	<-
68	Low Agogo	<-	<-	<-	<-	<-	<-
69	Cabasa	<-	<-	<-	<-	<-	<-
70	Maracas	<-	<-	<-	808 Maracas	<-	<-
71	Short Hi Whistle [EXC2]	<-	<-	<-	<-	<-	<-
C5 72	Long Low Whistle [EXC2]	<-	<-	<-	<-	<-	<-
73	Short Guiro	<-	<-	<-	<-	<-	<-
74	Long Guiro	<-	<-	<-	<-	<-	<-
75	Claves	<-	<-	<-	808 Claves	<-	<-
76	High Wood Block	<-	<-	<-	<-	<-	<-
77	Low Wood Block	<-	<-	<-	<-	<-	<-
78	Mute Cuica [EXC4]	<-	<-	<-	<-	<-	<-
79	Open Cuica [EXC4]	<-	<-	<-	<-	<-	<-
80	Mute Triangle [EXC5]	<-	<-	<-	<-	<-	<-
81	Open Triangle [EXC5]	<-	<-	<-	<-	<-	<-
82	Shaker	<-	<-	<-	<-	<-	<-
83	Jingle Bell	<-	<-	<-	<-	<-	<-
C6 84	Bell Tree	<-	<-	<-	<-	<-	<-
85	Castanets	<-	<-	<-	<-	<-	<-
86	Mute Surdo [EXC6]	<-	<-	<-	<-	<-	<-
87	Open Surdo [EXC6]	<-	<-	<-	<-	<-	<-
88	---	---	---	---	---	---	Applause *
89	---	---	---	---	---	---	---
90	---	---	---	---	---	---	---
91	---	---	---	---	---	---	---
92	---	---	---	---	---	---	---
93	---	---	---	---	---	---	---
94	---	---	---	---	---	---	---
95	---	---	---	---	---	---	---
C7 96	---	---	---	---	---	---	---
97	---	---	---	---	---	---	---
98	---	---	---	---	---	---	---
99	---	---	---	---	---	---	---

↗ Note Number

PC: Program number (Rhythm Set number)
* : Tones which are created using two voices

<- : Same as the percussion sound of "STANDARD1" (PC1).
[EXC] : Percussion sounds of the same number will not be heard at the same time.

--- : No sound

Appendices

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■ Rhythm Set (Tone Set 1) (2)

Note Number	PC 57 SFX		PC 128 CM-64/32L	
35	---		CM Kick Drum	
C2 36	---		CM Kick Drum	
37	---		CM Rim Shot	
38	---		CM Snare Drum	
39	High Q		CM Hand Clap	
40	Slap		CM Electronic Snare Drum	
41	Scratch Push	[EXC7]	CM Acoustic Low Tom	
42	Scratch Pull	[EXC7]	CM Closed High Hat	[EXC1]
43	Sticks		CM Acoustic Low Tom	
44	Square Click		CM Open Hi-Hat2	
45	Metronome Click		CM Acoustic Middle Tom	
46	Metronome Bell		CM Open Hi-Hat1	[EXC1]
47	Guitar Fret Noise		CM M.TomAcoustic Middle Tom	
C3 48	Guitar cutting noise/up		CM Acoustic High Tom	
49	Guitar cutting noise/down		CM Crash Cymbal	
50	String slap of double bass		CM Acoustic High Tom	
51	Fl.Key Click		CM Ride Cymbal	
52	Laughing		---	
53	Scream		---	
54	Punch		CM Tambourine	
55	Heart Beat		---	
56	Footsteps1		CM Cowbell	
57	Footsteps2		---	
58	Applause	*	---	
59	Door Creaking		---	
C4 60	Door		CM High Bongo	
61	Scratch		CM Low Bongo	
62	Wind Chimes	*	CM Mute High Conga	
63	Car-Engine		CM High Conga	
64	Car-Stop		CM Low Conga	
65	Car-Pass		CM High Timbale	
66	Car-Crash	*	CM Low Timbale	
67	Siren		CM High Agogo	
68	Train		CM Low Agogo	
69	Jetplane	*	CM Cabasa	
70	Helicopter		CM Maracas	
71	Starship	*	CM Short Whistle	
72	Gun Shot		CM Long Whistle	
C5 73	Machine Gun		CM Vibrato Slap	
74	Lasergun		---	
75	Explosion	*	CM Claves	
76	Dog		Laughing	
77	Horse-Gallop		Scream	
78	Birds	*	Punch	
79	Rain	*	Heart Beat	
80	Thunder		Footsteps1	
81	Wind		Footsteps2	
82	Seashore		Applause	*
83	Stream	*	Creaking	
C6 84	Bubble	*	Door	
85	---		Scratch	
86	---		Wind Chimes	*
87	---		Car-Engine	
88	---		Car-Stop	
89	---		Car-Pass	
90	---		Car-Crash	*
91	---		Siren	
92	---		Train	
93	---		Jetplane	*
94	---		Helicopter	
95	---		Starship	*
C7 96	---		Gun Shot	
97	---		Machine Gun	
98	---		Lasergun	
99	---		Explosion	*
100	---		Dog	
101	---		Horse-Gallop	
102	---		Birds	*
103	---		Rain	*
104	---		Thunder	
105	---		Wind	
106	---		SeaShore	
107	---		Stream	*
C8 108	---		Bubble	*

↗ Note Number

PC: Program number (Rhythm Set number)   <- : Same as the percussion sound of "STANDARD1" (PC1).   --- : No sound
* : Tones which are created using two voices   [EXC] : Percussion sounds of the same number will not be heard at the same time.

<Example of effect types and effect parameters>

Parameter	Setting Value	Value (H)	MSB/LSB (H)
P-01: Stereo-EQ			**01 00**
LOW-MID1-MID2-HI-OUT			
[LOW]			
Low Frequency	**200Hz/400Hz**	00/01	03

- The "MSB/LSB" column shows the following ** portion of the Exclusive message. (Hexadecimal notation) (p. 186, 187)

  For Effect Type (Data section)
  F0 41 dev 42 12 40 03 00 ** ** sum F7
  For Effect Parameter (LSB part of address)
  F0 41 dev 42 12 40 03 ** data sum F7
  (dev: device ID, sum: checksum)

- Parameters that have a "+" in front of their name can be modified by Effect Control 1 (Src1). (p.51)

- Parameters that have a "#" in front of their name can be modified by Effect Control 2 (Src2). (p.51)

- Values shown in boldface in the "Setting Value" column are the default value of the parameter.

- The correspondence between setting values and hexadecimal values for items in the Value column indicated with "*" is shown in "Effect Parameter Value Conversion Table" (p. 164).

*1: Pre Delay Time	*6: Rate 1	*11: LPF
*2: Delay Time 1	*7: Rate 2	*12: Manual
*3: Delay Time 2	*8: HF Damp	*13: Azimuth
*4: Delay Time 3	*9: Cutoff Freq	*14: Accl
*5: Delay Time 4	*10: EQ Freq	

Parameter	Setting Value	Value (H)	MSB/LSB (H)
P-00: Thru			**00 00**

● Effects that modify the tone color (filter type)

Parameter	Setting Value	Value (H)	MSB/LSB (H)
P-01: Stereo-EQ			**01 00**
LOW-MID1-MID2-HI-OUT			
[LOW]			
Low Frequency	**200Hz/400Hz**	00/01	03
Low Gain	-12–**+5**–+12	34–4C	04
[MID1]			
Mid1 Freq.	200Hz–**1.6kHz**–6.3kHz	*10	07
Mid1 Q	**0.5**/1.0/2.0/4.0/9.0	00/01/02/03/04	08
Mid1 Gain	-12–**+8**–+12	34–4C	09

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[MID2]			
Mid2 Freq.	200Hz–**1kHz**–6.3kHz	*10	0A
Mid2 Q	**0.5**/1.0/2.0/4.0/9.0	00/01/02/03/04	0B
Mid2 Gain	-12–**8**–+12	34–4C	0C
[HI]			
High Frequency	4kHz/**8kHz**	00/01	05
High Gain	-12–**+12**	34–4C	06
[OUT]			
+ Output Level	0–127	00–7F	16

Parameter	Setting Value	Value (H)	MSB/LSB (H)
P-02: Spectrum			**01 01**
W (1-2-3-4-5-6-7-8)-OUT			
[W]			
Band Width	0.5/**1.0**/2.0/4.0/9.0	00/01/02/03/04	0B
[1]			
Band 1	-12–**-4**–+12	34–4C	03
[2]			
Band 2	-12–**+1**–+12	34–4C	04
[3]			
Band 3	-12–**+3**–+12	34–4C	05
[4]			
Band 4	-12–**+6**–+12	34–4C	06
[5]			
Band 5	-12–**+2**–+12	34–4C	07
[6]			
Band 6	-12–**-1**–+12	34–4C	08
[7]			
Band 7	-12–**-4**–+12	34–4C	09
[8]			
Band 8	-12–**-5**–+12	34–4C	0A
[OUT]			
+ Pan	L63–**0**–R63	00–7F	15
# Level	0–127	00–7F	16

Parameter	Setting Value	Value (H)	MSB/LSB (H)
P-03: Enhancer			**01 02**
ENHANCER-OUTPUT			
[ENHANCER]			
+ Sensitivity	0–**64**–127	00–7F	03
# Mix Level	0–127	00–7F	04
[OUTPUT]			
Low Gain	-12–**+3**–+12	34–4C	13
High Gain	-12–**0**–+12	34–4C	14
Output Level	0–127	00–7F	16

Parameter	Setting Value	Value (H)	MSB/LSB (H)
P-04: Humanizer			**01 03**
DRIVE-VOWEL-OUTPUT			
[DRIVE]			
Drive	0–**48**–127	00–7F	03
Drive Switch	Off/**On**	00/01	04
[VOWEL]			
+ Vowel	**a**/i/u/e/o	00/01/02/03/04	05
Accel	0–15	*14	06

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[OUTPUT]			
L Gain	-12–0–+12	34–4C	13
H Gain	-12–0–+12	34–4C	14
Output Pan	L63–0–R63	00–7F	15
# Output Level	0–127	00–7F	16

● Effects that distort the sound (distortion type)

Parameter	Setting Value	Value (H)	MSB/LSB (H)
P-05: Overdrive		**01**	**10**
OVERDRIVE-AMP-OUTPUT			
[OVERDRIVE]			
+ Drive	0–48–127	00–7F	03
[AMP]			
Amp Type	Small/**Built-In**/Double Stack/ Triple Stack	00/01/02/03	04
Amp Switch	Off/**On**	00/01	05
[OUTPUT]			
L Gain	-12–0–+12	34–4C	13
H Gain	-12–0–+12	34–4C	14
# Output Pan	L63–0–R63	00–7F	15
Output Level	0–96–127	00–7F	16

Parameter	Setting Value	Value (H)	MSB/LSB (H)
P-06: Distortion		**01**	**11**
DISTORTION-AMP-OUTPUT			
[DISTORTION]			
+ Drive	0–76–127	00–7F	03
[AMP]			
Amp Type	Small/Built-In/Double Stack/ **Triple Stack**	00/01/02/03	04
Amp Switch	Off/**On**	00/01	05
[OUTPUT]			
L Gain	-12–0 - +12	34–4C	13
H Gain	-12–**8**–+12	34–4C	14
# Output Pan	L63–0–R63	00–7F	15
Output Level	0–**84**–127	00–7F	16

● Effects that modulate the sound (modulation type)

Parameter	Setting Value	Value (H)	MSB/LSB (H)
P-07: Phaser		**01**	**20**
PHASER-OUTPUT			
[PHASER]			
+ Manual	100Hz–**620Hz**–8.0kHz	*12	03
# Rate	0.05–**0.85**–10.0	*6	04
Depth	0–64–127	00–7F	05
Resonance	0–16–127	00–7F	06
[OUTPUT]			
Mix Level	0–127	00–7F	07
L Gain	-12–0–+12	34–4C	13
H Gain	-12–0–+12	34–4C	14
Output Level	0–**104**–127	00–7F	16

Parameter	Setting Value	Value (H)	MSB/LSB (H)
P-08: Auto Wah		**01**	**21**
WAH-MODULATION-OUTPUT			
[WAH]			
FilType	LPF/**BPF**	00/01	03
Sens	0–127	00–7F	04
+ Manual	0–**68**–127	00–7F	05
Peak	0–**62**–127	00–7F	06
[MODULATION]			
# Rate	0.05Hz–**2.05Hz**–10.0Hz	*6	07
Depth	0–**72**–127	00–7F	08
Polarity	Down/**Up**	00/01	09
[OUTPUT]			
L Gain	-12–0–+12	34–4C	13
H Gain	-12–0–+12	34–4C	14
Output Pan	L63–0–R63	00–7F	15
Output Level	0–**96**–127	00–7F	16

Parameter	Setting Value	Value (H)	MSB/LSB (H)
P-09: Rotary		**01**	**22**
LOW-HIGH-SP-OUTPUT			
[LOW]			
Slow Rate	0.05Hz–**0.35Hz**–10.0Hz	*6	03
Fast Rate	0.05Hz–**6.40Hz**–10.0Hz	*6	04
Accel	0–**3**–15	*14	05
Level	0–127	00–7F	06
[HIGH]			
Slow Rate	0.05Hz–**0.90Hz**–10.0Hz	*6	07
Fast Rate	0.05Hz–**7.50Hz**–10.0Hz	*6	08
Accel	0–**11**–15	*14	09
Level	0–**64**–127	00–7F	0A
[SP]			
Separation	0–**96**–127	00–7F	0B
+ Speed	**Slow**/Fast	00/7F	0D
[OUTPUT]			
Low Gain	-12–0–+12	34–4C	13
Hi Gain	-12–0–+12	34–4C	14
# Output Level	0–**127**	00–7F	16

Parameter	Setting Value	Value (H)	MSB/LSB (H)
P-10: Stereo Flanger		**01**	**23**
FIL-FLANGR-OUTPUT			
[FIL]			
Pre Filter Type	**Off**/LPF/HPF	00/01/02	03
Cutoff Freq.	250Hz–8kHz	*9	04
[FLANGR]			
PreDly	0m–**1.6m**–100m	*1	05
Depth	0–**24**–127	00–7F	07
+ Rate	0.05–**0.60**–10.0	*6	06
Phase	0–**180**	00–5A	09
# Feedback Level	-98%–+**80%**–+98%	0F–71	08
[OUTPUT]			
Bal	Dry100, Effect 0- **Dry100, Effect100**–Dry 0, Effect100	00–7F	12
L Gain	-12–0–+12	34–4C	13
H Gain	-12–0–+12	34–4C	14
Output Level	0–**104**–127	00–7F	16

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Parameter	Setting Value	Value (H)	MSB/LSB (H)

P-11: Step Flanger   01 24
MOD-STEP FLANGER-OUT
[MOD]

Parameter	Setting Value	Value (H)	MSB/LSB (H)
PreDelay Time	0msec–1.0msec–100msec	*1	03
Rate	0.05Hz–0.30Hz–10.0Hz	*6	04
Depth	0–95–127	00–7F	05

[STEP FLANGER]

+ Feedback Level	-98%–+30%–+98%	0F–71	06
Phase	0–180	00–5A	07
# Step Rate	0.05Hz–2.75Hz–10.0Hz	*6	08

[OUT]

Bal	Dry100, Effect 0- Dry100, Effect100–Dry 0, Effect100	00–7F	12
L Gain	-12–0–+12	34–4C	13
H Gain	-12–0–+12	34–4C	14
Output Level	0–96–127	00–7F	16

P-12: Tremolo   01 25
TREMOLO-OUTPUT
[TREMOLO]

Modulation Wave	∿/⊓⊔/∿/⋏⋏/⋏⋏	00/01/02/03/04	03
+ Modulation Rate	0.05–3.05–10.0	*6	04
# Modulation Depth	0–96–127	00–7F	05

[OUTPUT]

Low Gain	-12–0–+12	34–4C	13
High Gain	-12–0–+12	34–4C	14
Output Level	0–127	00–7F	16

P-13: Auto Pan   01 26
AUTO PAN-OUTPUT
[AUTO PAN]

Modulation Wave	∿/⊓⊔/∿/⋏⋏/⋏⋏	00/01/02/03/04	03
+ Modulation Rate	0.05–3.05–10.0	*6	04
# Modulation Depth	0–96–127	00–7F	05

[OUTPUT]

Low Gain	-12–0–+12	34–4C	13
High Gain	-12–0–+12	34–4C	14
Output Level	0–127	00–7F	16

● Effects that affect the level (compressor type)

Parameter	Value (Dec.)	Value (Hex.)	MSB/LSB(H)

P-14: Compressor   01 30
COMPRESSOR-OUTPUT
[COMPRESSOR]

Attack	0–72–127	00–7F	03
Sustain	0–100–127	00–7F	04
Post Gain	0/+6/+12/+18	00/01/02/03	05

[OUTPUT]

L Gain	-12–0–+12	34–4C	13
H Gain	-12–0–+12	34–4C	14
+ Output Pan	L63–0–R63	00–7F	15
# Output Level	0–104–127	00–7F	16

Parameter	Setting Value	Value (H)	MSB/LSB (H)

P-15: Limiter   01 31
LIMITER-OUTPUT
[LIMITER]

Threshold Level	0–85–127	00–7F	03
Comp.Ratio	1/1.5,1/2,1/4,1/100	00/01/02/03	04
Release	0–16–127	00–7F	05
PostG	0/+6/+12/+18	00/01/02/03	06

[OUTPUT]

L Gain	-12–0–+12	34–4C	13
H Gain	-12–0–+12	34–4C	14
+ Output Pan	L63–0–R63	00–7F	15
# Output Level	0–127	00–7F	16

● Effects that broaden the sound (chorus type)

Parameter	Setting Value	Value (H)	MSB/LSB (H)

P-16: Hexa Chorus   01 40
DLY-HEXA CHO-OUTPUT
[DLY]

Pre Delay Time	0msec–2.4msec–100msec	*1	03
Pre Delay Deviation	0–5–20	00–14	06

[HEXA CHO]

+ Rate	0.05–0.45–10.0	*6	04
Depth	0–127	00–7F	05
Depth Deviation	-20–+2–+20	2C–54	07
Pan Deviation	0–16–20	00–14	08

[OUTPUT]

# Bal	Dry100, Effect 0–Dry100, Effect100–Dry 0, Effect100	00–7F	12
L Gain	-12–0–+12	34–4C	13
H Gain	-12–0–+12	34–4C	14
Output Level	0–112–127	00–7F	16

P-17: Tremolo Chorus   01 41
CHORUS-TREMOLO-OUTPUT
[CHORUS]

PreDelay Time	0msec–1.6msec–100msec	*1	03
Chorus Rate	0.05Hz–0.45Hz–10.0Hz	*6	04
Chorus Depth	0–40–127	00–7F	05

[TREMOLO]

Tremolo Phase	0–80–180	00–5A	06
+ Tremolo Rate	0.05Hz–3.05Hz–10.0Hz	*6	07
TremoloSeparation	0–96–127	00–7F	08

[OUTPUT]

# Bal	Dry100, Effect 0–Dry 0, Effect100	00–7F	12
L Gain	-12–0–+12	34–4C	13
H Gain	-12–0–+12	34–4C	14
Output Level	0–127	00–7F	16

Appendices

Parameter	Setting Value	Value (H)	MSB/LSB (H)

P-18: Stereo Chorus 01 42

FIL-CHORUS-OUTPUT

[FII]

Parameter	Setting Value	Value (H)	MSB/LSB (H)
Pre Filter Type	Off/LPF/HPF	00/01/02	03
Cutoff Frequency	250Hz–8kHz	*9	04

[CHORUS]

Pre Delay Time	0sec–1.0msec–100msec	*1	05
+ Rate	0.05Hz–0.45Hz–10.0Hz	*6	06
Depth	0–111–127	00–7F	07
Phase	0–180	00–5A	09

[OUTPUT]

# Bal	Dry 0, Effect100–Dry100, Effect100–Dry100, Effect 0	00–7F	12
L Gain	-12–0–+12	34–4C	13
H Gain	-12–0–+12	34–4C	14
Output Level	0–104–127	00–7F	16

P-19: Space D 01 43

SPACE D-OUTPUT

[SPACE D]

PreDelay Time	0msec–3.2msec–100msec	*1	03
+ Rate	0.05Hz–0.45Hz–10.0Hz	*6	04
Depth	0–127	00–7F	05
Phase	0–180	00–5A	06

[OUTPUT]

# Bal	Dry100, Effect 0–Dry100, Effect100–Dry 0, Effect100	00–7F	12
L Gain	-12–0–+12	34–4C	13
H Gain	-12–0–+12	34–4C	14
Output Level	0–96–127	00–7F	16

P-20: 3D Chorus 01 44

3D CHORUS-OUTPUT

[3D CHORUS]

PreDelay Time	0msec–1.0msec–100msec	*1	03
+ Rate	0.05–0.45–10.0	*6	04
Depth	0–72–127	00–7F	05
Output Mode	Speaker/Phones	00/01	11

[OUTPUT]

# Bal	Dry100, Effect 0–Dry100, Effect100–Dry 0, Effect100	00–7F	12
L Gain	-12–0–+12	34–4C	13
H Gain	-12–0–+12	34–4C	14
Output Level	0–80–127	00–7F	16

● Effects that reverberate the sound (delay/reverb type)

Parameter	Setting Value	Value (H)	MSB/LSB (H)

P-21: Stereo Delay 01 50

DELAY-FB-OUTPUT

[DELAY]

TimeL	0m–150m–500m	*4	03
TimeR	0m–300m–500m	*4	04
Phase L	Norm/Invert	00/01	07

Parameter	Setting Value	Value (H)	MSB/LSB (H)
Phase R	Norm/Invert	00/01	08

[FB]

+ Feedback Level	-98%–+48%–+98%	0F–71	05
Feedback Mode	Norm/Cross	00/01	06
HF Damp	315Hz–8kHz/Bypass	*8	0A

[OUTPUT]

# Bal	Dry100, Effect 0–Dry100, Effect 74–Dry 0, Effect100	00–7F	12
L Gain	-12–0–+12	34–4C	13
H Gain	-12–0–+12	34–4C	14
Output Level	0–127	00–7F	16

P-22: Modulation Delay 01 51

TIME-FB-MOD-OUTPUT

[TIME]

Delay Time L	0msec–40msec–500msec	*4	03
Delay Time R	0msec–220msec–500msec	*4	04

[FB]

Feedback Level	-98%–+48%–+98%	0F–71	05
Feedback Mode	Norm/Cross	00/01	06
HF Damp	315Hz–8kHz/Bypass	*8	0A

[MOD]

+ Modulation Rate	0.05–0.65–10.0	*6	07
Modulation Depth	0–21–127	00–7F	08
Modulation Phase	0–180	00–5A	09

[OUTPUT]

# Bal	Dry100, Effect 0–Dry100, Effect 61–Dry 0, Effect100	00–7F	12
L Gain	-12–0–+12	34–4C	13
H Gain	-12–0–+12	34–4C	14
Output Level	0–127	00–7F	16

P-23: 3 Tap Delay 01 52

TIME-LEVEL-FB-OUTPUT

[TIME]

DelayTimeCenter	200ms–300ms–990ms/1sec	*2	03
DelayTime Left	200ms–990ms/1sec	*2	04
DelayTime Right	200ms–235ms–990ms/1sec	*2	05

[LEVEL]

Delay LevelCenter	0–127	00–7F	07
Delay Level Left	0–127	00–7F	08
Delay Level Right	0–127	00–7F	09

[FB]

+ Feedback Level	-98%–+32%–+98%	0F–71	06
HF Damp	315Hz–8kHz/Bypass	*8	0A

[OUTPUT]

# Bal	Dry100, Effect 0–Dry100, Effect 74–Dry 0. Effect100	00–7F	12
L Gain	-12–0–+12	34–4C	13
H Gain	-12–0–+12	34–4C	14
Output Level	0–127	00–7F	16

Parameter	Setting Value	Value (H)	MSB/LSB (H)
P-24: 4 Tap Delay		**01**	**53**
TIME-LEVEL-FB-OUTPUT			
[TIME]			
Time 1	200m-**500m**-990m/1sec	*2	03
Time 2	200m-**300m**-990m/1sec	*2	04
Time 3	200m-**400m**-990m/1sec	*2	05
Time 4	200m-**990m**/1sec	*2	06
[LEVEL]			
Level 1	0-127	00-7F	07
Level 2	0-127	00-7F	08
Level 3	0-127	00-7F	09
Level 4	0-127	00-7F	0A
[FB]			
+ Feedback Level	-98%-**+32%**-+98%	0F-71	0B
HF Damp	315Hz-8kHz/**Bypass**	*8	0C
[OUTPUT]			
# Bal	Dry100, Effect 0-**Dry100**, Effect 74-Dry 0, Effect100	00-7F	12
L Gain	-12-**0**-+12	34-4C	13
H Gain	-12-**0**-+12	34-4C	14
Output Level	0-127	00-7F	16

Parameter	Setting Value	Value (H)	MSB/LSB (H)
P-25: Time Ctrl Delay		**01**	**54**
TC DLY-FB-OUTPUT			
[TC DLY]			
+ Delay Time	200msec-**500msec**-990msec/1sec	*3	03
Acceleration	0-**10**-15	*14	04
Effect Pan	L63-**0**-R63	00-7F	07
[FB]			
# Feedback level	-98%-**+32%**-+98%	0F-71	05
HF Damp	315Hz-8kHz/**Bypass**	*8	06
[OUTPUT			
Bal	Dry100, Effect 0-**Dry100**, Effect 74-Dry 0, Effect100	00-7F	12
L Gain	-12-**0**-+12	34-4C	13
H Gain	-12-**0**-+12	34-4C	14
Output Level	0-**127**	00-7F	16

Parameter	Setting Value	Value (H)	MSB/LSB (H)
P-26: Reverb		**01**	**55**
REVERB-OUTPUT			
[REVERB]			
Type	Room1/2/Stage1/2/Hall1/2	00/01/02/03/04/05	03
+ Time	0-**120**-127	00-7F	05
PreDelay Time	0msec-**74msec**-100msec	*1	04
HF Damp	315Hz-**6.3kHz**-8kHz/Bypass	*8	06
[OUTPUT]			
# Bal	Dry100, Effect 0-**Dry100**, Effect100-Dry 0, Effect100	00-7F	12
L Gain	-12-**0**-+12	34-4C	13
H Gain	-12-**0**-+12	34-4C	14
Output Level	0-127	00-7F	16

Parameter	Setting Value	Value (H)	MSB/LSB (H)
P-27: Gate Reverb		**01**	**56**
GATE REVERB-OUTPUT			
[GATE REERB]			
Reverb Type	**Norm**/Reverse/Sweep1/2	00/01/02/03	03
PreDelay Time	0msec-**0.5msec**-100msec	*1	04
Gate Time	5msec-**65msec**-500msec	00-63	05
[OUTPUT]			
+ Bal	Dry100, Effect 0-**Dry100**, Effect 65-Dry 0, Effect100	00-7F	12
L Gain	-12-**0**-+12	34-4C	13
H Gain	-12-**3**-+12	34-4C	14
# Output Level	0-**112**-127	00-7F	16

Parameter	Setting Value	Value (H)	MSB/LSB (H)
P-28: 3D Delay		**01**	**57**
TIME-LEVEL-FB-MODE-OUT			
[TIME]			
DelayTimeCenter	0ms-**300ms**-500ms	*4	03
DelayTime Left	0ms-**200ms**-500ms	*4	04
DelayTime Right	0ms-**240ms**-500ms	*4	05
[LEVEL]			
Delay LevelCenter	0-**40**-127	00-7F	07
Delay Level Left	0-**64**-127	00-7F	08
Delay Level Right	0-**64**-127	00-7F	09
[FB]			
+ Feedback Level	-98%-**+32%**-+98%	0F-71	06
HF Damp	315Hz-8kHz/**Bypass**	*8	0A
[MODE]			
Output Mode	**Speaker**/Phones	00/01	11
[OUT]			
# Bal	Dry100, Effect 0-**Dry100**, Effect 74-Dry 0, Effect100	00-7F	12
L Gain	-12-**0**-+12	34-4C	13
H Gain	-12-**0**-+12	34-4C	14
Output Level	0-**127**	00-7F	16

● Effects that modify the pitch (pitch/shift type)

Parameter	Setting Value	Value (H)	MSB/LSB (H)
P-29:2 Pitch Shifter		**01**	**60**
PITCH-DLY-PAN-BAL-OUT			
[PITCH]			
+ Coarse 1	-24-**+7**-+12	28-4C	03
# Coarse 2	-24-**-5**-+12	28-4C	07
Fine1	-100-**-4**-+100	0E-72	04
Fine2	-100-**+4**-+100	0E-72	08
[DLY]			
PreDelay Time 1	**0ms**-100ms	*1	05
PreDelay Time 2	**0ms**-100ms	*1	09
Pitch Shifter Mode	1-**3**-5	00-04	0B
[PAN]			
Effect OutputPan1	L63-**0**-R63	00-7F	06
Effect OutputPan2	L63-**0**-R63	00-7F	0A
[BAL]			
Level Balance	A> 0B-**A=B**-A 0<B	00-7F	0C

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[OUT]			
Bal	Dry100, Effect 0- **Dry100**, **Effect 74**-Dry 0, Effect100	00-7F	12
L Gain	-12-**0**-+12	34-4C	13
H Gain	-12-**0**-+12	34-4C	14
Output Level	0-**95**-127	00-7F	16

P-30:Fb Pitch Shifter 01 61
PITCH-DLY-FB-PAN-OUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[PITCH]			
+ Coarse Pitch	-24-**+7**-+12	28-4C	03
Fine Pitch	-100-**0**-+100	0E-72	04
[DLY]			
Pre Delay Time	0msec-**45msec**-100msec	*1	06
Pitch Shift Mode	1-**3**-5	00-04	07
[FB]			
# Feedback Level	-98%-**+40%**-+98%	0F-71	05
[PAN]			
Effect Output Pan	L63-**0**-R63	00-7F	08
[OUT]			
Bal	Dry100, Effect 0-**Dry100**, **Effect100**-Dry 0, Effect100	00-7F	12
L Gain	-12-**0**-+12	34-4C	13
H Gain	-12-**-6**-+12	34-4C	14
Output Level	0-**127**	00-7F	16

● Others

Parameter	Setting Value	Value (H)	MSB/LSB (H)

P-31: 3D Auto 01 70
ROTATION-OUTPUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
Azimuth	180/L168-**0**-R168	*13	03
+ Speed	0.05Hz-**1.30Hz**-10.0Hz	*6	04
Clockwise	-/**+**	00/01	05
# Turn	Off/**On**	00/01	06
[OUTPUT]			
Output Mode	**Speaker**/Phones	00/01	11
Output Level	0-**127**	00-7F	16

P-32: 3D Manual 01 71
AZIMUTH-OUTPUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[AZIMUTH]			
+ Azimuth	180/L168-**0**-R168	*13	03
[OUTPUT]			
Output Mode	**Speaker**/Phones	00/01	11
# Output Level	0-**127**	00-7F	16

P-33:Lo-Fi 1 01 72
LOFI-OUTPUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[LOFI]			
Pre Filter Type	1-**2**-6	00-05	03
Lo-Fi Type	1-**6**-9	00-08	04
Post Filter Type	1-**2**-6	00-05	05
[OUTPUT]			
+ Bal	Dry100, Effect 0-**Dry 0**, **Effect100**	00-7F	12

Parameter	Setting Value	Value (H)	MSB/LSB (H)
L Gain	-12-**0**-+12	34-4C	13
H Gain	-12-**0**-+12	34-4C	14
# Pan	L63-**0**-R63	00-7F	15
Level	0-**127**	00-7F	16

P-34: Lo-Fi 2 01 73
LOFI-RD-WP-D-HM-MS-OUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[LOFI]			
Lo-Fi Type	1-**2**-6	00-05	03
Filter Type	**Off**/LPF/HPF	00/01/02	04
Cutoff Freq.	250Hz-**630Hz**-8kHz	*9	05
[RD]			
+ Radio Detune	**0**-127	00-7F	06
Radio Noise Level	0-**64**-127	00-7F	07
[WP]			
White/Pink Sel	White/**Pink**	00/01	08
W/P LPF	250Hz-6.3kHz/**Bypass**	*11	09
W/P Noise Level	**0**-127	00-7F	0A
[D]			
Disc Noise Type	**LP**/EP/SP/RND	00/01/02/03	0B
Disc NoiseLPF	250Hz-6.3kHz/**Bypass**	*11	0C
Disc Noise Level	**0**-127	00-7F	0D
[HM]			
Hum Noise Type	**50Hz**/60Hz	00/01	0E
Hum Noise LPF	250Hz-6.3kHz/**Bypass**	*11	0F
Hum Noise Level	**0**-127	00-7F	10
[MS]			
Mono/Stereo Sw	Mono/**Stereo**	00-01	11
Output Pan(Mono)	L63-**0**-R63	00-7F	15
[OUT]			
# Bal	Dry100, Effect 0-**Dry 0**, **Effect100**	00-7F	12
L Gain	-12-**0**-+12	34-4C	13
H Gain	-12-**0**-+12	34-4C	14
Output Level	0-**127**	00-7F	16

● Effects that connect two types of effect in series (series 2)

Parameter	Setting Value	Value (H)	MSB/LSB (H)

P-35: OD → Chorus 02 00
OD-CHORUS-OUTPUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[OD]			
Drive	0-**48**-127	00-7F	03
+ Pan	L63-**0**-R63	00-7F	04
Amp Type	Small/**Built-in**/Double Stack/ Triple Stack	00/01/02/03	05
Amp Switch	Off/**On**	00/01	06
[CHORUS]			
Pre Delay Time	0msec-**1.0msec**-100msec	*1	08
Rate	0.05-**0.45**-10.0	*6	09
Depth	0-**72**-127	00-7F	0A
# Bal	Dry100, Chorus 0-**Dry100**, **Chorus100**-Dry 0, Chorus100	00-7F	0C

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[OUTPUT]			
Low Gain	-12–0–+12	34–4C	13
High Gain	-12–0–+12	34–4C	14
Output Level	0–**80**–127	00–7F	16

P-36: OD → Flanger　　　02 01
OD-FLANGER-OUTPUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[OD]			
Drive	0–**48**–127	00–7F	03
+ Pan	L63–**0**–R63	00–7F	04
Amp Type	Small/**Built-in**/Double Stack/ Triple Stack	00/01/02/03	05
Amp Switch	Off/**On**	00/01	06
[FLANGER]			
PreDly	0m–**1.6m**–100m	*1	08
Rate	0.05–**0.60**–10.0	*6	09
Depth	0–**40**–127	00–7F	0A
Fb	-98%–**+80%**–+98%	0F–71	0B
# Bal	Dry100, Flnger 0–**Dry100, 0 Flnger** 49–Dry 0, Flnger100	00–7F	0C
[OUTPUT]			
Low Gain	-12–0–+12	34–4C	13
High Gain	-12–0–+12	34–4C	14
Output Level	0–**80**–127	00–7F	16

P-37: OD → Delay　　　02 02
OD-DELAY-OUTPUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[OD]			
Drive	0–**48**–127	00–7F	03
+ Pan	L63–**0**–R63	00–7F	04
Amp Type	Small/**Built-in**/Double Stack/ Triple Stack	00/01/02/03	05
Amp Switch	Off/**On**	00/01	06
[DELAY]			
Time	0ms–**250ms**–500ms	*4	08
Fb	-98%–**+32%**–+98%	0F–71	09
HF Damp	315Hz–8kHz/**Bypass**	*8	0A
# Bal	Dry100, Delay 0–**Dry100, Delay 74**–Dry 0, Delay100	00–7F	0C
[OUTPUT]			
Low Gain	-12–0–+12	34–4C	13
High Gain	-12–0–+12	34–4C	14
Output Level	0–**80**–127	00–7F	16

P-38: DS → Chorus　　　02 03
DS-CHORUS-OUTPUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[DS]			
Drive	0–**48**–127	00–7F	03
+ Pan	L63–**0**–R63	00–7F	04
Amp Type	Small/**Built-in**/Double Stack/ Triple Stack	00/01/02/03	05
Amp Switch	Off/**On**	00/01	06
[CHORUS]			
PreDelay Time	0msec–**1.0msec**–100msec	*1	08
Rate	0.05–**0.45**–10.0	*6	09
Depth	0–**72**–127	00–7F	0A

Parameter	Setting Value	Value (H)	MSB/LSB (H)
# Bal	Dry100, Chorus 0–**Dry100, Chorus100**–Dry 0, Chorus100	00–7F	0C
[OUTPUT]			
Low Gain	-12–0–+12	34–4C	13
High Gain	-12–0–+12	34–4C	14
Output Level	0–**72**–127	00–7F	16

P-39: DS → Flanger　　　02 04
DS-FLANGER-OUTPUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[DS]			
Drive	0–**48**–127	00–7F	03
+ Pan	L63–**0**–R63	00–7F	04
Amp	Small/**Built-in**/Double Stack/ Triple Stack	00/01/02/03	05
Amp Switch	Off/**On**	00/01	06
[FLANGER]			
PreDly	0m–**1.1m**–100m	*1	08
Rate	0.05–**0.60**–10.0	*6	09
Depth	0–**24**–127	00–7F	0A
Fb	-98%–**+80%**–+98%	0F–71	0B
# Bal	Dry100, Flnger 0–**Dry100, Flnger** 49–Dry 0, Flnger100	00–7F	0C
[OUTPUT]			
Low Gain	-12–0–+12	34–4C	13
High Gain	-12–0–+12	34–4C	14
Output Level	0–**72**–127	00–7F	16

P-40: DS → Delay　　　02 05
DS-DELAY-OUTPUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[DS]			
Drive	0–**48**–127	00–7F	03
+ Pan	L63–**0**–R63	00–7F	04
Amp Type	Small/**Built-in**/Double Stack/ Triple Stack	00/01/02/03	05
Amp Switch	Off/**On**	00/01	06
[DELAY]			
Time	0ms–**250ms**–500ms	*4	08
Fb	-98%–**+32%**–+98%	0F–71	09
HF Damp	315Hz–8kHz/**Bypass**	*8	0A
# Bal	Dry100, Delay 0–**Dry100, Delay 74**–Dry 0, Delay100	00–7F	0C
[OUTPUT]			
Low Gain	-12–0–+12	34–4C	13
High Gain	-12–0–+12	34–4C	14
Output Level	0–**72**–127	00–7F	16

P-41: EH → Chorus　　　02 06
ENHANCER-CHORUS-OUTPUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[ENHANCER]			
+ Sensitivity	0–**64**–127	00–7F	03
Mix Level	0–**127**	00–7F	04
[CHORUS]			
PreDelay Time	0msec–**14msec**–100msec	*1	08
Rate	0.05–**0.45**–10.0	*6	09
Depth	0–**101**–127	00–7F	0A

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Parameter	Setting Value	Value (H)	MSB/LSB (H)
# Bal	Dry100, Chorus 0–Dry100, Chorus100–Dry 0, Chorus100	00–7F	0C
[OUTPUT]			
Low Gain	-12–0–+12	34–4C	13
High Gain	-12–0–+12	34–4C	14
Output Level	0–80–127	00–7F	16

P-42: EH → Flanger   02 07
ENHANCER-FLANGER-OUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[ENHANCER]			
+ Sensitivity	0–64–127	00–7F	03
Mix Level	0–127	00–7F	04
[FLANGER]			
PreDly	0–1.6m–100m	*1	08
Rate	0.05–0.60–10.0	*6	09
Depth	0–24–127	00–7F	0A
Fb	-98%–+80%–+98%	0F–71	0B
# Bal	Dry100, Finger 0–Dry100, Finger 74–Dry 0, Finger100	00–7F	0C
[OUT]			
Low Gain	-12–0–+12	34–4C	13
High Gain	-12–0–+12	34–4C	14
Output Level	0–96–127	00–7F	16

P-43: EH → Delay   02 08
ENHANCER-DELAY-OUTPUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[ENHANCER]			
+ Sensitivity	0–64–127	00–7F	03
Mix Level	0–127	00–7F	04
[TIME]			
Time	0ms–250ms–500ms	*4	08
Fb	-98%–+32%–+98%	0F–71	09
HF Damp	315Hz–8kHz/Bypass	*8	0A
# Bal	Dry100, Delay 0–Dry100, Delay 74–Dry 0, Delay100	00–7F	0C
[OUTPUT]			
Low Gain	-12–0–+12	34–4C	13
High Gain	-12–0–+12	34–4C	14
Output Level	0–88–127	00–7F	16

P-44: Chorus → Delay   02 09
CHORUS-DELAY-OUTPUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[CHORUS]			
PreDelay Time	0msec–1.0msec–100msec	*1	03
Rate	0.05–0.50–10.0	*6	04
Depth	0–120–127	00–7F	05
+ Bal	Dry100, Chorus 0–Dry100, Chorus100–Dry 0, Chorus100	00–7F	07
[DELAY]			
Time	0ms–250ms–500ms	*4	08
Fb	-98%–+32%–+98%	0F–71	09
HF Damp	315Hz–8kHz/Bypass	*8	0A
# Bal	Dry100, Delay 0–Dry100, Delay 74–Dry 0, Delay100	00–7F	0C

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[OUTPUT]			
Low Gain	-12–0–+12	34–4C	13
High Gain	-12–0–+12	34–4C	14
Output Level	0–127	00–7F	16

P-45: Flanger → Delay   02 0A
FLANGER-DELAY-OUTPUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[FLANGER]			
PreDly	0m–1.6m–100m	*1	03
Rate	0.05–0.60–10.0	*6	04
Depth	0–24–127	00–7F	05
+ Fb	-98%–+80%–+98%	0F–71	06
Bal	Dry100, Finger 0–Dry100, Finger100–Dry 0, Finger100	00–7F	07
[DELAY]			
Time	0ms–250ms–500ms	*4	08
Fb	-98%–+32%–+98%	0F–71	09
HF Damp	315Hz–8kHz/Bypass	*8	0A
# Bal	Dry100, Delay 0–Dry100, Delay 74–Dry 0, Delay100	00–7F	0C
[OUTPUT]			
Low Gain	-12–0–+12	34–4C	13
High Gain	-12–0–+12	34–4C	14
Level	0–127	00–7F	16

P-46: Chorus → Flanger   02 0B
CHORUS-FLANGER-OUTPUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
PreDelay Time	0msec–1.0msec–100msec	*1	03
Rate	0.05–0.45–10.0	*6	04
Depth	0–120–127	00–7F	05
+ Bal	Dry100, Chorus 0–Dry100, Chorus100–Dry 0, Chorus100	00–7F	07
[FLANGER]			
PreDly	0m–1.6m–100m	*1	08
Rate	0.05–0.60–10.0	*6	09
Depth	0–24–127	00–7F	0A
Fb	-98%–+80%–+98%	0F–71	0B
# Bal	Dry 0, Finger100–Dry100, Finger100–Dry100, Finger 0	00–7F	0C
[OUTPUT]			
Low Gain	-12–0–+12	34–4C	13
High Gain	-12–0–+12	34–4C	14
Output Level	0–112–127	00–7F	16

● Effects that connect three or more types of effect in series (series 3 / series 4 / series 5)

Parameter	Setting Value	Value (H)	MSB/LSB (H)
P-47: Rotary Multi 02 0C			
OD-EQ-RT L-RT H-SP-OUT			
[OD]			
+ OD Drive	0–13–127	00–7F	03
Overdrive Switch	Off/On	00/01	04

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[EQ]			
L Gain	-12-0-+12	34-4C	05
H Gain	-12-0-+12	34-4C	09
Mid Frequency	200Hz-1.6kHz-6.3kHz	*10	06
Mid Q	0.5/1.0/2.0/4.0/9.0	00/01/02/03/04	07
MidGain	-12-0-+12	34-4C	08
[RT L]			
Slow Rate	0.05Hz-0.35Hz-10.0Hz	*6	0A
Fast Rate	0.05Hz-6.40Hz-10.0Hz	*6	0B
Accel	0-3-15	*14	0C
Level	0-127	00-7F	0D
[RT H]			
Slow Rate	0.05Hz-0.90Hz-10.0Hz	*6	0E
Fast Rate	0.05Hz-7.50Hz-10.0Hz	*6	0F
Accel	0-11-15	*14	10
Level	0-64-127	00-7F	11
[SP]			
RT Separation	0-96-127	00-7F	12
# RT Speed	Slow/Fast	00/7F	13
[OUT]			
Output Level	0-96-127	00-7F	16

P-48: Guitar Multi 1   04 00
CMP-OD (EQ)-CF-DLY-OUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[CMP]			
Attack	0-100-127	00-7F	03
Sustain	0-80-127	00-7F	04
Level	0-100-127	00-7F	05
Switch	Off/On	00/01	06
[OD]			
OD Select	Odrv/Dist	00/01	07
+ Drive	0-80-127	00-7F	08
OD Sw	Off/On	00/01	0D
Amp	Small/Bltln/2-Stk/3-Stk	00/01/02/03	09
Amp Sw	Off/On	00/01	0A
[EQ]			
OD Low Gain	-12-+5-+12	34-4C	0B
OD High Gain	-12-+10-+12	34-4C	0C
[CF]			
CF Select	Chorus/Flangr	00/01	0E
Rate	0.05-0.45-6.40	*7	0F
Depth	0-30-127	00-7F	10
Fb	-98%-+76%-+98%	0F-71	11
Mix	0-40-127	00-7F	12
[DLY]			
Delay Time	0msec-300msec-635msec	*5	13
Fb	0-34-127	00-7F	14
# Mix	0-15-127	00-7F	15
[OUT]			
Output Level	0-110-127	00-7F	16

Parameter	Setting Value	Value (H)	MSB/LSB (H)

P-49: Guitar Multi 2   04 01
CMP-OD-EQ-CF-OUTPUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[CMP]			
Attack	0-70-127	00-7F	03
Sustain	0-127	00-7F	04
Level	0-90-127	00-7F	05
Switch	Off/On	00/01	06
[OD]			
OD Select	Odrv/Dist	00/01	07
+ Drive	0-80-127	00-7F	08
OD Sw	Off/On	00/01	0B
Amp	Small/Bltln/2-Stk/3-Stk	00/01/02/03	09
Amp Sw	Off/On	00/01	0A
[EQ]			
L Gain	-12-+12	34-4C	0C
H Gain	-12--10-+12	34-4C	10
Mid Frequency	200Hz-1kHz-6.3kHz	*10	0D
Mid Q	0.5/1.0/2.0/4.0/9.0	00/01/02/03/04	0E
MidGain	-12-+5-+12	34-4C	0F
[CF]			
CF Select	Chorus/Flangr	00/01	11
Rate	0.05-0.45-6.40	*7	12
Depth	0-96-127	00-7F	13
Fb	-98%-+76%-+98%	0F-71	14
# Mix	0-127	00-7F	15
[OUTPUT]			
Output Level	0-80-127	00-7F	16

P-50: Guitar Multi 3   04 02
WAH-OD (EQ)-CF-DLY-OUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[WAH]			
FilType	LPF/BPF	00/01	03
Sw	Off/On	00/01	06
+ Manual	0-60-127	00-7F	04
Peak	0-10-127	00-7F	05
[OD]			
OD Select	Odrv/Dist	00/01	07
# Drive	0-80-127	00-7F	08
OD Sw	Off/On	00/01	0D
Amp	Small/Bltln/2-Stk/3-Stk	00/01/02/03	09
Amp Sw	Off/On	00/01	0A
[EQ]			
OD Low Gain	-12-0-+12	34-4C	0B
OD High Gain	-12-0-+12	34-4C	0C
[CF]			
CF Select	Chorus/Flangr	00/01	0E
Rate	0.05-0.45-6.40	*7	0F
Depth	0-127	00-7F	10
Fb	-98%-+50%-+98%	0F-71	11
Mix	0-50-127	00-7F	12
[DLY]			
Delay Time	0msec-160msec-635msec	*5	13
Fb	0-64-127	00-7F	14
Mix	0-30-127	00-7F	15

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[OUTPUT]			
Output Level	0–88–127	00–7F	16

P-51: Clean Gt Multi1　　04　03
CMP-EQ-CF-DLY-OUTPUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[CMP]			
Attack	0–50–127	00–7F	03
Sustain	0–127	00–7F	04
Level	0–75–127	00–7F	05
Switch	Off/On	00/01	06
[EQ]			
L Gain	-12–+12	34–4C	07
H Gain	-12–+12	34–4C	0B
Mid Frequency	200Hz–6.3kHz	*10	08
Mid Q	0.5/1.0/2.0/4.0/9.0	00/01/02/03/04	09
MidGain	-12–+5–+12	34–4C	0A
[CF]			
CF Select	Chorus/Flangr	00/01	0C
Rate	0.05–0.45–6.40	*7	0D
Depth	0–40–127	00–7F	0E
Fb	-98%–+30%–+98%	0F–71	0F
+ Mix	0–100–127	00–7F	10
[DLY]			
Delay Time	0msec–120msec–635msec	*5	11
HF Damp	315Hz–8kHz/Bypass	*8	13
Fb	0–40–127	00–7F	12
# Mix	0–30–127	00–7F	14
[OUTPUT]			
Output Level	0–95–127	00–7F	16

P-52: Clean Gt Multi2　　04　04
AW-EQ-CF-DLY-OUTPUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[AW]			
Filtype	LPF/BPF	00/01	03
Sw	Off/On	00/01	08
+ Manual	0–55–127	00–7F	04
Peak	0–40–127	00–7F	05
Rate	0.05Hz–1.50Hz–6.40Hz	*7	06
Depth	0–80–127	00–7F	07
[EQ]			
L Gain	-12–+12	34–4C	09
H Gain	-12–0–+12	34–4C	0D
Mid Frequency	200Hz–1.6kHz–6.3kHz	*10	0A
Mid Q	0.5/1.0/2.0/4.0/9.0	00/01/02/03/04	0B
MidGain	-12–0–+12	34–4C	0C
[CF]			
CF Select	Chorus/Flangr	00/01	0E
Rate	0.05–0.45–6.40	*7	0F
Depth	0–20–127	00–7F	10
Fb	-98%–+76%–+98%	0F–71	11
Mix	0–100–127	00–7F	12
[DLY]			
Delay Time	0msec–30msec–635msec	*5	13
Fb	0–15–127	00–7F	14
# Mix	0–80–127	00–7F	15

Parameter	Setting Value	Value (H)	MSB/LSB (H)
Output Level	0–76–127	00–7F	16

P-53: Bass Multi　　04　05
CMP-OD-EQ-CF-OUTPUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[CMP]			
Attack	0–72–127	00–7F	03
Sustain	0–100–127	00–7F	04
Level	0–75–127	00–7F	05
Switch	Off/On	00/01	06
[OD]			
OD Select	Odrv/Dist	00/01	07
+ Drive	0–48–127	00–7F	08
OD Sw	Off/On	00/01	0B
Amp	Small/BltIn/2-Stk/3-Stk	00/01/02	09
Amp Sw	Off/On	00/01	0A
[EQ]			
L Gain	-12–+2–+12	34–4C	0C
H Gain	-12–0–+12	34–4C	10
Mid Frequency	200Hz–1.6kHz–6.3kHz	*10	0D
Mid Q	0.5/1.0/2.0/4.0/9.0	00/01/02/03/04	0E
MidGain	-12–+4–+12	34–4C	0F
[CF]			
CF Select	Chorus/Flangr	00/01	11
Rate	0.05–0.30–6.40	*7	12
Depth	0–20–127	00–7F	13
Fb	-98%–+76%–+98%	0F–71	14
# Mix	0–64–127	00–7F	15
[OUTPUT]			
Output Level	0–76–127	00–7F	16

P-54: Rhodes Multi　　04　06
EH-PH-CF(MOD)-TP-OUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[EH]			
Sensitivity	0–64–127	00–7F	03
Mix Level	0–64–127	00–7F	04
[PH]			
Manual	100Hz–620Hz–8.0kHz	*12	05
Rate	0.05Hz–0.85Hz–6.40Hz	*7	06
Depth	0–32–127	00–7F	07
Reso	0–16–127	00–7F	08
Mix	0–64–127	00–7F	09
[CF]			
CF Select	Chorus/Flangr	00/01	0A
LPF	250Hz–6.3kHz/Bypass	*11	0B
Dly	0ms–1.0ms–100ms	*1	0C
Fb	-98%–+80%–+98%	0F–71	0F
Mix	0–127	00–7F	10
[MOD]			
CF Mod Rate	0.05Hz–0.45Hz–6.40Hz	*7	0D
CF Mod Depth	0–64–127	00–7F	0E
[TP]			
TP Select	Trem/Pan	00/01	11
+ Rate	0.05–3.05–6.40	*7	13
# Depth	0–64–127	00–7F	14
Wave	∿/⊓⊔/∧∧/⊣⊣/⊢⊢	00/01/02/03/04	12

Parameter	Setting Value	Value (H)	MSB/LSB (H)
Sw	Off/On	00/01	15
[OUTPUT]			
Output Level	0–127	00–7F	16

P-55: Keyboard Multi   05 00
RM-EQ-PS-PH-DLY-OUTPUT

[RM]

Parameter	Setting Value	Value (H)	MSB/LSB (H)
+ Modulation Freq.	0–50–127	00–7F	03
# Bal	Dry100, RingM 0–Dry100, RingM 30–Dry 0, RingM100	00–7F	04

[EQ]

L Gain	-12–+3–+12	34–4C	05
H Gain	-12–3–+12	34–4C	09
Mid Frequency	200Hz–6.3kHz	*10	06
Mid Q	0.5/1.0/2.0/4.0/9.0	00/01/02/03/04	07
MidGain	-12–+5–+12	34–4C	08

[PS]

Coarse	-24–+7–+12	28–4C	0A
Fine	-100–0–+100	0E–72	0B
Pitch Shift Mode	1-5	00–04	0C
Bal	Dry100, PitchS 0–Dry100, PitchS 60–Dry 0, PitchS100	00–7F	0D

[PH]

Manual	100Hz–620Hz–8.0kHz	*12	0E
Rate	0.05–0.45–6.40	*7	0F
Depth	0–90–127	00–7F	10
Reso	0–80–127	00–7F	11
Mix	0–75–127	00–7F	12

[DLY]

Delay Time	0msec–100msec–635msec	*5	13
Feedback	0–64–127	00–7F	14
Mix	0–40–127	00–7F	15

[OUTPUT]

Output Level	0–96–127	00–7F	16

● Effects that connect two types of effect in parallel (parallel 2)

Parameter	Setting Value	Value (H)	MSB/LSB (H)

P-56: Chorus, Delay   11 00
CHORUS, DELAY-OUTPUT

[CHORUS]

PreDelay Time	0msec–1.0msec–100msec	*1	03
Rate	0.05Hz–0.45Hz–10.0Hz	*6	04
Depth	0–120–127	00–7F	05
+ Bal	Dry100, Chorus 0–Dry100, Chorus100–Dry 0, Chorus100	00–7F	07
Pan	L63–0–R63	00–7F	12
Level	0–127	00–7F	13

[DELAY]

Time	0msec–250msec–500msec	*4	08
Feedback Level	-98%–+32%–+98%	0F–71	09
HF Damp	315Hz–8kHz/Bypass	*8	0A
# Bal	Dry100, Delay 0–Dry100, Delay 61–Dry 0, Delay100	00–7F	0C
Pan	L63–0–R63	00–7F	14

Parameter	Setting Value	Value (H)	MSB/LSB (H)
Level	0–127	00–7F	15
[OUTPUT]			
Output Level	0–96–127	00–7F	16

P-57: Flanger, Delay   11 01
FLANGER, DELAY-OUTPUT

[FLANGER]

PreDelay Time	0msec–1.6msec–100msec	*1	03
Rate	0.05Hz–0.60Hz–10.0Hz	*6	04
Depth	0–24–127	00–7F	05
Feedback Level	-98%–+80%–+98%	0F–71	06
+Bal	Dry100, Flnger 0–Dry100, Flnger100–Dry 0, Flnger100	00–7F	07
Pan	L63–0–R63	00–7F	12
Level	0–127	00–7F	13

[TIME]

Time	0msec–250mec–500msec	*4	08
Feedback Level	-98%–+32%–+98%	0F–71	09
HF Damp	315Hz–8kHz/Bypass	*8	0A
# Bal	Dry100, Delay 0–Dry100, Delay 74–Dry 0, Delay100	00–7F	0C
Pan	L63–0–R63	00–7F	14
Level	0–127	00–7F	15

[OUTPUT]

Output Level	0–96–127	00–7F	16

P-58: Chorus, Flanger   11 02
CHORUS, FLANGER-OUTPUT

[CHORUS]

PreDelay Time	0sec–1.6msec–100msec	*1	03
Rate	0.05Hz–0.45Hz–10.0Hz	*6	04
Depth	0–120–127	00–7F	05
+ Bal	Dry100 ,Chorus 0–Dry100 , Chorus100 -Dry 0 ,Chorus100	00–7F	07
Pan	L63–0–R63	00–7F	12
Level	0–127	00–7F	13

[FLANGER]

PreDelay Time	0msec–1.6msec–100msec	*1	08
Rate	0.05Hz–0.60Hz–10.0Hz	*6	09
Depth	0–24–127	00–7F	0A
Feedback Level	-98%–+80%–+98%	0F–71	0B
# FL Bal	Dry100, Flnger 0–Dry100, Flnger100 -Dry 0, Flnger100	00–7F	0C
Pan	L63–0–R63	00–7F	14
Level	0–127	00–7F	15

[OUTPUT]

Output Level	0–88–127	00–7F	16

P-59: OD/DS 1, OD/DS 2   11 03
OD1,OD2-OUTPUT

[OD1]

OD1 Select	Odrv/Dist	00/01	03
+ Drive	0–48–127	00–7F	04
Amp	Small/Bltln/2-Stk/3-Stk	00/01/02/03	05
Amp Sw	Off/On	00/01	06
Pan	L63–0–R63	00–7F	12

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Parameter	Setting Value	Value (H)	MSB/LSB (H)
Level	0–96–127	00–7F	13
[OD2]			
OD2 Select	Odrv/Dist	00/01	08
# Drive	0–76–127	00–7F	09
Amp	Small/BuiltIn/2-Stk/3-Stk	00/01/02/03	0A
Amp Sw	Off/On	00/01	0B
Pan	L63–0–R63	00–7F	14
Level	0–84–127	00–7F	15
[OUTPUT000]			
Output Level	0–127	00–7F	16

P-60: OD/DS, Rotary   11 04
OD, (RT L-RT H-RT)-OUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[OD]			
OD Select	Odrv/Dist	00/01	03
+ Drive	0–48–127	00–7F	04
Amp	Small/BltIn/2-Stk/3-Stk	00/01/02/03	05
Amp Sw	Off/On	00/01	06
Pan	L63–0–R63	00–7F	12
Level	0–96–127	00–7F	13
[RT L]			
Slow Rate	0.05Hz–0.35Hz–10.0Hz	*6	08
Fast Rate	0.05Hz–6.40Hz–10.0Hz	*6	09
Accel	0–3–15	*14	0A
Level	0–127	00–7F	0B
[RT H]			
Slow Rate	0.05Hz–0.90Hz–10.0Hz	*6	0C
Fast Rate	0.05Hz–7.50Hz–10.0Hz	*6	0D
Accel	0–11–15	*14	0E
Level	0–64–127	00–7F	0F
[RT]			
Separation	0–96–127	00–7F	10
# Speed	Slow/Fast	00/7F	11
Pan	L63–0–R63	00–7F	14
Level	0–127	00–7F	15
[OUT]			
Output Level	0–127	00–7F	16

P-61: OD/DS, Phaser   11 05
OD, PHASER-OUTPUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[OD]			
OD Select	Odrv/Dist	00/01	03
+ Drive	0–48–127	00–7F	04
Amp	Small/BltIn/2-Stk/3-Stk	00/01/02/03	05
Amp Sw	Off/On	00/01	06
Pan	L63–0–R63	00–7F	12
Level	0–96–127	00–7F	13
[PHASER]			
Manual	100Hz–620Hz–8.0kHz	*12	08
# Rate	0.05Hz–0.85Hz–10.0Hz	*6	09
Depth	0–64–127	00–7F	0A
Resonance	0–16–127	00–7F	0B
Mix Level	0–127	00–7F	0C
Pan	L63–0–R63	00–7F	14

Parameter	Setting Value	Value (H)	MSB/LSB (H)
Level	0–127	00–7F	15
[OUTPUT]			
Output Level	0–127	00–7F	16

P-62: OD/DS, Auto Wah   11 06
OD, AUTO WAH-OUTPUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[OD]			
OD Select	Odrv/Dist	00/01	03
+ Drive	0–48–127	00–7F	04
Amp	Small/BltIn/2-Stk/3-Stk	00/01/002/03	05
Amp Sw	Off/On	00/01	06
Pan	L63–0–R63	00–7F	12
Level	0–96–127	00–7F	13
[AUTO WAH]			
FilType	LPF/BPF	00/01	08
Sens	0–127	00–7F	09
# Manual	0–68–127	00–7F	0A
Peak	0–62–127	00–7F	0B
Rate	0.05–2.05–10.0	*6	0C
Depth	0–72–127	00–7F	0D
Polarity	Down/Up	00/01	0E
Pan	L63–0–R63	00–7F	14
Level	0–127	00–7F	15
[OUTPUT]			
Output Level	0–127	00–7F	16

P-63: Phaser,Rotary   11 07
PH, (RT L-RT H-RT)-OUT

Parameter	Setting Value	Value (H)	MSB/LSB (H)
[PH]			
Manual	100Hz–620Hz–8.0kHz	*12	03
+ Rate	0.05Hz–0.85Hz–10.0Hz	*6	04
Depth	0–64–127	00–7F	05
Resonance	0–16–127	00–7F	06
Mix Level	0–127	00–7F	07
Pan	L63–0–R63	00–7F	12
Level	0–127	00–7F	13
[RT L]			
Slow Rate	0.05Hz–0.35Hz–10.0Hz	*6	08
Fast Rate	0.05Hz–6.40Hz–10.0Hz	*6	09
Accel	0–3–15	*14	0A
Level	0–127	00–7F	0B
[RT H]			
Slow Rate	0.05Hz–0.90Hz–10.0Hz	*6	0C
Fast Rate	0.05Hz–7.50Hz–10.0Hz	*6	0D
Accel	0–11–15	*14	0E
Level	0–64–127	00–7F	0F
[RT]			
Separation	0–96–127	00–7F	10
# Speed	Slow/Fast	00/7F	11
Pan	L63–0–R63	00–7F	14
Level	0–127	00–7F	15
[OUT]			
Output Level	0–127	00–7F	16

Parameter	Setting Value	Value (H)	MSB/LSB (H)
P-64: Phaser, Auto Wah		**11**	**08**

PHASER, AUTO WAH-OUTPUT

[PHASER]

Manual	100Hz–**620Hz**–8.0kHz	*12	03
+ Rate	0.05Hz–**0.85Hz**–10.0Hz	*6	04
Depth	0–**64**–127	00–7F	05
Resonance	0–**16**–127	00–7F	06
Mix Level	0–**127**	00–7F	07
Pan	L63–**0**–R63	00–7F	12
Level	0–**127**	00–7F	13

[AUTO WAH]

FilType	LPF/**BPF**	00/01	08
Sens	**0**–127	00–7F	09
# Manual	0–**68**–127	00–7F	0A
Peak	0–**62**–127	00–7F	0B
Rate	0.05Hz–**2.05Hz**–10.0Hz	*6	0C
Depth	0–**72**–127	00–7F	0D
Polarity	Down/**Up**	00/01	0E
Pan	L63–**0**–R63	00–7F	14
Level	0–**127**	00–7F	15

[OUTPUT]

Output Level	0–**127**	00–7F	16

Appendices

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Multi-Effects Parameter Value Conversion Table

Here is a table for converting between the hexadecimal value and the actual setting for each parameter. These parameters are used in the following effect types.

1.Pre Delay Time
P-10: Stereo Flanger
P-11: Step Flanger
P-16: Hexa Chorus
P-17: Tremolo Chorus
P-18: Stereo Chorus
P-19: Space D
P-20: 3D Chorus
P-26: Reverb
P-27: Gate Reverb
P-29:2 Pitch Shifter
P-30:Fb Pitch Shifter
P-35: OD → Chorus
P-36: OD → Flanger
P-38: DS → Chorus
P-39: DS → Flanger
P-41: EH → Chorus
P-42: EH → Flanger
P-44: Chorus → Delay
P-45: Flanger → Delay
P-46: Chorus → Flanger
P-54: Rhodes Multi
P-56: Chorus, Delay

P-57: Flanger, Delay
P-58: Chorus, Flanger

2.Delay Time1
P-23: 3 Tap Delay
P-24: 4 Tap Delay

3.Delay Time2
P-25: Time Ctrl Delay

4.Delay Time3
P-21: Stereo Delay
P-22: Modulation Delay
P-28: 3D Delay
P-37: OD → Delay
P-40: DS → Delay
P-43: EH → Delay
P-44: Chorus → Delay
P-45: Flanger → Delay
P-56: Chorus, Delay
P-57: Flanger, Delay

5.Delay Time4
P-48: Guitar Multi 1
P-50: Guitar Multi 3
P-51: Clean Gt Multi1

P-52: Clean Gt Multi2
P-55: Keyboard Multi

6.Rate1
P-07: Phaser
P-08: Auto Wah
P-09: Rotary
P-10: Stereo Flanger
P-11: Step Flanger
P-12: Tremolo
P-13: Auto Pan
P-16: Hexa Chorus
P-17: Tremolo Chorus
P-18: Stereo Chorus
P-19: Space D
P-20: 3D Chorus
P-22: Modulation Delay
P-35: OD → Chorus
P-36: OD → Flanger
P-38: DS → Chorus
P-39: DS ⟩ Flanger
P-41: EH → Chorus
P-42: EH → Flanger
P-44: Chorus ⟩ Delay

7.Rate2
P-48: Guitar Multi 1
P-49: Guitar Multi 2
P-50: Guitar Multi 3
P-51: Clean Gt Multi1
P-52: Clean Gt Multi2
P-53: Bass Multi
P-54: Rhodes Multi
P-55: Keyboard Multi

8.HF Damp
P-21: Stereo Delay

P-45: Flanger → Delay
P-46: Chorus→ Flanger
P-47: Rotary Multi
P-56: Chorus, Delay
P-57: Flanger, Delay
P-58: Chorus, Flanger
P-60: OD/DS, Rotary
P-61: OD/DS, Phaser
P-62: OD/DS, Auto Wah
P-63: Phaser,Rotary
P-64: Phaser, Auto Wah

P-22: Modulation Delay
P-23: 3 Tap Delay
P-24: 4 Tap Delay
P-25: Time Ctrl Delay
P-26: Reverb
P-28: 3D Delay
P-37: OD → Delay
P-40: DS → Delay
P-43: EH → Delay
P-44: Chorus → Delay
P-45: Flanger → Delay
P-51: Clean Gt Multi1
P-56: Chorus, Delay
P-57: Flanger, Delay

9.Cutoff Freq
P-10: Stereo Flanger
P-18: Stereo Chorus
P-34: Lo-Fi 2

10.EQ Freq
P-01: Stereo-EQ
P-47: Rotary Multi
P-49: Guitar Multi 2

P-51: Clean Gt Multi1
P-52: Clean Gt Multi2
P-53: Bass Multi
P-55: Keyboard Multi

11.LPF
P-34: Lo-Fi 2
P-54: Rhodes Multi

12.Manual
P-07: Phaser
P-54: Rhodes Multi
P-55: Keyboard Multi
P-61: OD/DS, Phaser
P-63: Phaser,Rotary
P-64: Phaser, Auto Wah

13.Azimuth
P-31: 3D Auto
P-32: 3D Manua

14.Accl
P-04: Humanizer
P-09: Rotary
P-60: OD/DS, Rotary
P-63: Phaser,Rotary

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
Value (Hex.)	Value (Dec.)	Pre Delay Time (ms)	Delay Time 1 (ms)	Delay Time 2 (ms)	Delay Time 3 (ms)	Delay Time 4 (ms)	Rate1 (Hz)	Rate2 (Hz)	HF Damp (Hz)	Cutoff Freq (Hz)	EQ Freq (Hz)	LPF (Hz)	Manual (Hz)	Azimuth (deg)	Accl
00	0	0.0	200	200	0.0	0	0.05	0.05	315	250	200	250	100	L180 (=R180)	0
01	1	0.1	205	205	0.1	5	0.10	0.10	:	:	:	:	110	:	:
02	2	0.2	210	210	0.2	10	0.15	0.15	:	:	:	:	120	:	:
03	3	0.3	215	215	0.3	15	0.20	0.20	:	:	:	:	130	:	:
04	4	0.4	220	220	0.4	20	0.25	0.25	:	:	:	:	140	:	:
05	5	0.5	225	225	0.5	25	0.30	0.30	:	:	:	:	150	L180	:
06	6	0.6	230	230	0.6	30	0.35	0.35	:	:	:	:	160	L168	:
07	7	0.7	235	235	0.7	35	0.40	0.40	315	250	200	250	170	:	0
08	8	0.8	240	240	0.8	40	0.45	0.45	400	315	250	315	180	:	1
09	9	0.9	245	245	0.9	45	0.50	0.50	:	:	:	:	190	L168	:
0A	10	1.0	250	250	1.0	50	0.55	0.55	:	:	:	:	200	L156	:
0B	11	1.1	255	255	1.1	55	0.60	0.60	:	:	:	:	210	:	:
0C	12	1.2	260	260	1.2	60	0.65	0.65	:	:	:	:	220	:	:
0D	13	1.3	265	265	1.3	65	0.70	0.70	:	:	:	:	230	L156	:
0E	14	1.4	270	270	1.4	70	0.75	0.75	:	:	:	:	240	L144	:
0F	15	1.5	275	275	1.5	75	0.80	0.80	400	315	250	315	250	:	1
10	16	1.6	280	280	1.6	80	0.85	0.85	500	400	315	400	260	:	2
11	17	1.7	285	285	1.7	85	0.90	0.90	:	:	:	:	270	L144	:
12	18	1.8	290	290	1.8	90	0.95	0.95	:	:	:	:	280	L132	:
13	19	1.9	295	295	1.9	95	1.00	1.00	:	:	:	:	290	:	:
14	20	2.0	300	300	2.0	100	1.05	1.05	:	:	:	:	300	:	:
15	21	2.1	305	305	2.1	105	1.10	1.10	:	:	:	:	320	L132	:
16	22	2.2	310	310	2.2	110	1.15	1.15	:	:	:	:	340	L120	:
17	23	2.3	315	315	2.3	115	1.20	1.20	500	400	315	400	360	:	2
18	24	2.4	320	320	2.4	120	1.25	1.25	630	500	400	500	380	:	3
19	25	2.5	325	325	2.5	125	1.30	1.30	:	:	:	:	400	L120	:
1A	26	2.6	330	330	2.6	130	1.35	1.35	:	:	:	:	420	L108	:
1B	27	2.7	335	335	2.7	135	1.40	1.40	:	:	:	:	440	:	:
1C	28	2.8	340	340	2.8	140	1.45	1.45	:	:	:	:	460	:	:
1D	29	2.9	345	345	2.9	145	1.50	1.50	:	:	:	:	480	L108	:
1E	30	3.0	350	350	3.0	150	1.55	1.55	:	:	:	:	500	L96	:
1F	31	3.1	355	355	3.1	155	1.60	1.60	630	500	400	500	520	:	3
20	32	3.2	360	360	3.2	160	1.65	1.65	800	630	500	630	540	:	4
21	33	3.3	365	365	3.3	165	1.70	1.70	:	:	:	:	560	L96	:
22	34	3.4	370	370	3.4	170	1.75	1.75	:	:	:	:	580	L84	:
23	35	3.5	375	375	3.5	175	1.80	1.80	:	:	:	:	600	:	:
24	36	3.6	380	380	3.6	180	1.85	1.85	:	:	:	:	620	:	:
25	37	3.7	385	385	3.7	185	1.90	1.90	:	:	:	:	640	L84	:
26	38	3.8	390	390	3.8	190	1.95	1.95	:	:	:	:	660	L72	:
27	39	3.9	395	395	3.9	195	2.00	2.00	800	630	500	630	680	:	4
28	40	4.0	400	400	4.0	200	2.05	2.05	1000	800	630	800	700	:	5
29	41	4.1	405	405	4.1	205	2.10	2.10	:	:	:	:	720	L72	:
2A	42	4.2	410	410	4.2	210	2.15	2.15	:	:	:	:	740	L60	:
2B	43	4.3	415	415	4.3	215	2.20	2.20	:	:	:	:	760	:	:
2C	44	4.4	420	420	4.4	220	2.25	2.25	:	:	:	:	780	:	:
2D	45	4.5	425	425	4.5	225	2.30	2.30	:	:	:	:	800	L60	:
2E	46	4.6	430	430	4.6	230	2.35	2.35	:	:	:	:	820	L48	:
2F	47	4.7	435	435	4.7	235	2.40	2.40	1000	800	630	800	840	L48	5

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Value (Hex.)	Value (Dec.)	Pre Delay Time (ms)	Delay Time 1 (ms)	Delay Time 2 (ms)	Delay Time 3 (ms)	Delay Time 4 (ms)	Rate1 (Hz)	Rate2 (Hz)	HF Damp (Hz)	Cutoff Freq (Hz)	EQ Freq (Hz)	LPF (Hz)	Manual (Hz)	Azimuth (deg)	Accl
30	48	4.8	440	440	4.8	240	2.45	2.45	1250	1000	800	1000	860	L48	6
31	49	4.9	445	445	4.9	245	2.50	2.50	:	:	:	:	880	L48	:
32	50	5.0	450	450	5.0	250	2.55	2.55					900	L36	
33	51	5.5	455	455	5.5	255	2.60	2.60	:	:	:	:	920	:	
34	52	6.0	460	460	6.0	260	2.65	2.65					940	:	
35	53	6.5	465	465	6.5	265	2.70	2.70	:	:	:	:	960	L36	
36	54	7.0	470	470	7.0	270	2.75	2.75	:	:	:	:	980	L24	:
37	55	7.5	475	475	7.5	275	2.80	2.80	1250	1000	800	1000	1000	:	6
38	56	8.0	480	480	8.0	280	2.85	2.85	1600	1250	1000	1250	1100	:	7
39	57	8.5	485	485	8.5	285	2.90	2.90	:	:	:	:	1200	L24	
3A	58	9.0	490	490	9.0	290	2.95	2.95	:	:	:	:	1300	L12	
3B	59	9.5	495	495	9.5	295	3.00	3.00					1400	:	
3C	60	10	500	500	10	300	3.05	3.05	:	:	:	:	1500	:	
3D	61	11	505	505	11	305	3.10	3.10	:	:	:	:	1600	L12	
3E	62	12	510	510	12	310	3.15	3.15					1700	0	:
3F	63	13	515	515	13	315	3.20	3.20	1600	1250	1000	1250	1800	:	7
40	64	14	520	520	14	320	3.25	3.25	2000	1600	1250	1600	1900	:	8
41	65	15	525	525	15	325	3.30	3.30	:	:	:	:	2000	0	
42	66	16	530	530	16	330	3.35	3.35	:	:	:	:	2100	R12	
43	67	17	535	535	17	335	3.40	3.40					2200	:	
44	68	18	540	540	18	340	3.45	3.45	:	:	:	:	2300	:	
45	69	19	545	545	19	345	3.50	3.50	:	:	:	:	2400	R12	
46	70	20	550	550	20	350	3.55	3.55					2500	R24	
47	71	21	560	555	21	355	3.60	3.60	2000	1600	1250	1600	2600	:	8
48	72	22	570	560	22	360	3.65	3.65	2500	2000	1600	2000	2700	:	9
49	73	23	580	565	23	365	3.70	3.70	:	:	:	:	2800	R24	
4A	74	24	590	570	24	370	3.75	3.75	:	:	:	:	2900	R36	
4B	75	25	600	575	25	375	3.80	3.80					3000	:	
4C	76	26	610	580	26	380	3.85	3.85	:	:	:	:	3100	:	
4D	77	27	620	585	27	385	3.90	3.90	:	:	:	:	3200	R36	
4E	78	28	630	590	28	390	3.95	3.95	:	:	:	:	3300	R48	:
4F	79	29	640	595	29	395	4.00	4.00	2500	2000	1600	2000	3400	:	9
50	80	30	650	600	30	400	4.05	4.05	3150	2500	2000	2500	3500	:	10
51	81	31	660	610	31	405	4.10	4.10	:	:	:	:	3600	R48	
52	82	32	670	620	32	410	4.15	4.15	:	:	:	:	3700	R60	
53	83	33	680	630	33	415	4.20	4.20					3800	:	
54	84	34	690	640	34	420	4.25	4.25	:	:	:	:	3900	:	
55	85	35	700	650	35	425	4.30	4.30	:	:	:	:	4000	R60	
56	86	36	710	660	36	430	4.35	4.35	:	:	:	:	4100	R72	:
57	87	37	720	670	37	435	4.40	4.40	3150	2500	2000	2500	4200	:	10
58	88	38	730	680	38	440	4.45	4.45	4000	3150	2500	3150	4300	:	11
59	89	39	740	690	39	445	4.50	4.50	:	:	:	:	4400	R72	
5A	90	40	750	700	40	450	4.55	4.55	:	:	:	:	4500	R84	
5B	91	41	760	710	50	455	4.60	4.60					4600	:	
5C	92	42	770	720	60	460	4.65	4.65	:	:	:	:	4700	:	
5D	93	43	780	730	70	465	4.70	4.70	:	:	:	:	4800	R84	
5E	94	44	790	740	80	470	4.75	4.75	:	:	:	:	4900	R96	
5F	95	45	800	750	90	475	4.80	4.80	4000	3150	2500	3150	5000	:	11
60	96	46	810	760	100	480	4.85	4.85	5000	4000	3150	4000	5100	:	12
61	97	47	820	770	110	485	4.90	4.90	:	:	:	:	5200	R96	
62	98	48	830	780	120	490	4.95	4.95	:	:	:	:	5300	R108	
63	99	49	840	790	130	495	5.00	5.00					5400	:	
64	100	50	850	800	140	500	5.10	5.05	:	:	:	:	5500	:	
65	101	52	860	810	150	505	5.20	5.10	:	:	:	:	5600	R108	
66	102	54	870	820	160	510	5.30	5.15	:	:	:	:	5700	R120	
67	103	56	880	830	170	515	5.40	5.20	5000	4000	3150	4000	5800	:	12
68	104	58	890	840	180	520	5.50	5.25	6300	5000	4000	5000	5900	:	13
69	105	60	900	850	190	525	5.60	5.30	:	:	:	:	6000	R120	
6A	106	62	910	860	200	530	5.70	5.35	:	:	:	:	6100	R132	
6B	107	64	920	870	210	535	5.80	5.40					6200	:	
6C	108	66	930	880	220	540	5.90	5.45	:	:	:	:	6300	:	
6D	109	68	940	890	230	545	6.00	5.50	:	:	:	:	6400	R132	
6E	110	70	950	900	240	550	6.10	5.55	:	:	:	:	6500	R144	
6F	111	72	960	910	250	555	6.20	5.60	6300	5000	4000	5000	6600	:	13
70	112	74	970	920	260	560	6.30	5.65	8000	6300	5000	6300	6700	:	14
71	113	76	980	930	270	565	6.40	5.70	:	:	:	:	6800	R144	
72	114	78	990	940	280	570	6.50	5.75	:	:	:	:	6900	R156	
73	115	80	1000	950	290	575	6.60	5.80					7000	:	
74	116	82	--	960	300	580	6.70	5.85	:	:	:	:	7100	:	
75	117	84	--	970	320	585	6.80	5.90	:	:	:	:	7200	R156	
76	118	86	--	980	340	590	6.90	5.95	:	:	:	:	7300	R168	
77	119	88	--	990	360	595	7.00	6.00	8000	6300	5000	6300	7400	:	14
78	120	90	--	1000	380	600	7.50	6.05	Bypass	8000	6300	Bypass	7500	:	15
79	121	92	--	1000	400	605	8.00	6.10	:	:	:	:	7600	:	
7A	122	94	--	1000	420	610	8.50	6.15	:	:	:	:	7700	R180 (=L180)	
7B	123	96	--	1000	440	615	9.00	6.20	:	:	:	:	7800	:	
7C	124	98	--	1000	460	620	9.50	6.25	:	:	:	:	7900	:	
7D	125	100	--	1000	480	625	10.00	6.30	:	:	:	:	8000	:	
7E	126	100	--	1000	500	630	10.00	6.35	:	:	:	:	8000	:	
7F	127	100	--	1000	500	635	10.00	6.40	Bypass	8000	6300	Bypass	8000	R180 (=L180)	15

Appendices

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Preset Patch List

* In the factory-set user patches, parts which are not listed in the Patch List are set to the initialized condition.

No.	Patch Name	Part	Tone Set	CC00/PC	Tone Name	Multi-Effects Type
P-001	RB STRAT		[3]	000/028	Clean Gt.	48:Guitar Multi 1
P-002	MILD OD		[3]	016/028	TC FrontPick	48:Guitar Multi 1
P-003	WAH! PEDAL		[3]	017/028	TC Rear Pick	50:Guitar Multi 3
P-004	WARM OD		[3]	016/028	TC FrontPick	49:Guitar Multi 2
P-005	EC STRAT		[3]	001/028	Clean Half	48:Guitar Multi 1
P-006	BLUES OD		[3]	019/028	TC Clean 2:	05:Overdrive
P-007	HEAVY & WILD		[3]	017/028	TC Rear Pick	49:Guitar Multi 2
P-008	FLANGER GTR		[3]	019/028	TC Clean 2:	49:Guitar Multi 2
P-009	SLOW GEAR		[3]	019/028	TC Clean 2:	40:DS → Delay
P-010	MID-BOOST		[3]	017/028	TC Rear Pick	50:Guitar Multi 3
P-011	POWER RHYTHM		[1]	000/029	Muted Gt.	49:Guitar Multi 2
P-012	HEAVY RHYTHM		[3]	001/035	Picked Bass2	49:Guitar Multi 2
P-013	NOISY RHYTHM	A01	[3]	003/028	Open Hard 2	59:OD/DS 1, OD/DS 2
		A02	[3]	002/028	Open Hard 1	59:OD/DS 1, OD/DS 2
P-014	CLEAN RHYTHM		[3]	003/028	Open Hard 2	51:Clean Gt Multi1
P-015	WAH RHYTHM		[3]	003/028	Open Hard 2	52:Clean Gt Multi2
P-016	T-WAH GUITAR		[3]	003/028	Open Hard 2	08:Auto Wah
P-017	FUNK PHASE		[3]	003/028	Open Hard 2	07:Phaser
P-018	MELLOW&CLEAN		[3]	016/028	TC FrontPick	51:Clean Gt Multi1
P-019	COOL ARP.		[3]	001/028	Clean Half	51:Clean Gt Multi1
P-020	SURF GUITAR		[3]	002/029	TC Muted Gt.	51:Clean Gt Multi1
P-021	JAZZ GUITAR		[3]	000/027	Jazz Gt.	51:Clean Gt Multi1
P-022	NYLON BOSSA		[3]	032/025	Nylon Gt.2	26:Reverb
P-023	ENH. NYLON		[3]	000/025	Nylon-str.Gt	43:EH → Delay
P-024	ENH. STEEL		[3]	026/032	Steel Gt.2	41:EH → Chorus
P-025	COMP PK BASS		[3]	000/035	Picked Bass	53:Bass Multi
P-026	DRIVE PK BS.		[3]	000/035	Picked Bass	53:Bass Multi
P-027	JP FRETLESS		[3]	001/036	Fretless Bs2	53:Bass Multi
P-028	HYPER BASS	A01	[3]	001/039	SynthBass101	62:OD/DS, Auto Wah
		A02	[3]	009/037	Unison Slap	62:OD/DS, Auto Wah
P-029	303 SAW BASS		[3]	013/039	TB303 Saw Bs	07:Phaser
P-030	FAT S.BASS		[3]	000/040	Synth Bass 2	07:Phaser
P-031	SYNC BASS		[3]	024/040	Sync Bass	07:Phaser
P-032	HUMAN BASS		[3]	009/039	TB303 Bass	04:Humanizer
P-033	PH RHODES		[3]	000/005	E.Piano 1	07:Phaser
P-034	TREM RHODES		[3]	000/005	E.Piano 1	17:Tremolo Chorus
P-035	TREM WURLY		[3]	024/005	Wurly	54:Rhodes Multi
P-036	TREM FM EP		[3]	016/006	St.FM EP	17:Tremolo Chorus
P-037	SC RHODES		[3]	000/005	E.Piano 1	54:Rhodes Multi
P-038	SOFT E.PIANO		[2]	008/005	St.Soft EP	22:Modulation Delay
P-039	COMP PIANO		[3]	000/003	Piano 3	14:Compressor
P-040	COMP CLAV.		[3]	000/008	Clav.	51:Clean Gt Multi1
P-041	THE E.ORGAN		[3]	000/017	Organ 1	09:Rotary
P-042	TREM ORGAN		[3]	008/017	Trem. Organ	09:Rotary
P-043	5TH ORGAN		[3]	048/017	5th Organ	09:Rotary
P-044	PERC. ORGAN		[2]	000/018	Organ 2	09:Rotary
P-045	OD-ROT ORGAN		[3]	000/017	Organ 1	47:Rotary Multi
P-046	THEARTER ORG		[3]	033/020	Theater Org.	26:Reverb
P-047	DIGI ORGAN		[3]	028/017	VS Organ	22:Modulation Delay
P-048	ORGAN BELL		[3]	008/101	Org Bell	09:Rotary
P-049	CHO STRINGS		[3]	016/049	St. Strings	18:Stereo Chorus
P-050	WIDE STRINGS		[3]	002/049	ChamberStr:	28:3D Delay
P-051	WIDE SYN STR		[3]	009/050	Warm Strings	20:3D Chorus
P-052	WARM STRINGS		[3]	009/051	Syn.Strings4	22:Mod Delay
P-053	FAT STRINGS		[3]	012/049	Strings+Horn	22:Mod Delay
P-054	SPIC WALTZ		[3]	016/046	Solo Spic.	23:3 Tap Delay
P-055	WIDE CHOIR		[3]	009/053	Melted Choir	28:3D Delay
P-056	DUAL CHOIR	A01	[3]	008/053	St.ChoirAahs	21:Stereo Delay
		A02	[2]	032/053	ChoirAahs 2	21:Stereo Delay
P-057	NYMAN BRASS	A01	[3]	000/062	Brass 1	03:Enhancer
		A02	[3]	016/066	AltoSax + Tp	
P-058	SAX LIVE	A01	[3]	009/067	St.Tenor Sax	30:Fb Pitch Shifter
		A02	[3]	000/068	Baritone Sax	
P-059	SFORZANDO		[3]	010/062	Brass sfz	03:Enhancer
P-060	TS WIND		[3]	003/091	Poly King	29:2 Pitch Shifter
P-061	ANALOG BRS	A01	[3]	001/063	JUNO Brass	03:Enhancer
		A02	[3]	009/063	P5 Brass	03:Enhancer
P-062	OCT BRASS	A01	[3]	016/063	Oct SynBrass	03:Enhancer
		A02	[3]	002/063	Stack Brass	03:Enhancer
P-063	M.TROMBONE		[2]	000/058	Trombone	02:Spectrum
P-064	DRIVE TENOR		[3]	000/067	Tenor Sax	35:OD → Chorus

No.	Patch Name	Part	Tone Set	CC00/PC	Tone Name	Multi-Effects Type
P-065	PM SYN LEAD		[3]	017/082	PM Lead	22:Modulation Delay
P-066	MAD CHO LEAD		[3]	008/084	Mad Lead	16:Hexa Chorus
P-067	MG SAW LEAD		[3]	031/082	MG Saw Lead	23:3 Tap Delay
P-068	OB SAW LEAD		[3]	032/082	OB Saw Lead	23:3 Tap Delay
P-069	SINE LEAD		[3]	009/081	Sine Lead	23:3 Tap Delay
P-070	BND WAH LEAD		[3]	000/066	Alto Sax	50:Guitar Multi 3
P-071	SUPER SAW		[3]	000/082	Saw Wave	55:Keyboard Multi
P-072	SILKY LEAD		[3]	032/017	70's E.Organ	55:Keyboard Multi
P-073	STEP SYNC		[3]	017/085	Fat SyncLead	11:Step Flanger
P-074	PHASER HPF		[3]	011/096	Bag Sweep	07:Phaser
P-075	PHASER STR		[3]	008/052	Air Strings	07:Phaser
P-076	PROLOGUE		[3]	003/098	Prologue 2	07:Phaser
P-077	MOD SWEEP		[3]	011/096	Bag Sweep	22:Modulation Delay
P-078	MOD HEAVEN		[3]	002/092	SC Heaven	22:Modulation Delay
P-079	RAVE SHIFT		[3]	008/098	Rave	29:2 Pitch Shifter
P-080	FB FAR OUT!		[3]	009/031	Feedback Gt2	25:Time Ctrl Delay
P-081	STEP BELL		[3]	000/093	Bowed Glass	11:Step Flanger
P-082	STEP STRINGS		[3]	002/052	JUNO Strings	11:Step Flanger
P-083	SEQ HORN PAD		[3]	002/090	Horn Pad	11:Step Flanger
P-084	THE SOFT PAD		[2]	004/090	Soft Pad	22:Modulation Delay
P-085	RATTLE PAD		[3]	004/097	Rattle Pad	22:Modulation Delay
P-086	WARM VOX PAD		[3]	001/095	Vox Pad	22:Modulation Delay
P-087	JP8 SQR PAD		[3]	002/093	JP8 Sqr Pad	19:Space D
P-088	OB SOFT PAD		[3]	004/090	OB Soft Pad	19:Space D
P-089	PAN SEQENCE		[3]	008/103	Pan Sequence	23:3 Tap Delay
P-090	ASIAN DREAM	A01	[3]	001/108	Gu Zheng	24:4 Tap Delay
		A02	[3]	000/089	Fantasia	
P-091	ER HU LEAD		[3]	008/111	Er Hu	24:4 Tap Delay
P-092	ZITHER		[3]	016/016	Zither 1	21:Stereo Delay
P-093	PSY. TABLA		[3]	016/032	Ac.Gt.Harmnx	55:KeyboardMulti
P-094	SITAR DANCE		[3]	003/105	Sitar 3	55:KeyboardMulti
P-095	SPIN BIWA		[3]	013/121	Biwa Tremolo	31:3D Auto
P-096	ARABIC LEAD		[3]	024/112	Mizmar	23:3 Tap Delay
P-097	3D BUBBLE		[3]	005/123	Bubble	31:3D Auto
P-098	3D ROTARY		[3]	000/017	Organ 1	31:3D Auto
P-099	3D DIDGERIDO		[3]	008/110	Didgeridoo	31:3D Auto
P-100	3D BAG SWEEP		[3]	011/096	Bag Sweep	20:3D Chorus
P-101	3D UFO......		[3]	014/102	UFO FX	20:3D Chorus
P-102	3D CHURCH		[3]	008/015	Church Bell	20:3D Chorus
P-103	3D IMPCT HIT		[3]	012/056	Shock Wave	28:3D Delay
P-104	3D EXCITE !!		[3]	006/127	Applause 2	28:3D Delay
P-105	LO-FI AUH		[3]	004/102	Auhbient	33:Lo-Fi 1
P-106	LO-FI TECHNO		[3]	013/102	Alternative	33:Lo-Fi 1
P-107	LO-FI ORGAN		[3]	024/017	Cheese Organ	33:Lo-Fi 1
P-108	LO-FI SQUARE		[3]	002/093	JP8 Sqr Pad	33:Lo-Fi 1
P-109	LO-FI VOX		[3]	008/086	Vox Lead	33:Lo-Fi 1
P-110	LO-FI JAZZ		[3]	---/033 (RHY)	JAZZ SET	34:Lo-Fi 2
P-111	LO-FI DUO	A01	[3]	008/004	Honky-tonk 2	34:Lo-Fi 2
		A02	[3]	000/033	Acoustic Bs.	34:Lo-Fi 2
P-112	LO-FI GND NZ		[3]	003/030	More Drive	34:Lo-Fi 2
P-113	LEAD & SEQ	A01	[3]	016/085	P5 Sync Lead	19:Space D
		A02	[3]	024/039	Arpeggio Bs	19:Space D
P-114	PIANO & BASS	A01	[3]	000/001	Piano 1	00:Thru
		A02	[3]	000/033	Acoustic Bs.	
P-115	GTR & ORGAN	A01	[3]	000/017	Organ 1	60:OD/,DS Rotary
		A02	[3]	016/028	TC FrontPick	60:OD/,DS Rotary
P-116	VIOLIN&CELLO	A01	[3]	000/041	Violin :	43:EH → Delay
		A02	[3]	000/043	Cello :	43:EH → Delay
P-117	BRS. & FLUTE	A01	[3]	001/074	Flute 2 :	
		A02	[3]	008/062	Brass 2 :	30:Fb Pitch Shifter
P-118	SYNTH SPLIT	A01	[3]	018/082	CS Saw Lead	00:Thru
		A02	[3]	001/063	JUNO Brass	
P-119	PIANO & VIBE	A01	[3]	000/001	Piano 1	26:Reverb
		A02	[3]	000/012	Vibraphone	26:Reverb
P-120	JAZZ RHYTHM	A01	[2]	000/033	AcousticBs.	00:Thru
		A02	[3]	---/033 (RHY)	JAZZ SET	
P-121	ACID PANNER		[3]	009/085	Acid Guitar1	13:Auto Pan
P-122	LFO RAVE		[3]	010/102	LFO RAVE	19:Space D
P-123	FLANGER NZ		[3]	016/123	Pink Noise	10:StereoFlanger
P-124	1 KEY STROKE		[3]	011/121	Chord Stroke	24:4 Tap Delay
P-125	INET LIVE:-)		[3]	007/127	Small Club	34:Lo-Fi 2
P-126	DOUBLE HIT	A01	[3]	017/056	Techno Hit	
		A02	[3]	016/056	Lo Fi Rave	33:Lo-Fi 1
P-127	SCRAPE SHIFT		[3]	006/121	Pick Scrape	30:Fb Pitch Shifter
P-128	EPILOGUE		[3]	016/055	VP330 Choir	30:Fb Pitch Shifter

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Preset Patch List

No.	Patch Name	Part	Tone Set	CC00/PC	Tone Name	Multi-Effects Type	Multi-Effects Switch
U-001	Power 880	A01	[3]	004/082	Big Lead	11:Step Flanger	Off
		A02	[3]	000/077	Bottle Blow		Off
		A03	[3]	000/083	Syn.Calliope		Off
		A04	[3]	017/031	Power Gt.2		On
		A05	[3]	010/102	LFO RAVE		On
		A06	[3]	010/056	Double Hit		On
U-002	Alternative 880	A01	[3]	008/086	Vox Lead	31:3D Auto	Off
		A02	[3]	013/102	Alternative		On
		A03	[3]	010/056	Double Hit		On
		A04	[3]	016/055	VP330 Choir		On
U-003	Strings Stack 1	A01	[3]	000/051	Syn.Strings1	22:Modulation Delay	On
		A02	[3]	001/090	Thick Matrix		On
		A03	[3]	004/090	OB Soft Pad		On
		A04	[3]	009/050	Warm Strings		On
U-004	LA Stack	A01	[3]	000/002	Piano 2	16:Hexa Chorus	On
		A02	[3]	024/006	Hard FM EP		On
		A03	[3]	002/089	New Age Pad		On
U-005	Dist Gtr for GR	A01	[3]	016/028	TC FrontPick	48:Guitar Multi 1	On
		A02	[3]	016/028	TC FrontPick		On
		A03	[3]	016/028	TC FrontPick		On
		A04	[3]	016/028	TC FrontPick		On
		A05	[3]	016/028	TC FrontPick		On
		A06	[3]	016/028	TC FrontPick		On
U-006	Dance Saws	A01	[3]	008/084	Mad Lead	54:Rhodes Multi	On
		A02	[3]	030/082	CS Saw		On
		A03	[3]	008/098	Rave		On
U-007	Sci-Fi Pad	A01	[3]	017/104	7th Atmos.	28:3D Delay	On
		A02	[3]	003/102	Abduction		On
		A03	[3]	002/102	50's Sci-Fi		On
U-008	Gamelan Split	A01	[3]	012/113	Jang Gu	20:3D Chorus	On
		A02	[3]	011/113	St.Gamelan		On
U-009	New Age Split 1	A01	[3]	000/093	Bowed Glass	16:Hexa Chorus	On
		A02	[3]	008/095	Horror Pad		On
		A03	[3]	009/096	Shwimmer		On
		A04	[3]	018/040	SH101 Bass 2		Off
U-010	Lo-Fi VP330	A01	[3]	016/055	VP330 Choir	33:Lo-Fi 1	On
		A02	[3]	000/049	Strings :		Off
U-011	Bass/Brass Sect.	A01	[3]	001/062	Brass ff	26:Reverb	On
		A02	[3]	000/062	Brass 1		On
		A03	[3]	000/037	Slap Bass 1		Off
U-012	Ac.Piano 880	A01	[3]	000/001	Piano 1	26:Reverb	On
		A02	[3]	008/001	Piano 1w		On
U-013	Phase Pad	A01	[3]	004/090	OB Soft Pad	07:Phaser	On
		A02	[3]	000/090	Warm Pad		On
		A03	[3]	009/090	Stack Pad		On
U-014	Lo-Fi Rave	A01	[3]	008/098	Rave	33:Lo-Fi 1	On
		A02	[3]	008/098	Rave		Off
		A03	[3]	000/062	Brass 1		On
U-015	JC Guitar	A01	[3]	009/028	JC Chorus Gt	16:Hexa Chorus	On
		A02	[3]	004/028	JC Clean Gt.		On
U-016	Prologue 880	A01	[3]	003/098	Prologue 2	20:Modulation Delay	On
		A02	[3]	001/098	Ancestral		On
		A03	[3]	000/048	Timpani		On
U-017	Techno Saw	A01	[3]	025/056	Stack Hit	55:Keyboard Multi	On
		A02	[3]	008/091	Power Stack		On
U-018	Bass/Lead	A01	[3]	010/081	KG Lead	16:Hexa Chorus	On
		A02	[3]	006/081	LM Square		On
		A03	[3]	003/081	Mellow FM		On
		A04	[3]	002/040	Modular Bass		Off
U-019	Fantasia 880	A01	[3]	000/089	Fantasia	22:Modulation Delay	On
		A02	[3]	000/101	Brightness		On
		A03	[3]	001/101	Shining Star		On
		A04	[3]	001/100	Warm Atmos		On
U-020	Distortion Pad	A01	[3]	004/090	OB Soft Pad	04:Humanizer	On
		A02	[3]	000/090	Warm Pad		On
		A03	[3]	009/090	Stack Pad		On
U-021	Euro Piano	A01	[3]	016/001	European Pf	26:Reverb	On
		A02	[3]	016/001	European Pf		On
		A03	[3]	016/001	European Pf		On
		A04	[3]	016/001	European Pf		On
		A05	[3]	016/001	European Pf		On
		A06	[3]	016/001	European Pf		On
U-022	SC Piano	A01	[3]	000/001	Piano 1	26:Reverb	On
U-023	Church Piano	A01	[3]	016/001	European Pf	26:Reverb	On
		A02	[3]	016/001	European Pf		On
		A03	[3]	032/020	Trem.Flute		On
		A04	[3]	032/020	Trem.Flute		On

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No.	Patch Name	Part	Tone Set	CC00/PC	Tone Name	Multi-Effects Type	Multi-Effects Switch
U-024	Tremolo Rhodes	A01	[2]	000/005	E.Piano 1	13:Auto Pan	On
		A02	[3]	000/005	E.Piano 1		On
		A03	[2]	000/005	E.Piano 1		On
		A04	[3]	000/005	E.Piano 1		On
U-025	Nylon Rhodes	A01	[2]	000/005	E.Piano 1	16:Hexa Chorus	On
		A02	[2]	000/006	E.Piano 2		On
		A03	[2]	000/025	Nylonstr.Gt		On
		A04	[3]	033/008	JP8 Clav. 1		Off
U-026	Guitar Rhodes	A01	[2]	000/005	E.Piano 1	16:Hexa Chorus	On
		A02	[2]	000/025	Nylonstr.Gt		On
		A03	[3]	016/016	Zither 1		On
U-027	SA Rhodes	A01	[2]	000/005	E.Piano 1	16:Hexa Chorus	On
U-028	Gamelan Rhodes	A01	[3]	000/005	E.Piano 1	16:Hexa Chorus	On
		A02	[3]	011/113	St.Gamelan		On
		A03	[3]	012/113	Jang Gu		On
U-029	123EP&456BSforGR	A01	[3]	000/005	E.Piano 1	29:2 Pitch Shifter	On
		A02	[3]	000/005	E.Piano 1		On
		A03	[3]	000/005	E.Piano 1		On
		A04	[3]	000/033	Acoustic Bs.		Off
		A05	[3]	000/033	Acoustic Bs.		Off
		A06	[3]	000/033	Acoustic Bs.		Off
U-030	Heaven Piano	A01	[3]	000/001	Piano 1	16:Hexa Chorus	On
		A02	[3]	002/092	SC Heaven		On
		A03	[3]	009/055	Silent Night		On
U-031	Heaven EP	A01	[3]	016/005	FM+SA EP	19:Space D	On
		A02	[3]	002/092	SC Heaven		On
		A03	[3]	001/091	80's PolySyn		On
U-032	Heaven Key 1	A01	[3]	004/100	HollowReleas	16:Hexa Chorus	On
		A02	[3]	007/100	Invisible		On
		A03	[3]	000/086	Solo Vox		On
U-033	Heaven Key 2	A01	[3]	002/092	SC Heaven	16:Hexa Chorus	On
		A02	[3]	016/016	Zither 1		On
		A03	[3]	004/028	JC Clean Gt.		On
		A04	[3]	009/055	Silent Night		On
U-034	Air Heaven	A01	[3]	017/099	Air Bells	07:Phaser	Off
		A02	[3]	001/090	Thick Matrix		On
		A03	[3]	009/091	Octave Stack		On
		A04	[3]	003/089	Bell Heaven		Off
U-035	Pls Phaser Pad	A01	[3]	017/099	Air Bells	07:Phaser	Off
		A02	[3]	001/090	Thick Matrix		On
		A03	[3]	002/101	OB Stab		On
U-036	Bell Pad 880	A01	[3]	004/090	OB Soft Pad	16:Hexa Chorus	On
		A02	[3]	000/090	Warm Pad		On
		A03	[3]	003/089	Bell Heaven		On
U-037	Holy Night	A01	[3]	009/055	Silent Night	22:Modulation Delay	On
		A02	[3]	009/055	Silent Night		On
		A03	[3]	016/074	Tron Flute		On
		A04	[1]	000/011	Music Box		On
U-038	Air Bell Pad 1	A01	[3]	017/099	Air Bells	07:Phaser	Off
		A02	[3]	001/090	Thick Matrix		On
		A03	[3]	003/100	Harpvox		On
U-039	Air Bell Pad 2	A01	[3]	017/099	Air Bells	07:Phaser	Off
		A02	[3]	025/017	D-50 Organ		On
		A03	[3]	003/100	Harpvox		On
		A04	[3]	003/089	Bell Heaven		Off
U-040	Bass/Bell Pad	A01	[3]	008/076	Kawala	26:Reverb	On
		A02	[3]	008/006	Detuned EP 2		On
		A03	[3]	002/089	New Age Pad		On
		A04	[3]	000/036	Fretless Bs.		Off
U-041	Pad/Bell	A01	[3]	005/099	GlochenChime	16:Hexa Chorus	On
		A02	[3]	008/099	Vibra Bells		On
		A03	[3]	009/099	Digi Bells		On
		A04	[3]	009/096	Shwimmer		On
		A05	[3]	001/098	Ancestral		On
U-042	Air Bell	A01	[3]	017/099	Air Bells	16:Hexa Chorus	On
		A02	[3]	004/100	HollowReleas		On
		A03	[3]	000/001	Piano 1		On
U-043	3D Carillon	A01	[3]	008/015	Church Bell	28:3D Delay	On
		A02	[3]	009/015	Carillon		On
		A03	[3]	000/015	Tubular-Bell		Off
U-044	Dist.Organ Split	A01	[3]	017/019	Rock Organ 1	47:Rotary Multi	On
		A02	[3]	009/018	Octave Organ		Off
		A03	[3]	017/031	Power Gt.2		Off
		A04	[3]	040/017	Organ Bass		Off
U-045	Church Organ 880	A01	[3]	000/020	Church Org.1	26:Reverb	On
		A02	[3]	008/020	Church Org.2		On
		A03	[3]	016/020	Church Org.3		On

No.	Patch Name	Part	Tone Set	CC00/PC	Tone Name	Multi-Effects Type	Multi-Effects Switch
U-046	Church Org/Choir	A01	[3]	000/020	Church Org.1	22:Modulation Delay	Off
		A02	[3]	000/020	Church Org.1		Off
		A03	[3]	010/053	Church Choir		On
		A04	[3]	010/053	Church Choir		On
U-047	Compressor Clav.	A01	[3]	024/008	Clav.o	14:Compressor	On
		A02	[3]	024/008	Clav.o		On
		A03	[3]	024/008	Clav.o		On
		A04	[3]	024/008	Clav.o		On
		A05	[3]	024/008	Clav.o		On
		A06	[3]	024/008	Clav.o		On
U-048	Marimba 880	A01	[3]	000/013	Marimba	26:Reverb	On
		A02	[3]	024/013	Log drum		On
U-049	Accordion 1	A01	[3]	000/022	Accordion Fr	26:Reverb	On
		A02	[3]	000/022	Accordion Fr		On
U-050	Accordion 2	A01	[3]	008/022	Accordion It	26:Reverb	On
		A02	[3]	008/022	Accordion It		On
U-051	Ac.Gtr&Harmonica	A01	[3]	000/023	Harmonica	33:Lo-Fi 1	On
		A02	[3]	032/026	Steel Gt.2		Off
U-052	Ac.Gtr w/Chorus	A01	[3]	032/026	Steel Gt.2	16:Hexa Chorus	On
		A02	[3]	000/026	Steel-str.Gt		On
U-053	3D Ac.Guitar	A01	[3]	032/026	Steel Gt.2	28:3D Delay	On
		A02	[3]	000/026	Steel-str.Gt		On
U-054	Ac.Steel Guitar	A01	[3]	032/026	Steel Gt.2	16:Hexa Chorus	On
		A02	[3]	016/032	Ac.Gt.Harmnx		On
		A03	[3]	000/121	Gt.FretNoise		On
U-055	Steel Ensemble	A01	[3]	032/026	Steel Gt.2	28:3D Delay	On
		A02	[3]	000/026	Steel-str.Gt		On
		A03	[3]	024/016	Dulcimer		Off
		A04	[3]	008/016	Cimbalom		Off
		A05	[3]	016/016	Zither 1		Off
U-056	Feedback JC	A01	[3]	009/028	JC Chorus Gt	30:Fb Pitch Shifter	On
		A02	[3]	004/028	JC Clean Gt.		On
U-057	Broken Guitar	A01	[3]	009/028	JC Chorus Gt	33:Lo-Fi 1	On
		A02	[3]	009/028	JC Chorus Gt		On
U-058	Bass/Jazz Gtr	A01	[3]	000/035	Picked Bass	26:Reverb	Off
		A02	[3]	016/028	TC FrontPick		On
U-059	Bass/Dist.Gtr	A01	[3]	003/031	Distortion:	48:Guitar Multi 1	On
		A02	[3]	001/035	Picked Bass2		Off
U-060	EthnicEnsemble 1	A01	[3]	008/108	Taisho Koto	22:Modulation Delay	On
		A02	[3]	002/092	SC Heaven		On
		A03	[3]	000/108	Koto		On
		A04	[3]	016/108	Kanoon		Off
U-061	EthnicEnsemble 2	A01	[3]	000/108	Koto	00:Thru	Off
		A02	[2]	016/108	Kanoon		Off
		A03	[3]	008/106	Rabab		Off
		A04	[3]	016/106	Gopichant		Off
U-062	Afro Split	A01	[3]	016/116	Angklung	00:Thru	Off
		A02	[3]	000/109	Kalimba		Off
		A03	[3]	008/109	Sanza		Off
U-063	Strings Sect. 1	A01	[3]	000/049	Strings :	26:Reverb	On
		A02	[3]	003/049	Cello sect.		On
U-064	Strings Sect. 2	A01	[3]	016/049	St. Strings	26:Reverb	On
		A02	[3]	003/049	Cello sect.		On
U-065	Stack Strings 2	A01	[1]	000/051	SynStrings1	22:Modulation Delay	On
		A02	[3]	008/104	Dream Pad		On
		A03	[3]	004/090	OB Soft Pad		On
U-066	JP Strings	A01	[3]	000/051	Syn.Strings1	16:Hexa Chorus	On
		A02	[3]	003/051	JP Strings		On
U-067	OB Strings	A01	[3]	000/051	Syn.Strings1	22:Modulation Delay	On
		A02	[3]	001/051	OB Strings		On
		A03	[3]	026/082	OB Saw 1		On
U-068	Strings Machine	A01	[3]	004/103	Big Panner	19:Space D	On
		A02	[3]	001/051	OB Strings		On
		A03	[3]	004/090	OB Soft Pad		On
U-069	Phase Strings 1	A01	[3]	004/103	Big Panner	07:Phaser	On
		A02	[3]	001/051	OB Strings		On
		A03	[3]	004/090	OB Soft Pad		On
U-070	Phase Strings 2	A01	[3]	000/051	Syn.Strings1	07:Phaser	On
		A02	[3]	001/090	Thick Matrix		On
		A03	[3]	004/090	OB Soft Pad		On
		A04	[3]	009/050	Warm Strings		On
U-071	Lo-Fi Strings 1	A01	[3]	025/051	Noiz Strings	33:Lo-Fi 1	On
		A02	[3]	025/051	Noiz Strings		On
		A03	[3]	025/051	Noiz Strings		On
		A04	[3]	025/051	Noiz Strings		On
		A05	[3]	025/051	Noiz Strings		On
		A06	[3]	025/051	Noiz Strings		On

No.	Patch Name	Part	Tone Set	CC00/PC	Tone Name	Multi-Effects Type	Multi-Effects Switch
U-072	Lo-Fi Strings 2	A01	[3]	024/051	Tron Strings	33:Lo-Fi 1	On
		A02	[3]	024/051	Tron Strings		On
		A03	[3]	024/051	Tron Strings		On
		A04	[3]	024/051	Tron Strings		On
		A05	[3]	024/051	Tron Strings		On
		A06	[3]	024/051	Tron Strings		On
U-073	Lo-Fi Rain Str	A01	[3]	025/051	Noiz Strings	03:Enhancer	On
		A02	[3]	025/051	Noiz Strings		On
		A03	[3]	001/123	Rain		Off
		A04	[3]	004/123	Stream		Off
U-074	Techno Pizz	A01	[3]	002/046	Chamber Pizz	07:Phaser	Off
		A02	[3]	009/039	TB303 Bass		On
		A03	[3]	024/013	Log drum		Off
		A04	[3]	000/047	Harp		Off
U-075	Syn Vox 880	A01	[3]	008/055	Syn.Voice	22:Modulation Delay	On
		A02	[3]	009/055	Silent Night		On
U-076	Choir 880 1	A01	[3]	008/053	St.ChoirAahs	26:Reverb	On
		A02	[3]	032/053	Chorus Aahs		On
U-077	Choir 880 2	A01	[3]	016/053	Chorus Hahs	22:Modulation Delay	On
		A02	[3]	032/053	Chorus Aahs		On
U-078	Dah Vox	A01	[3]	008/054	Voice Dahs	22:Modulation Delay	On
		A02	[3]	032/053	Chorus Aahs		On
U-079	Brass Sect 880 1	A01	[3]	002/062	Bones Sect.	26:Reverb	On
		A02	[3]	001/061	Fr.Horn 2		On
		A03	[3]	001/059	Tuba 2		On
U-080	Brass Sect 880 2	A01	[3]	000/062	Brass 1	03:Enhancer	On
		A02	[3]	002/062	Bones Sect.		On
		A03	[3]	001/067	Tenor Sax :		On
		A04	[3]	000/068	Baritone Sax		On
		A05	[3]	001/062	Brass ff		On
U-081	FrHrn Sect 880	A01	[3]	016/061	Synth Horn	26:Reverb	On
		A02	[3]	000/061	French Horns		On
		A03	[3]	002/061	Horn + Orche		On
U-082	Syn Brass 880 1	A01	[3]	000/064	Synth Brass2	16:Hexa Chorus	On
		A02	[3]	009/064	OB Brass		On
		A03	[3]	008/064	SynBrass sfz		On
U-083	Syn Brass 880 2	A01	[3]	003/063	SH-5 Brass	03:Enhancer	On
		A02	[3]	008/100	Pulsey Key		On
		A03	[3]	003/091	Poly King		On
U-084	OB Stack	A01	[3]	004/103	Big Panner	16:Hexa Chorus	On
		A02	[3]	001/051	OB Strings		On
		A03	[3]	004/090	OB Soft Pad		On
		A04	[3]	009/064	OB Brass		Off
U-085	Poly Synth 880 1	A01	[3]	003/091	Poly King	16:Hexa Chorus	On
		A02	[3]	000/091	Polysynth		On
U-086	Poly Synth 880 2	A01	[3]	003/091	Poly King	16:Hexa Chorus	On
		A02	[3]	000/091	Polysynth		On
		A03	[3]	000/063	Synth Brass1		Off
U-087	Dance Saw 2	A01	[3]	008/084	Mad Lead	41:EH -> Chorus	On
		A02	[3]	030/082	CS Saw		On
U-088	Dance Saw 3	A01	[3]	008/084	Mad Lead	22:Modulation Delay	On
		A02	[3]	030/082	CS Saw		On
		A03	[3]	008/098	Rave		On
U-089	Lo-Fi Rave 2	A01	[3]	008/098	Rave	33:Lo-Fi 1	On
		A02	[3]	008/098	Rave		Off
		A03	[3]	008/086	Vox Lead		On
U-090	Techno Split	A01	[3]	011/091	Techno Stack	07:Phaser	On
		A02	[3]	008/091	Power Stack		On
		A03	[3]	043/082	Cheese Saw 1		On
		A04	[3]	008/040	Beef FM Bass		Off
U-091	Lo-Fi Saw	A01	[3]	001/082	OB2 Saw	33:Lo-Fi 1	On
		A02	[3]	000/082	Saw Wave		On
		A03	[3]	024/082	MG Saw 1		Off
U-092	Phase Saw	A01	[3]	001/082	OB2 Saw	07:Phaser	On
		A02	[3]	000/082	Saw Wave		On
		A03	[3]	024/082	MG Saw 1		Off
U-093	Sync Lead 880	A01	[3]	016/085	P5 Sync Lead	00:Thru	Off
		A02	[3]	017/085	Fat SyncLead		Off
		A03	[3]	024/082	MG Saw 1		Off
U-094	Uni Saw Lead	A01	[3]	007/082	LA Saw	16:Hexa Chorus	On
		A02	[3]	033/082	P5 Saw Lead		On
		A03	[3]	032/082	OB Saw Lead		On
U-095	FM Split	A01	[3]	004/081	CC Solo	14:Compressor	Off
		A02	[3]	003/081	Mellow FM		Off
		A03	[3]	008/038	FM Slap		On
U-096	Bass/Lead 2	A01	[3]	003/088	JUNO Rave	07:Phaser	On
		A02	[3]	021/040	Spike Bass		Off

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No.	Patch Name	Part	Tone Set	CC00/PC	Tone Name	Multi-Effects Type	Multi-Effects Switch
U-097	Bass/Lead 3	A01	[3]	007/082	LA Saw	14:Compressor	Off
		A02	[3]	002/082	Pulse Saw		Off
		A03	[3]	000/041	Violin :		Off
		A04	[3]	018/040	SH101 Bass 2		On
U-098	Flute 880	A01	[3]	001/074	Flute 2 :	26:Reverb	On
		A02	[3]	001/074	Flute 2 :		On
		A03	[3]	001/074	Flute 2 :		On
		A04	[3]	001/074	Flute 2 :		On
		A05	[3]	001/074	Flute 2 :		On
		A06	[3]	001/074	Flute 2 :		On
U-099	3D Pipe	A01	[3]	001/074	Flute 2 :	28:3D Delay	On
		A02	[3]	000/055	SynVox		On
		A03	[3]	000/077	Bottle Blow		On
U-100	New Age Pipe	A01	[3]	008/076	Kawala	10:Stereo Flanger	Off
		A02	[3]	000/076	Pan Flute		Off
		A03	[3]	000/075	Recorder		Off
		A04	[3]	016/076	Zampona		Off
		A05	[3]	000/096	Sweep Pad		On
		A06	[3]	009/104	Silky Pad		On
U-101	Soprano Sax 880	A01	[3]	008/065	Soprano Exp.	26:Reverb	On
		A02	[3]	008/065	Soprano Exp.		On
		A03	[3]	008/065	Soprano Exp.		On
		A04	[3]	008/065	Soprano Exp.		On
		A05	[3]	008/065	Soprano Exp.		On
		A06	[3]	008/065	Soprano Exp.		On
U-102	Bass/Tenor Sax	A01	[3]	008/067	BreathyTn.:	26:Reverb	On
		A02	[3]	000/034	Fingered Bs.		Off
U-103	Trumpet 880	A01	[3]	002/057	Trumpet :	01:Stereo-EQ	On
		A02	[3]	002/057	Trumpet :		On
		A03	[3]	002/057	Trumpet :		On
		A04	[3]	002/057	Trumpet :		On
		A05	[3]	002/057	Trumpet :		On
		A06	[3]	002/057	Trumpet :		On
U-104	Bag Pipe 880	A01	[3]	000/110	Bagpipe	29:2 Pitch Shifter	On
		A02	[3]	000/110	Bagpipe		On
		A03	[3]	000/110	Bagpipe		On
		A04	[3]	000/110	Bagpipe		On
		A05	[3]	000/110	Bagpipe		On
		A06	[3]	000/110	Bagpipe		On
U-105	Square Pad	A01	[3]	004/090	OB Soft Pad	16:Hexa Chorus	On
		A02	[3]	000/090	Warm Pad		On
		A03	[3]	009/090	Stack Pad		On
		A04	[3]	006/081	LM Square		Off
		A05	[3]	006/081	LM Square		Off
U-106	Slow Phase Pad	A01	[2]	000/091	Polysynth	07:Phaser	On
		A02	[3]	040/082	SequenceSaw1		On
		A03	[1]	000/076	Pan Flute		On
		A04	[3]	001/102	Goblinson		On
U-107	Rotary Pad	A01	[3]	033/020	Theater Org.	09:Rotary	On
		A02	[3]	024/017	Cheese Organ		On
		A03	[3]	016/051	High Strings		On
		A04	[3]	000/096	Sweep Pad		Off
U-108	D-50 Pad	A01	[3]	025/017	D-50 Organ	22:Modulation Delay	On
		A02	[3]	000/076	Pan Flute		On
		A03	[3]	000/055	SynVox		On
U-109	Slow Glass Pad	A01	[3]	000/093	Bowed Glass	28:3D Delay	On
		A02	[3]	000/093	Bowed Glass		On
		A03	[3]	000/001	Piano 1		On
		A04	[3]	008/012	Vibraphone w		On
U-110	5th Str Pad	A01	[3]	003/105	Sitar 3	07:Phaser	On
		A02	[3]	003/105	Sitar 3		On
		A03	[3]	016/005	FM+SA EP		Off
		A04	[3]	016/005	FM+SA EP		Off
		A05	[3]	033/053	Male Aah+Str		Off
U-111	Syn Hrn Pad	A01	[3]	004/090	OB Soft Pad	16:Hexa Chorus	On
		A02	[3]	000/090	Warm Pad		On
		A03	[3]	002/090	Horn Pad		On
U-112	Ancestral 880	A01	[3]	001/098	Ancestral	22:Modulation Delay	On
		A02	[3]	004/098	Hols Strings		On
U-113	New Age Split 2	A01	[3]	001/098	Ancestral	20:3D Chorus	On
		A02	[3]	011/096	Bag Sweep		On
		A03	[3]	009/096	Shwimmer		On
		A04	[3]	021/040	Spike Bass		Off
U-114	Space Pulse	A01	[3]	018/104	Galaxy Way	12:Tremolo	Off
		A02	[2]	000/104	Star Theme		Off
		A03	[3]	043/082	Cheese Saw 1		On
		A04	[1]	000/104	Star Theme		On

No.	Patch Name	Part	Tone Set	CC00/PC	Tone Name	Multi-Effects Type	Multi-Effects Switch
U-115	Step Pad 880	A01	[3]	004/090	OB Soft Pad	11:Step Flanger	On
		A02	[3]	000/090	Warm Pad		On
		A03	[3]	009/090	Stack Pad		On
U-116	Metal Sweep	A01	[3]	000/094	Metal Pad	10:Stereo Flanger	On
		A02	[3]	003/093	7thBelPad		On
		A03	[3]	000/096	Sweep Pad		On
U-117	Metal 7th Pad	A01	[3]	000/094	Metal Pad	16:Hexa Chorus	On
		A02	[3]	000/094	Metal Pad		On
		A03	[3]	003/089	Bell Heaven		On
U-118	Lo-Fi AuhAuh	A01	[3]	010/092	AuhAuh	34:Lo-Fi 2	On
		A02	[3]	000/093	Bowed Glass		On
		A03	[3]	008/091	Power Stack		On
U-119	Lo-Fi Rattle Pad	A01	[3]	004/097	Rattle Pad	33:Lo-Fi 1	On
		A02	[3]	004/097	Rattle Pad		Off
U-120	Low Sweep	A01	[3]	014/102	UFO FX	07:Phaser	On
		A02	[3]	003/098	Prologue 2		Off
		A03	[3]	009/104	Silky Pad		Off
		A04	[3]	017/104	7th Atmos.		On
U-121	Explosion	A01	[2]	005/123	Bubble	20:3D Chorus	On
		A02	[2]	002/102	50's Sci-Fi		On
		A03	[1]	000/102	Goblin		On
		A04	[3]	004/128	Eruption		On
U-122	IMPACT !	A01	[3]	008/056	Impact hit	20:3D Chorus	On
		A02	[3]	017/056	Techno Hit		On
		A03	[3]	002/102	50's Sci-Fi		On
		A04	[3]	015/102	Gargle Man		On
		A05	[3]	016/104	New Century		On
U-123	Techno Hit 880 1	A01	[3]	016/056	Lo Fi Rave	33:Lo-Fi 1	Off
		A02	[3]	017/056	Techno Hit		Off
		A03	[3]	008/056	Impact Hit		Off
		A04	[3]	008/098	Rave		On
		A05	[3]	010/102	LFO RAVE		On
U-124	Techno Hit 880 2	A01	[3]	009/056	Philly Hit	00:Thru	Off
		A02	[3]	017/056	Techno Hit		Off
		A03	[3]	018/056	Dist. Hit		Off
		A04	[3]	019/056	Bam Hit		Off
		A05	[3]	020/056	Bit hit		Off
U-125	Techno Hit 880 3	A01	[3]	009/056	Philly Hit	33:Lo-Fi 1	On
		A02	[3]	017/056	Techno Hit		On
		A03	[3]	018/056	Dist. Hit		On
		A04	[3]	019/056	Bam Hit		On
		A05	[3]	020/056	Bit hit		On
U-126	Techno Hit 880 4	A01	[3]	025/056	Stack hit	00:Thru	Off
		A02	[3]	024/056	Strings Hit		Off
		A03	[3]	023/056	Rave hit		Off
		A04	[3]	022/056	Technorg hit		Off
		A05	[3]	021/056	Bim hit		Off
U-127	Techno Hit 880 5	A01	[3]	025/056	Stack hit	33:Lo-Fi 1	On
		A02	[3]	024/056	Strings Hit		On
		A03	[3]	023/056	Rave hit		On
		A04	[3]	022/056	Technorg hit		On
		A05	[3]	021/056	Bim hit		On
U-128	For Manual	A01	[3]	004/028	JC CLean Gt.	07:Phaser	On
		A02	[3]	000/001	Piano 1		On

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Preset Performance List

No.	Performance Name	Part	Tone Set	CC00/PC	Tone Name	Multi-Effects Type	Multi-Effects Switch
P-1	Pop Set	A01	[3]	000/001	Piano 1	37:OD → Delay	Off
		A02	[3]	000/034	Fingered Bs.		Off
		A03	[2]	000/005	E.Piano 1		Off
		A04	[3]	004/028	JC Clean Gt.		Off
		A05	[3]	001/031	Dist. Gt2 :		On
		A06	[3]	000/049	Strings :		Off
		A07	[3]	004/090	OB Soft Pad		Off
		A08	[3]	016/019	Rotary Org.S		Off
		A09	[3]	006/082	GR-300		Off
		A10	[3]	---/0018(RHY)	STANDARD 1		Off
		A11	[3]	000/077	Bottle Blow		Off
		A12	[3]	001/062	Brass ff		Off
		A13	[3]	000/066	Alto Sax		Off
		A14	[3]	002/057	Trumpet :		Off
		A15	[3]	000/056	OrchestraHit		Off
		A16	[3]	018/104	Galaxy Way		Off
		B01	[3]	000/005	E.Piano 1		Off
		B02	[3]	000/038	Slap Bass 2		Off
		B03	[3]	008/006	Detuned EP 2		Off
		B04	[3]	000/026	Steel-str.Gt		Off
		B05	[3]	003/030	More Drive		On
		B06	[3]	008/049	Orchestra		Off
		B07	[3]	032/053	Chorus Aahs		Off
		B08	[3]	024/019	Rotary Org.F		Off
		B09	[3]	006/081	LM Square		Off
		B10	[3]	---/009(RHY)	ROOM		Off
		B11	[3]	024/082	MG Saw 1		Off
		B12	[3]	003/063	SH-5 Brass		Off
		B13	[3]	001/067	Tenor Sax :		Off
		B14	[3]	000/060	MutedTrumpet		Off
		B15	[3]	008/056	Impact Hit		Off
		B16	[3]	017/104	7th Atmos.		Off
P-2	Orchestra Set	A01	[3]	032/049	Oct Strings1	00:Thru	Off
		A02	[3]	008/049	Orchestra		Off
		A03	[3]	009/049	Orchestra 2		Off
		A04	[3]	000/046	PizzicatoStr		Off
		A05	[2]	000/041	Violin		Off
		A06	[3]	001/043	Cello Atk.:		Off
		A07	[3]	000/047	Harp		Off
		A08	[3]	001 059	Tuba 2		Off
		A09	[3]	000/074	Flute		Off
		A10	[3]	---/049(RHY)	ORCHESTRA		Off
		A11	[3]	000/072	Clarinet		Off
		A12	[3]	008/069	Oboe Exp.		Off
		A13	[2]	000/057	Trumpet		Off
		A14	[3]	000/061	French Horns		Off
		A15	[3]	000/062	Brass 1		Off
		A16	[3]	002/062	Bones Sect.		Off
		B01	[3]	016/049	St. Strings		Off
		B02	[3]	010/049	Tremolo Orch		Off
		B03	[3]	002/049	ChamberStr:		Off
		B04	[3]	002/046	Chamber Pizz		Off
		B05	[3]	000/042	Viola :		Off
		B06	[3]	000/044	Contrabass		Off
		B07	[3]	000/015	Tubular-bell		Off
		B08	[3]	008/058	Bs. Trombone		Off
		B09	[3]	000/073	Piccolo		Off
		B10	[3]	---/050(RHY)	ETHNIC		Off
		B11	[3]	008/072	Bs Clarinet		Off
		B12	[3]	000/071	Bassoon		Off
		B13	[3]	000/070	English Horn		Off
		B14	[3]	008/060	Muted Horns		Off
		B15	[3]	001/057	Trumpet 2		Off
		B16	[3]	011/056	Perc. Hit		Off

No.	Performance Name	Part	Tone Set	CC00/PC	Tone Name	Multi-Effects Type	Multi-Effects Switch
P-3	Rock Set	A01	[3]	016/019	Rotary Org.S	37:OD → Delay	Off
		A02	[3]	004/034	Rock Bass		Off
		A03	[3]	016/019	Rotary Org.S		On
		A04	[3]	024/031	Rock Rhythm		Off
		A05	[3]	008/031	Feedback Gt.		On
		A06	[3]	001/049	Bright Str:		Off
		A07	[3]	003/091	Poly King		Off
		A08	[3]	009/064	OB Brass		Off
		A09	[3]	018/085	Rock Lead		Off
		A10	[3]	---/017(RHY)	POWER		Off
		A11	[3]	000/077	Bottle Blow		Off
		A12	[3]	001/062	Brass ff		Off
		A13	[3]	000/068	Baritone Sax		Off
		A14	[3]	000/067	Tenor Sax		Off
		A15	[3]	008/056	Impact Hit		Off
		A16	[3]	003/098	Prologue 2		Off
		B01	[3]	000/005	E.Piano 1		Off
		B02	[3]	002/035	Picked Bass3		Off
		B03	[3]	024/019	Rotary Org.F		Off
		B04	[3]	009/031	Feedback Gt2		On
		B05	[3]	016/031	Power Guitar		On
		B06	[3]	024/051	Tron Strings		Off
		B07	[3]	001/091	80's PolySyn		Off
		B08	[3]	000/064	Synth Brass2		Off
		B09	[3]	016/085	P5 Sync Lead		Off
		B10	[3]	---/009(RHY)	ROOM		Off
		B11	[3]	000/083	Syn.Calliope		Off
		B12	[3]	001/082	OB2 Saw		Off
		B13	[3]	002/101	OB Stab		Off
		B14	[3]	009/066	Grow Sax		Off
		B15	[3]	010/056	Double Hit		Off
		B16	[3]	000/098	Soundtrack		Off
P-4	Jazz Set	A01	[3]	000/001	Piano 1	09:Rotary	Off
		A02	[2]	000/033	AcousticBs.		Off
		A03	[3]	000/027	Jazz Gt.		Off
		A04	[3]	009/030	LP OverDrv:		Off
		A05	[3]	008/057	Flugel Horn		Off
		A06	[2]	000/057	Trumpet		Off
		A07	[3]	000/058	Trombone		Off
		A08	[3]	008/067	BreathyTn.:		Off
		A09	[3]	000/065	Soprano Sax		Off
		A10	[3]	---/041(RHY)	BRUSH		Off
		A11	[3]	001/074	Flute 2 :		Off
		A12	[3]	004/081	CC Solo		Off
		A13	[3]	028/082	D-50 Saw		Off
		A14	[3]	000/005	E.Piano 1		Off
		A15	[3]	000/012	Vibraphone		Off
		A16	[3]	001/018	Jazz Organ		On
		B01	[3]	016/001	European Pf		Off
		B02	[3]	000/033	Acoustic Bs.		Off
		B03	[3]	016/028	TC FrontPick		Off
		B04	[3]	000/031	DistortionGt		Off
		B05	[3]	000/025	Nylon-str.Gt		Off
		B06	[3]	000/060	MutedTrumpet		Off
		B07	[3]	001/058	Trombone 2		Off
		B08	[3]	000/067	Tenor Sax		Off
		B09	[3]	008/066	AltoSax Exp.		Off
		B10	[3]	---/033(RHY)	JAZZ		Off
		B11	[3]	000/073	Piccolo		Off
		B12	[3]	000/023	Harmonica		Off
		B13	[3]	025/082	MG Saw 2		Off
		B14	[2]	000/005	E.Piano 1		Off
		B15	[3]	000/013	Marimba		Off
		B16	[3]	001/017	Organ 101		On

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Preset Performance List

No.	Performance Name	Part	Tone Set	CC00/PC	Tone Name	Multi-Effects Type	Multi-Effects Switch
P-5	Hip Hop Set	A01	[3]	000/003	Piano 3	33:Lo-Fi 1	Off
		A02	[3]	017/040	SH101 Bass 1		Off
		A03	[3]	009/056	Philly Hit		Off
		A04	[3]	018/017	60's Organ 3		Off
		A05	[3]	002/030	Overdrive 3		On
		A06	[3]	024/051	Tron Strings		On
		A07	[3]	000/005	E.Piano 1		Off
		A08	[3]	019/056	Bam Hit		Off
		A09	[3]	003/081	Mellow FM		Off
		A10	[3]	---/010(RHY)	HIP HOP		Off
		A11	[3]	042/082	Reso Saw		Off
		A12	[3]	043/082	Cheese Saw 1		Off
		A13	[3]	008/086	Vox Lead		Off
		A14	[3]	000/120	Reverse Cym.		Off
		A15	[3]	009/100	Noise Piano		On
		A16	[3]	010/092	AuhAuh		Off
		B01	[3]	008/004	Honky-tonk 2		Off
		B02	[3]	018/040	SH101 Bass 2		Off
		B03	[3]	020/056	Bit Hit		Off
		B04	[3]	026/017	JUNO Orgna		On
		B05	[3]	003/030	More Drive		On
		B06	[3]	017/055	Vinyl Choir		On
		B07	[1]	000/005	E.Piano 1		Off
		B08	[3]	021/056	Bim Hit		Off
		B09	[3]	024/081	Pulse Lead		Off
		B10	[3]	---/027(RHY)	DANCE		Off
		B11	[3]	008/084	Mad Lead		Off
		B12	[3]	010/085	Acid Guitar2		Off
		B13	[3]	020/085	Dirty Sync		Off
		B14	[3]	008/008	Comp Clav.		Off
		B15	[3]	000/101	Brightness		On
		B16	[3]	010/125	Phono Noise		Off
P-6	Techno Set	A01	[3]	002/046	Chamber Pizz	07:Phaser	Off
		A02	[3]	016/039	Reso SH Bass		Off
		A03	[3]	013/039	TB303 Saw Bs		Off
		A04	[3]	008/091	Power Stack		Off
		A05	[3]	024/081	Pulse Lead		Off
		A06	[3]	001/090	Thick Matrix		On
		A07	[3]	000/062	Brass 1		Off
		A08	[3]	008/100	Pulsey Key		Off
		A09	[3]	041/082	SequenceSaw2		Off
		A10	[3]	---/012(RHY)	TECHNO		Off
		A11	[3]	003/088	JUNO Rave		Off
		A12	[3]	003/087	5th Ana.Clav		Off
		A13	[3]	024/085	JUNO Sub Osc		Off
		A14	[3]	012/102	LFO Techno		On
		A15	[3]	005/102	LFO Pad		Off
		A16	[3]	001/125	Telephone 2		Off
		B01	[3]	016/002	Dance Piano		Off
		B02	[3]	022/040	House Bass:		Off
		B03	[3]	032/018	Perc. Organ		Off
		B04	[3]	002/091	Polysynth 2		Off
		B05	[3]	008/100	Pulsey Key		Off
		B06	[3]	025/056	Stack Hit		On
		B07	[3]	025/056	Stack Hit		Off
		B08	[3]	017/056	Techno Hit		Off
		B09	[3]	030/082	CS Saw		Off
		B10	[3]	---/031(RHY)	TR-909		Off
		B11	[3]	002/052	JUNO Strings		Off
		B12	[3]	009/096	Shwimmer		Off
		B13	[3]	000/096	Sweep Pad		Off
		B14	[3]	008/086	Vox Lead		Off
		B15	[3]	011/102	LFO Horror		On
		B16	[3]	009/102	Falling Down		On

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No.	Performance Name	Part	Tone Set	CC00/PC	Tone Name	Multi-Effects Type	Multi-Effects Switch
P-7	Ethnic Set	A01	[3]	016/016	Zither 1	00:Thru	Off
		A02	[3]	000/105	Sitar		Off
		A03	[3]	024/106	Oud		Off
		A04	[3]	016/106	Gopichant		Off
		A05	[3]	032/106	Pi Pa		Off
		A06	[3]	016/108	Kanoon		Off
		A07	[3]	001/108	Gu Zheng		Off
		A08	[3]	000/112	Shanai		Off
		A09	[3]	024/112	Mizmar		Off
		A10	[3]	---/053(RHY)	ASIA		Off
		A11	[3]	008/113	Bonang		Off
		A12	[3]	009/113	Gender		Off
		A13	[3]	010/113	Gamelan Gong		Off
		A14	[3]	008/111	Er Hu		Off
		A15	[3]	032/112	Suona 1		Off
		A16	[3]	008/112	Pungi		Off
		B01	[3]	000/107	Shamisen		Off
		B02	[3]	000/108	Koto		Off
		B03	[3]	016/112	Hichiriki		Off
		B04	[3]	016/116	Angklung		Off
		B05	[3]	000/109	Kalimba		Off
		B06	[3]	008/109	Sanza		Off
		B07	[3]	000/106	Banjo		Off
		B08	[3]	008/108	Taisho Koto		Off
		B09	[3]	008/076	Kawala		Off
		B10	[3]	---/050(RHY)	ETHNIC		Off
		B11	[3]	001/078	Shakuhachi:		Off
		B12	[3]	016/076	Zampona		Off
		B13	[3]	016/113	RAMA Cymbal		Off
		B14	[3]	009/111	Gao Hu		Off
		B15	[3]	000/110	Bagpipe		Off
		B16	[3]	008/110	Didgeridoo		Off
P-8	SEQ Template	A01	[3]	000/001	Piano 1	00:Thru	Off
		A02	[3]	000/034	Fingered Bs.		Off
		A03	[3]	000/001	Piano 1		Off
		A04	[3]	000/001	Piano 1		Off
		A05	[3]	000/001	Piano 1		Off
		A06	[3]	000/001	Piano 1		Off
		A07	[3]	000/001	Piano 1		Off
		A08	[3]	000/001	Piano 1		Off
		A09	[3]	000/001	Piano 1		Off
		A10	[3]	---/001(RHY)	STANDARD 1		Off
		A11	[3]	000/001	Piano 1		Off
		A12	[3]	000/001	Piano 1		Off
		A13	[3]	000/001	Piano 1		Off
		A14	[3]	000/001	Piano 1		Off
		A15	[3]	000/001	Piano 1		Off
		A16	[3]	000/001	Piano 1		Off
		B01	[3]	000/001	Piano 1		Off
		B02	[3]	002/034	Jazz Bass		Off
		B03	[3]	000/001	Piano 1		Off
		B04	[3]	000/001	Piano 1		Off
		B05	[3]	000/001	Piano 1		Off
		B06	[3]	000/001	Piano 1		Off
		B07	[3]	000/001	Piano 1		Off
		B08	[3]	000/001	Piano 1		Off
		B09	[3]	000/001	Piano 1		Off
		B10	[3]	---/009(RHY)	ROOM		Off
		B11	[3]	000/001	Piano 1		Off
		B12	[3]	000/001	Piano 1		Off
		B13	[3]	000/001	Piano 1		Off
		B14	[3]	000/001	Piano 1		Off
		B15	[3]	000/001	Piano 1		Off
		B16	[3]	000/001	Piano 1		Off

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To the functionality of the SC-88/88Pro, which was an extension of the GS format sound module, the SC-880 adds even more functions and parameters. These functions and parameters are marked by an [880] symbol. If MIDI messages marked by an [880] symbol are transmitted to another GS format sound module or to the SC-88/88Pro, these messages will not be recognized.

In addition, functions and messages which were added to the SC-88 (and not found on previous GS format sound modules) are marked by an [88] symbol, and functions and parameters which were added to the SC-88Pro (and not found on the SC-88) are marked by a [Pro] symbol.

Section 1. Receive data

■ Channel Voice Messages

● Note off

Status	2nd byte	3rd byte
8nH	kkH	vvH
9nH	kkH	00H

n = MIDI channel number: 0H-FH (ch.1–ch.16)
kk = note number: 00H-7FH (0–127)
vv = note off velocity: 00H-7FH (0–127)

* For Rhythm Parts, these messages are received when Rx.NOTE OFF = ON for each Rhythm Tone.
* The velocity values of Note Off messages are ignored.

● Note on

Status	2nd byte	3rd byte
9nH	kkH	vvH

n = MIDI channel number: 0H-FH (ch.1–ch.16)
kk = note number: 00H-7FH (0–127)
vv = note on velocity: 01H-7FH (1-127)

* Not received when Rx.NOTE MESSAGE = OFF. (Initial value is ON)
* For Rhythm Parts, not received when Rx.NOTE ON = OFF for each Rhythm Tone.

● Polyphonic Key Pressure

Status	2nd byte	3rd byte
AnH	kkH	vvH

n = MIDI channel number: 0H-FH (ch.1–ch.16)
kk = note number: 00H-7FH (0–127)
vv = key pressure: 00H-7FH (0–127)

* Not received when Rx.POLY PRESSURE (PAf) = OFF. (Initial value is ON)
* The resulting effect is determined by System Exclusive messages. With the initial settings, there will be no effect.

● Control Change

* When Rx.CONTROL CHANGE = OFF, all control change messages except for Channel Mode messages will be ignored.
* The value specified by a Control Change message will not be reset even by a Program Change, etc.

○ Bank Select (Controller number 0, 32)

Status	2nd byte	3rd byte
BnH	00H	mmH
BnH	20H	llH

n = MIDI channel number: 0H-FH (ch.1–ch.16)
mm = Bank number MSB: 00H-7FH (GS Variation number 0 - 127), Initial Value = 00H
ll = Bank number LSB: 00H - 03H (Tone Set), Initial Value = 00H

* Not received when Rx.BANK SELECT = OFF. "Rx.BANK SELECT" is set to OFF by "Turn General MIDI System On," and set to ON by "GS RESET." (Power-on default value is ON.)
* When Rx.BANK SELECT LSB = OFF, Bank number LSB will be handled as 00H regardless of the received value. However, when sending Bank Select messages, you have to send both the MSB (mmH) and LSB (llH, the value should be 00H) together.
* Bank Select processing will be suspended until a Program Change message is received.
* The GS format "Variation number" is the value of the Bank Select MSB (Controller number 0) expressed in decimal.

The SC-880 receives the lower byte of the Bank Select message (control number 32) to switch the Tone Set. When the lower byte of the Bank Select message is 00H, the Tone Set specified in Tone mode will be selected. A lower byte of 01H will select Tone Set 1, 02H will select Tone Set 2, and 03H will select Tone Set 3.

* Some other GS devices do not recognize the Bank Select LSB (Controller number 32).

The SC-880 receives the upper byte of the Bank Select message and the Program Change to select Patches or Performances.

* Not received when Control Channel = OFF. (Initial value is OFF) (p. 95)
* Bank Select messages correspond to Patches as follows.

Bank Select MSB	Program No PC#	Group	Patch No.
80	0 - 127	Preset Patch	001 - 128
81	0 - 127	User Patch	001 - 128

* In the case of PC# by itself, the Patch of the currently selected type (Preset, User) will change.
* Bank Select messages correspond to Performances as follows.

Bank Select MSB	Program No PC#	Group	Perf. No.
96	0 - 7	Preset Performance	001 - 008
97	0 - 7	User Performance	001 - 008

* In the case of PC# by itself, the Performance of the currently selected type (Preset, User) will change.

○ Modulation (Controller number 1)

Status	2nd byte	3rd byte
BnH	01H	vvH

n = MIDI channel number: 0H-FH (ch.1–ch.16)
vv = Modulation depth: 00H-7FH (0–127)

* Not received when Rx.MODULATION = OFF. (Initial value is ON)
* The resulting effect is determined by System Exclusive messages. With the initial settings, this is Pitch Modulation Depth.

○ Portamento Time (Controller number 5)

Status	2nd byte	3rd byte
BnH	05H	vvH

n = MIDI channel number: 0H-FH (ch.1–ch.16)
vv = Portamento Time: 00H-7FH (0–127), Initial value = 00H (0)

* This adjusts the rate of pitch change when Portamento is ON or when using the Portamento Control. A value of 0 results in the fastest change.

○ Data Entry (Controller number 6, 38)

Status	2nd byte	3rd byte
BnH	06H	mmH
BnH	26H	llH

n = MIDI channel number: 0H-FH (ch.1–ch.16)
mm, ll = the value of the parameter specified by RPN/NRPN
mm = MSB, ll = LSB

○ Volume (Controller number 7)

Status	2nd byte	3rd byte
BnH	07H	vvH

n = MIDI channel number: 0H-FH (ch.1–ch.16)
vv = Volume: 00H-7FH (0–127), Initial Value = 64H (100)

* Volume messages are used to adjust the volume balance of each Part.
* Not received when Rx.VOLUME = OFF. (Initial value is ON)

○ Pan (Controller number 10)

Status	2nd byte	3rd byte
BnH	0AH	vvH

n = MIDI channel number: 0H-FH (ch.1–ch.16)
vv = pan: 00H-40H-7FH (Left-Center-Right), Initial Value = 40H (Center)

* For Rhythm Parts, this is a relative adjustment of each Rhythm Tone's pan setting.
* Not received when Rx.PANPOT = OFF. (Initial value is ON)

○ Expression (Controller number 11)

Status	2nd byte	3rd byte
BnH	0BH	vvH

n = MIDI channel number: 0H-FH (ch.1–ch.16)
vv = Expression: 00H-7FH (0–127), Initial Value = 7FH (127)

* This adjusts the volume of a Part. It can be used independently from Volume messages. Expression messages are used for musical expression within a performance; e.g., expression pedal movements, crescendo and decrescendo.
* Not received when Rx.EXPRESSION = OFF. (Initial value is ON)

○ Hold 1 (Controller number 64)

Status	2nd byte	3rd byte
BnH	40H	vvH

n = MIDI channel number: 0H-FH (ch.1–ch.16)
vv = Control value: 00H-7FH (0–127)

* Not received when Rx.HOLD1 = OFF. (Initial value is ON)

○ Portamento (Controller number 65)

Status	2nd byte	3rd byte
BnH	41H	vvH

n = MIDI channel number: 0H-FH (ch.1–ch.16)
vv = Control value: 00H-7FH (0–127) 0-63 = OFF, 64-127 = ON

* Not received when Rx.PORTAMENTO = OFF. (Initial value is ON)

○ Sostenuto (Controller number 66)

Status	2nd byte	3rd byte
BnH	42H	vvH

n = MIDI channel number: 0H-FH (ch.1–ch.16)
vv = Control value: 00H-7FH (0–127) 0-63 = OFF, 64-127 = ON

* Not received when Rx.SOSTENUTO = OFF. (Initial value is ON)

○ Soft (Controller number 67)

Status	2nd byte	3rd byte
BnH	43H	vvH

n = MIDI channel number: 0H-FH (ch.1–ch.16)
vv = Control value: 00H-7FH (0–127) 0-63 = OFF, 64-127 = ON

* Not received when Rx.SOFT = OFF. (Initial value is ON)

○ Portamento control (Controller number 84)

Status	2nd byte	3rd byte
BnH	54H	kkH

n = MIDI channel number: 0H-FH (ch.1–ch.16)
kk = source note number: 00H-7FH (0–127)

* A Note-on received immediately after a Portamento Control message will change continuously in pitch, starting from the pitch of the Source Note Number.
* If a voice is already sounding for a note number identical to the Source Note Number, this voice will continue sounding (i.e., legato) and will, when the next Note-on is received, smoothly change to the pitch of that Note-on.
* The rate of the pitch change caused by Portamento Control is determined by the Portamento Time value.

Example 1.

On MIDI	Description	Result
90 3C 40	Note on C4	C4 on
B0 54 3C	Portamento Control from C4	no change
90 40 40	Note on E4	glide from C4 to E4
80 3C 40	Note off C4	no change
80 40 40	Note off E4	E4 off

Example 2.

On MIDI	Description	Result
B0 54 3C	Portamento Control from C4	no change
90 40 40	Note on E4	E4 is played with glide from C4 to E4
80 40 40	Note off E4	E4 off

○ Effect 1 (Reverb Send Level) (Controller number 91)

Status	2nd byte	3rd byte
BnH	5BH	vvH

n = MIDI channel number: 0H-FH (ch.1–ch.16)
vv = Reverb Send Level: 00H-7FH (0–127), Initial Value = 28H (40)

* This message adjusts the Reverb Send Level of each Part.

○ Effect 3 (Chorus Send Level) (Controller number 93)

Status	2nd byte	3rd byte
BnH	5DH	vvH

n = MIDI channel number: 0H-FH (ch.1–ch.16)
vv = Chorus Send Level: 00H-7FH (0–127), Initial Value = 00H (0)

* This message adjusts the Chorus Send Level of each Part.

○ Effect 4 (Delay Send Level) (Controller number 94) [88]

Status	2nd byte	3rd byte
BnH	5EH	vvH

n=MIDI channel number: 0H - FH (ch.1 - ch.16)
vv=Delay Send Level: 00H - 7FH (0 - 127), Initial value = 00H (0)

* This message adjusts the Delay Send Level of each Part.
* Some other GS devices may not recognize this message.
* Delay cannot be used in MODE-2 (Double Module mode).

○ NRPN MSB/LSB (Controller number 98, 99)

Status	2nd byte	3rd byte
BnH	63H	mmH
BnH	62H	llH

n = MIDI channel number: 0H-FH (ch.1–ch.16)
mm = upper byte of the parameter number specified by NRPN
ll = lower byte of the parameter number specified by NRPN

* NRPN can be received when Rx.NRPN = ON. "Rx.NRPN" is set to OFF by power-on reset or by receiving "Turn General MIDI System On," and it is set to ON by "GS RESET."
* The value set by NRPN will not be reset even if Program Change or Reset All Controllers is received.

NRPN
The NRPN (Non Registered Parameter Number) message allows an extended range of control changes to be used. On the SC-880, NRPN messages can be used to modify tone parameters etc.
To use these messages, you must first use NRPN messages (Controller number 98 and 99, their order does not matter) to specify the parameter to be controlled, and then use Data Entry messages to specify the value of the specified parameter. Once an NRPN parameter has been specified, all Data Entry messages received on that channel will modify the value of that parameter. To prevent accidents, it is recommended that you set RPN Null (RPN Number = 7FH/7FH) when you have finished setting the value of the desired parameter. Refer to Section 5. Supplementary material "Examples of actual MIDI messages" <Example 4> (page 203). On the SC-880, Data entry LSB (Controller number 38) of NRPN is ignored, so it is no problem to send Data entry MSB (Controller number 6) only (without Data entry LSB).

On the SC-880, NRPN can be used to modify the following parameters.

NRPN MSB LSB	Data entry MSB	Function and range
01H 08H	mmH	Vibrato Rate (relative change) mm: 00H - 40H - 7FH (-64 - 0 - +63)
01H 09H	mmH	Vibrato Depth (relative change) mm: 00H - 40H - 7FH (-64 - 0 - +63)
01H 0AH	mmH	Vibrato Delay (relative change) mm: 00H - 40H - 7FH (-64 - 0 - +63)
01H 20H	mmH	TVF Cutoff Frequency (relative change) mm: 00H - 40H - 7FH (-64 - 0 - +63)
01H 21H	mmH	TVF Resonance (relative change) mm: 00H - 40H - 7FH (-64 - 0 - +63)
01H 63H	mmH	TVF&TVA Envelope Attack Time (relative change) mm: 00H - 40H - 7FH (-64 - 0 - +63)
01H 64H	mmH	TVF&TVA Envelope Decay Time (relative change) mm: 00H - 40H - 7FH (-64 - 0 - +63)

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MSB LSB	MSB	Function and range
01H 66H	mmH	TVF&TVA Envelope Release Time (relative change)
		mm: 00H - 40H - 7FH (-64 - 0 - +63)
18H rrH	mmH	Rhythm Tone Pitch Coarse (relative change)
		rr: Rhythm Tone note number
		mm: 00H - 40H - 7FH (-64 - 0 - +63 semitone)
1AH rrH	mmH	Rhythm Tone TVA Level (absolute change)
		rr: Rhythm Tone note number
		mm: 00H - 7FH (0 - max)
1CH rrH	mmH	Rhythm Tone Panpot (absolute change)
		rr: Rhythm Tone note number
		mm: 00H, 01H - 40H - 7FH (random, left-center-right)
1DH rrH	mmH	Rhythm Tone Reverb Send Level (absolute change)
		rr: Rhythm Tone note number
		mm: 00H - 7FH (0 - max)
1EH rrH	mmH	Rhythm Tone Chorus Send Level (absolute change)
		rr: Rhythm Tone note number
		mm: 00H - 7FH (0 - max)
1FH rrH	mmH	Rhythm Tone Delay Send Level (absolute change) [88]
		rr: Rhythm Tone note number
		mm: 00H - 7FH (0 - max)

* Data entry LSB (llH) is ignored.
* Parameters marked "relative change" will change relative to the preset value(40H). Even among different GS devices, "relative change" parameters may sometimes differ in the way the sound changes or in the range of change.
* Parameters marked "absolute change" will be set to the absolute value of the parameter, regardless of the preset value.
* It is not possible to simultaneously use both Chorus Send Level and Delay Send Level on a single Rhythm Tone.

○ RPN MSB/LSB (Controller number 100, 101)

Status	2nd byte	3rd byte
BnH	65H	mmH
BnH	64H	llH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
mm = upper byte of parameter number specified by RPN
ll = lower byte of parameter number specified by RPN

* Not received when Rx.RPN = OFF. (Initial value is ON)
* The value specified by RPN will not be reset even by messages such as Program Change or Reset All Controller.

"RPN"
The RPN (Registered Parameter Number) messages are expanded control changes, and each function of an RPN is described by the MIDI Standard.
To use these messages, you must first use RPN (Controller number 100 and 101, their order does not matter) to specify the parameter to be controlled, and then use Data Entry messages (Controller number 6, 38) to specify the value of the specified parameter. Once an RPN parameter has been specified, all Data Entry messages received on that channel will modify the value of that parameter. To prevent accidents, it is recommended that you set RPN Null (RPN Number = 7FH/7FH) when you have finished setting the value of the desired parameter.Refer to Section 5. "Examples of actual MIDI messages" <Example 4> (page 203).

On the SC-880, RPN can be used to modify the following parameters.

RPN MSB LSB	Data entry MSB LSB	Explanation
00H 00H	mmH —	Pitch Bend Sensitivity
		mm: 00H-18H (0-24 semitones),
		Initial Value = 02H (2 semitones)
		ll: ignored (processed as 00H)
		specify up to 2 octaves in semitone steps
00H 01H	mmH llH	Master Fine Tuning
		mm, ll: 00 00H - 40 00H - 7F 7FH (-100 - 0 - +99.99 cents),
		Initial Value = 40 00H (0 cent)
		Refer to 5. Supplementary material, "About tuning" (page 207).
00H 02H	mmH —	Master Coarse Tuning
		mm: 28H-40H-58H (-24 - 0 - +24 semitones),
		Initial Value = 40H (semitone)
		ll: ignored (processed as 00H)
7FH 7FH	— —	RPN null
		Set condition where RPN and NRPN are unspecified. The data entry messages after set RPN null will be ignored. (No Data entry messages are required after RPN null).
		Settings already made will not change.
		mm, ll: ignored

● Program Change

Status	2nd byte
CnH	ppH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
pp = Program number: 00H-7FH (prog.1-prog.128)

* Not received when Rx.PROGRAM CHANGE = OFF. (Initial value is ON)
* After a Program Change message is received, the sound will change beginning with the next Note-on. Voices already sounding when the Program Change message was received will not be affected.
* For Rhythm Parts, Program Change message will not be received on lower byte of the bank numbers (the value of Control Number 0 is other than 0 (00H)).

● Channel Pressure

Status	2nd byte
DnH	vvH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
vv = Channel Pressure: 00H-7FH (0-127)

* Not received when Rx.CH PRESSURE (CAf) = OFF. (Initial value is ON)
* The resulting effect is determined by System Exclusive messages. With the initial settings there will be no effect.

● Pitch Bend Change

Status	2nd byte	3rd byte
EnH	llH	mmH

n = MIDI channel number: 0H-FH (ch.1-ch.16)
mm, ll = Pitch Bend value: 00 00H - 40 00H - 7F 7FH (-8192 - 0 - +8191)

* Not received when Rx.PITCH BEND = OFF. (Initial value is ON)
* The resulting effect is determined by System Exclusive messages. With the initial settings the effect is Pitch Bend.

■ Channel Mode Messages

● All Sounds Off (Controller number 120)

Status	2nd byte	3rd byte
BnH	78H	00H

n = MIDI channel number: 0H-FH (ch.1-ch.16)

* When this message is received, all currently-sounding notes on the corresponding channel will be turned off immediately.

● Reset All Controllers (Controller number 121)

Status	2nd byte	3rd byte
BnH	79H	00H

n = MIDI channel number: 0H-FH (ch.1-ch.16)

* When this message is received, the following controllers will be set to their reset values.

Controller	Reset value
Pitch Bend Change	±0 (center)
Polyphonic Key Pressure	0 (off)
Channel Pressure	0 (off)
Modulation	0 (off)
Expression	127 (max)
Hold 1	0 (off)
Portamento	0 (off)
Sostenuto	0 (off)
Soft	0 (off)
RPN	unset; previously set data will not change
NRPN	unset; previously set data will not change

● All Notes Off (Controller number 123)

Status	2nd byte	3rd byte
BnH	7BH	00H

n = MIDI channel number: 0H-FH (ch.1-ch.16)

* When All Notes Off is received, all notes on the corresponding channel will be turned off. However if Hold 1 or Sostenuto is ON, the sound will be continued until these are turned off.

● OMNI OFF (Controller number 124)

Status	2nd byte	3rd byte
BnH	7CH	00H

n = MIDI channel number: 0H-FH (ch.1~ch.16)

* The same processing will be carried out as when All Notes Off is received.

● OMNI ON (Controller number 125)

Status	2nd byte	3rd byte
BnH	7DH	00H

n = MIDI channel number: 0H-FH (ch.1~ch.16)

* The same processing will be carried out as when All Note Off is received.OMNI ON will not be turned on.

● MONO (Controller number 126)

Status	2nd byte	3rd byte
BnH	7EH	mmH

n = MIDI channel number: 0H-FH (ch.1~ch.16)
mm = mono number: 00H-10H (0-16)

* The same processing will be carried out as when All Sounds Off and All Notes Off is received, and the corresponding channel will be set to Mode 4 (M = 1) regardless of the value of "mono number."

● POLY (Controller number 127)

Status	2nd byte	3rd byte
BnH	7FH	00H

n = MIDI channel number: 0H-FH (ch.1~ch.16)

* The same processing will be carried out as when All Sounds Off and All Notes Off is received, and the corresponding channel will be set to Mode 3.

■ System Realtime Message

● Active Sensing

Status
FEH

* When Active Sensing is received, the SC-880 will begin monitoring the intervals of all further messages. While monitoring, if the interval between messages exceeds 420 ms, the same processing will be carried out as when All Sounds Off, All Notes Off and Reset All Controllers are received, and message interval monitoring will be halted.

■ System Exclusive Message

Status	Data byte	Status
F0H	iiH, ddH, ..., eeH	F7H

F0H:	System Exclusive Message status
ii = ID number:	an ID number (manufacturer ID) to indicate the manufacturer whose Exclusive message this is. Roland's manufacturer ID is 41H. ID numbers 7EH and 7FH are extensions of the MIDI standard; Universal Non-realtime Messages (7EH) and Universal Realtime Messages (7FH).
dd,....,ee = data:	00H-7FH (0-127)
F7H:	EOX (End Of Exclusive)

The System Exclusive Messages received by the SC-880 are; messages related to mode settings, Universal Realtime System Exclusive messages, Data Requests (RQ1), and Data Set (DT1).

● System exclusive messages related to mode settings

These messages are used to initialize a device to GS or General MIDI mode, or change the operating mode. When creating performance data, a "Turn General MIDI System On" message should be inserted at the beginning of a General MIDI score, and a "GS Reset" message at the beginning of a music file for GS. In the case of music files for the SC-88 and for the SC-880, we recommend that "System Mode Set" be placed at the beginning of each music file. Each song should contain only one mode message as appropriate for the type of data. (Do not insert two or more mode setting messages in a single song.)
"Turn General MIDI System On" use Universal Non-realtime Message format. "System Mode Set" and "GS Reset" use Roland system exclusive format "Data Set 1 (DT1)."

○ Turn General MIDI System On

This is a command message that resets the internal settings of the unit to the General MIDI initial state (General MIDI System-Level 1). After receiving this message, the SC-880 will automatically be set to the proper condition for correctly playing a General MIDI score.

Status	Data byte	Status
F0H	7EH, 7FH, 09H, 01H	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (Universal Non-realtime Message)
7FH	Device ID (Broadcast)
09H	Sub ID#1 (General MIDI Message)
01H	Sub ID#2 (General MIDI On)
F7H	EOX (End Of Exclusive)

* When this message is received, Rx.BANK SELECT will be OFF and Rx.NRPN will be OFF.
* This message will not be received when Rx GM On = OFF (page 95).
* There must be an interval of at least 50 ms between this message and the next message.

○ GS reset

GS Reset is a command message that resets the internal settings of a device to the GS initial state. This message appears at the beginning of music file for GS, and a GS device that receives this message will automatically be set to the proper state to correctly play back music file for GS. If the SC-880 is in MODE-1 (single module mode) all 32 Parts will be initialized. If in MODE-2 (double module mode), only the corresponding 16 Parts will be initialized. In MODE-2 if the receiving MIDI connector for each Part has been changed, this may affect playback from the other MIDI connector. In this case, first perform initialization (page 102) before using this command.

Status	Data byte	Status
F0H	41H, dev, 42H, 12H, 40H, 00H, 7FH, 00H, 41H	F7H

Byte	Explanation
F0H	Exclusive status
41H	ID number (Roland)
dev	Device ID (dev: 00H-1FH (1-32), Initial value is 10H (17))
42H	Model ID (GS)
12H	Command ID (DT1)
40H	Address MSB
00H	Address
7FH	Address LSB
00H	Data (GS reset)
41H	Checksum
F7H	EOX (End Of Exclusive)

* When this message is received, Rx.NRPN will be ON.
* This message will not be received if "Rx GS Reset = OFF"(page 95).
* There must be an interval of at least 50 ms between this message and the next.

○ System Mode Set [88]

System Mode Set is a message that sets the SC-880 operating mode to MODE-1 (single module mode) or MODE-2 (double module mode). When this message is received, the operating mode will be set, and at the same time all internal parameters (except for the tone set settings of each Part) will be reset to the initial state.

Status	Data byte	Status
F0H	41H, dev, 42H, 12H, 00H, 00H, 7FH, ddH, sumH	F7H

Byte	Explanation		
F0H	Exclusive status		
41H	ID number	(Roland)	
dev	Device ID	(dev: 00H - 1FH (1 - 32)	Initial value is 10H(17))
42H	Model ID	(GS)	
12H	Command ID	(DT1)	
00H	Address MSB		
00H	Address		
7FH	Address LSB		
ddH	Data	00H (MODE-1), 01H (MODE-2)	
sumH	Checksum	01H (MODE-1), 00H (MODE-2)	
F7H	EOX	(End Of Exclusive)	

* When this message is received, Rx.NRPN will be set ON.
* This message will not be received when Rx GS Reset = OFF (page 95) or Rx Module Mode = OFF (page 94).
* There must be an interval of at least 50 ms between this message and the next.

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● Universal Realtime System Exclusive Messages

○ Master volume

Status	Data byte	Status
F0H	7FH, 7FH, 04H, 01H, lll, mmH	F7H

Byte	Explanation
F0H	Exclusive status
7FH	ID number (universal realtime message)
7FH	Device ID (Broadcast)
04H	Sub ID#1 (Device Control messages)
01H	Sub ID#2 (Master Volume)
llH	Master volume lower byte
mmH	Master volume upper byte
F7H	EOX (End Of Exclusive)

* The lower byte (llH) of Master Volume will be handled as 00H.

● Universal Non-realtime System Exclusive Messages

○ Identity Request Message [Pro]

Status	Data byte	Status
F0H	7EH, dev, 06H, 01H	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (Universal Non-realtime Message)
dev	Device ID (dev: 00H-1FH (1-32), the initial value is 10H (17).)
06H	Sub ID#1 (General Information)
01H	Sub ID#2 (Identity Request)
F7H	EOX (End Of Exclusive)

* The "dev" is own device number or 7FH (Broadcast)

● Data transmission

The SC-880 can use Exclusive messages to transmit internal settings to other devices. There are two types of Exclusive data transmission; Individual Parameter Transmission (page 100) in which single parameters are transmitted one by one, and Bulk Dump Transmission (page 99) in which a large amount of data is transmitted at once.

The exclusive message used when transmitting music file for GS format has a model ID of 42H and a device ID of 10H. (The SC-880 allows you to change the Device ID setting.)

Model ID number 45H is used for exclusive messages which convey data for the expanded area unique to the SC-880.

○ Request data 1   RQ1 (11H)

This message requests the other device to send data. The Address and Size determine the type and amount of data to be sent. There are two types of request; Individual Parameter Request which requests data for an individual parameter, and Bulk Dump Request which requests a large amount of data at once. In either case, the "Data Request 1 (RQ1)" message format is used, and the Address and Size included in the message determine the type and amount of data that is desired.

For Individual Parameter Request, refer to "Section 3. Individual Parameter Transmission" (page 184).

For Bulk Dump Request, refer to "Section 4. Bulk Dump" (page 203).

When a Data Request message is received, if the device is ready to transmit data and if the address and size are appropriate, the requested data will be transmitted as a "Data Set 1 (DT1)" message. If not, nothing will be transmitted.

<MODEL ID = 42H> Transmission of GS format data

Status	Data byte	Status
F0H	41H, dev, 42H, 11H, aaH, bbH, ccH, ssH, ttH, uuH, sum	F7H

Byte	Explanation	
F0H	Exclusive status	
41H	ID number	(Roland)
dev	Device ID	(dev: 00H - 1FH Initial value is 10H(17))
42H	Model ID	(GS)
11H	Command ID	(RQ1)
aaH	Address MSB:upper byte of the starting address of the requested data	
bbH	Address :middle byte of the starting address of the requested data	
ccH	Address LSB:lower byte of the starting address of the requested data	
ssH	Size MSB	
ttH	Size	
uuH	Size LSB	
sum	Checksum	
F7H	EOX	(End Of Exclusive)

<MODEL ID = 45H> Transmission of data unique to the SC-880 [880]

Status	Data byte	Status
F0H	41H, dev, 45H, 11H, aaH, bbH, ccH, ddH, ssH, ttH, uuH, vvH, sum	F7H

Byte	Explanation	
F0H	Exclusive status	
41H	ID number	(Roland)
dev	Device ID	(dev: 00H - 1FH Initial value is 10H(17))
45H	Model ID	(SC-880)
11H	Command ID	(RQ1)
aaH	Address MSB:upper byte of the starting address of the requested data	
bbH	Address	
ccH	Address	
ddH	Address LSB:lower byte of the starting address of the requested data	
ssH	Size MSB	
ttH	Size	
uuH	Size	
vvH	Size LSB	
sum	Checksum	
F7H	EOX	(End Of Exclusive)

* The amount of data that can be transmitted at once time will depend on the type of data, and data must be requested using a specific starting address and size. Refer to the Address and Size listed in Section 3 (page 184).
* Regarding the checksum please refer to Section 5 (page 205).

○ Data set 1   DT1 (12H)

This is the message that actually performs data transmission, and is used when you wish to transmit the data.

<MODEL ID = 42H> Transmission of GS format data

Status	Data byte	Status
F0H	41H, dev, 42H, 12H, aaH, bbH, ccH, ddH, ... eeH, sum	F7H

Byte	Explanation	
F0H	Exclusive status	
41H	ID number	(Roland)
dev	Device ID	(dev: 00H - 1FH Initial value is 10H(17))
42H	Model ID	(GS)
12H	Command ID	(DT1)
aaH	Address MSB: upper byte of the starting address of the transmitted data	
bbH	Address: middle byte of the starting address of the transmitted data	
ccH	Address LSB: lower byte of the starting address of the transmitted data	
ddH	Data: the actual data to be transmitted. Multiple bytes of data are transmitted starting from the address.	
:	:	
eeH	Data	
sum	Checksum	
F7H	EOX	(End Of Exclusive)

<MODEL ID = 45H> Transmission of data unique to the SC-880 [880]

Status	Data byte	Status
F0H	41H, dev, 45H, 12H, aaH, bbH, ccH, ddH, eeH, ... ffH, sum	F7H

Byte	Explanation	
F0H	Exclusive status	
41H	ID number	(Roland)
dev	Device ID	(dev: 00H - 1FH Initial value is 10H(17))
45H	Model ID	(SC-880)
12H	Command ID	(DT1)
aaH	Address MSB:upper byte of the starting address of the transmitted data	
bbH	Address	
ccH	Address	
ddH	Address LSB:lower byte of the starting address of the transmitted data	
eeH	Data: the actual data to be transmitted. Multiple bytes of data are transmitted starting from the address.	
:	:	
ffH	Data	
sum	Checksum	
F7H	EOX	(End Of Exclusive)

* The amount of data that can be transmitted at one time depends on the type of data, and data can be received only from the specified starting address and size. Refer to the Address and Size given in Section 3 (page 184).
* Data larger than 128 bytes must be divided into packets of 128 bytes or less. If "Data Set 1" is transmitted successively, there must be an interval of at least 40 ms between packets.
* Regarding the checksum please refer to section 5 (page 205).

Section 2. Transmit data

■ System Realtime Message

● Active sensing
Status
FEH

* This will be transmitted constantly at intervals of approximately 250 ms.

■ System exclusive messages

"Identity Reply" and "Data Set 1 (DT1)" are the only System Exclusive messages transmitted by the SC-880.
When an appropriate "Identity Request Message" and "Data Request 1 (RQ1)" message are received, the requested internal data will be transmitted.

○ Identity Reply   [880]

Status	Data byte	Status
F0H	7EH, dev, 06H, 02H, 41H, 42H, 00H, 00H, 04H, 04H, 00H, 00H, 00H	F7H

Byte	Explanation
F0H	Exclusive status
7EH	ID number (Universal Non-realtime Message)
dev	Device ID (use the same as the device ID of Roland)
06H	Sub ID#1 (General Information)
02H	Sub ID#2 (Identity Reply)
41H	ID number (Roland)
42H	Device family code (LSB)
00H	Device family code (MSB)
00H	Device family number code (LSB)
04H	Device family number code (MSB)
04H	Software revision level
00H	Software revision level
00H	Software revision level
00H	Software revision level
F7H	EOX (End of Exclusive)

* Reply the message by the unique device ID (dev) when the device has received the "Identity Request Message" in the Broadcast.

○ Data set 1   DT1 (12H)

<MODEL ID = 42H> Transmission of GS format data

Status	Data byte	Status
F0H	41H, dev, 42H, 12H, aaH, bbH, ccH, ddH, ... eeH, sum	F7H

Byte	Explanation
F0H	Exclusive status
41H	ID number (Roland)
dev	Device ID (dev: 00H-1FH, Initial value is 10H)
42H	Model ID (GS)
12H	Command ID (DT1)
aaH	Address MSB: upper byte of the starting address of the data to be sent
bbH	Address: middle byte of the starting address of the data to be sent
ccH	Address LSB: lower byte of the starting address of the data to be sent.
ddH	Data: the actual data to be sent. Multiple bytes of data are transmitted in order starting from the address.
:	:
eeH	Data
sum	Checksum
F7H	EOX (End Of Exclusive)

<MODEL ID = 45H> Transmission of data unique to the SC-880 [880]

Status	Data byte	Status
F0H	41H, dev, 45H, 12H, aaH, bbH, ccH, ddH, eeH, ... ffH, sum	F7H

Byte	Explanation
F0H	Exclusive status
41H	ID number (Roland)
dev	Device ID (dev: 00H-1FH, Initial value is 10H)
45H	Model ID (SC-880)
12H	Command ID (DT1)
aaH	Address MSB: upper byte of the starting address of the data to be sent
bbH	Address
ccH	Address
ddH	Address LSB: lower byte of the starting address of the data to be sent.
eeH	Data: the actual data to be sent. Multiple bytes of data are transmitted in order starting from the address.
:	:
ffH	Data
sum	Checksum
F7H	EOX (End Of Exclusive)

* The amount of data that can be transmitted at one time depends on the type of data, and data will be transmitted from the specified starting address and size. Refer to the Address and Size given in Section 3 (page 184).
* Data larger than 128 bytes will be divided into packets of 128 bytes or less, and each packet will be sent at an interval of about 40 ms.
* Regarding the checksum please refer to section 4 (page 203).

There are two ways in which GS data is transmitted: Individual Parameter Transmission (Section 3 page 184) in which individual parameters are transmitted one by one, and Bulk Dump Transmission (Section 4 page 184) in which a large amount of data is transmitted at once.

Section 3. Individual Parameter Transmission
(Model ID=45H or 42H)

Individual Parameter Transmission transmits data (or requests data) for one parameter as one exclusive message (one packet of "F0 ..... F7").
In Individual Parameter Transmission, you must use the Address and Size listed in the following "Parameter Address Map". Addresses marked at "#" cannot be used as starting addresses.

■ Address Block map

An outlined address map of the Exclusive Communication is as follows;

<Model ID = 42H>
● Port-A

Address (H)	Block	Address (H)	Block
00 00 00	SYSTEM		
20 00 00	USER TONE BANK		
21 00 00	USER RHYTHM SET		
22 00 00	USER MULTI-FX		
23 00 00	USER PATCH COMMON (U-001..U-016)		
24 00 00	USER PATCH PART (Block 01) (U-001..016)		
25 00 00	USER PATCH PART (Block 01) (U-001..016)		
26 00 00	USER PATCH PART (Block 02) (U-001..016)		
27 00 00	USER PATCH PART (Block 02) (U-001..016)		
40 00 00	PERFORMANCE COMMON #A	50 00 00	PERFORMANCE COMMON B
40 10 00	PERFORMANCE PART (Block 00-0F) A	50 10 00	PERFORMANCE PART (Block 10-1F) B
41 00 00	RHYTHM SETUP A	51 00 00	RHYTHM SETUP B

* The blocks displayed in gray cannot be accessed in Mode-1 (Single Module mode).
* Blocks listed as "#A" are parameter blocks which are common to the entire device in Mode-1, and valid only for Parts A01 - A16 in Mode-2 (Double Module mode).

● Port-B

Address (H)	Block	Address (H)	Block
00 00 00	SYSTEM		
20 00 00	USER TONE BANK		
21 00 00	USER RHYTHM SET (U-1:065, U-2:066)		
22 00 00	USER MULTI-FX		
23 00 00	USER PATCH COMMON (U-001..U-016)		
24 00 00	USER PATCH PART (Block 01) (U-001..016)		
25 00 00	USER PATCH PART (Block 01) (U-001..016)		
26 00 00	USER PATCH PART (Block 02) (U-001..016)		
27 00 00	USER PATCH PART (Block 02) (U-001..016)		
50 00 00	PERFORMANCE COMMON A	40 00 00	PERFORMANCE COMMON #B
50 10 00	PERFORMANCE PART (Block 00-0F) A	40 10 00	PERFORMANCE PART (Block 10-1F) B
51 00 00	RHYTHM SETUP A	41 00 00	RHYTHM SETUP B

* The blocks displayed in gray cannot be accessed in Mode-1 (Single Module mode).
* Blocks listed as "#B" are parameter blocks which are common to the entire device in Mode-1, and valid only for Parts B01 - B16 in Mode-2 (Double Module mode).

<Model ID = 45H>

Address (H)	Block	
50 00 00 00	USER PERFORMANCE SYSTEM A	[880]
51 00 00 00	USER PERFORMANCE COMMON A	[880]
52 00 00 00	USER PERFORMANCE COMMON B	[880]
53 00 00 00	USER PERFORMANCE PART A	[880]
54 00 00 00	USER PERFORMANCE PART B	[880]
61 00 00 00	USER PATCH COMMON	[880]
63 00 00 00	USER PATCH PART	[880]
70 00 00 00	USER RHYTHM SET	[880]

* The parameter block User Performance Common A is shared by the entire instrument in mode-1 (Single Module Mode), and is valid only for parts A01–A16 in mode-2 (Double Module Mode).

■ Parameter address map

This map indicates address, size, Data (range), Parameter, Description, and Default Value of parameters which can be transferred using "Request data 1 (RQ1)" and "Data set 1 (DT1)".All the numbers of address, size, Data, and Default Value are indicated in 7-bit Hexadecimal-form. Numbers in the explanatory column are given in decimal notation.
The MODEL ID = 42H parameters at address 5* ** ** are not given in this map. The parameters for address 5* ** ** are the same format as those at at address 4* ** **.

Parameters of addresses 52 ** ** ** and 54 ** ** ** for MODEL ID = 45H are not listed in this map.
Parameters of addresses 52 ** ** ** are in the same format as addresses 51 ** ** **.
Parameters of addresses 54 ** ** ** are in the same format as addresses 53 ** ** **.

<MODEL ID = 42H>

● System Parameters [88]

Parameters affecting the entire unit, such as how the two MIDI IN connectors will function, are called System Parameters.

Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
00 00 7F	00 00 01	00–01	SYSTEM MODE SET [88]	00: MODE-1 (Single module mode) 01: MODE-2 (Double module mode) (Rx. only)	00	MODE1

*   Refer to "System exclusive messages related to Mode settings" (page 181).

			CHANNEL MSG RX PORT [88]			
00 01 00	00 00 01	00–01	BLOCK00	PORT A–B	00	PORT A
:	:	:	:	:	:	:
00 01 0F	00 00 01	00–01	BLOCK0F	PORT A–B	00	PORT A
00 01 10	00 00 01	00–01	BLOCK10	PORT A–B	01	PORT B
:	:	:	:	:	:	:
00 01 1F	00 00 01	00–01	BLOCK1F	PORT A–B	01	PORT B

*   You can modify the receiving MIDI port at which channel messages will be received for each BLOCK. We suggest that normally you use PORT A for BLOCK01-0F, and PORT B for BLOCK10-1F. (In this case there is no need to change the setting.)
*   Refer to page 187 for details of each BLOCK.

● Performance parameters
○ Performance common parameters

In MODE-1 (Single module mode) the SC-880 functions as a single sound source module with 32 Parts. In MODE-2 (Double module mode) it functions as two sound source modules with 16 Parts each. The parameters common to all Parts in each module are called Performance Common parameters.

Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
40 00 00 40 00 01# 40 00 02# 40 00 03#	00 00 04	0018–07E8	MASTER TUNE	-100.0– +100.0 [cent] Use nibblized data.	00 04 00 00	0 [cent]

*   Refer to section 5. Supplementary material, "About tuning" (page 207).

40 00 04	00 00 01	00–7F	MASTER VOLUME (= F0 7F 7F 04 01 00 vv F7)	0–127	7F	127
40 00 05	00 00 01	28–58	MASTER KEY-SHIFT	-24– +24 [semitones]	40	0[semitones]
40 00 06	00 00 01	01–7F	MASTER PAN	-63 (LEFT)– +63 (RIGHT)	40	0 (CENTER)
40 00 7F	00 00 01	00	MODE SET	00 = GS Reset (Rx. only)		

*   Refer to "System exclusive messages related to Mode settings" (page 181).

40 01 00 40 01 :# 40 01 0F#	00 00 10	20–7F	PATCH NAME	16 ASCII Characters		
40 01 30	00 00 01	00–07	REVERB MACRO	00: Room 1 01: Room 2 02: Room 3 03: Hall 1 04: Hall 2 05: Plate 06: Delay 07: Panning Delay	04	Hall 2
40 01 31	00 00 01	00–07	REVERB CHARACTER	0–7	04	4
40 01 32	00 00 01	00–07	REVERB PRE-LPF	0–7	00	0
40 01 33	00 00 01	00–7F	REVERB LEVEL	0–127	40	64
40 01 34	00 00 01	00–7F	REVERB TIME	0–127	40	64
40 01 35	00 00 01	00–7F	REVERB DELAY FEEDBACK	0–127	00	0
40 01 37	00 00 01	00–7F	REVERB PREDELAY TIME [88]	0–127 [msec]	00	0 [msec]

*   REVERB MACRO is a macro parameter that allows global setting of reverb parameters. When you select the reverb type with REVERB MACRO, each reverb parameter will be set to the most suitable value.
*   REVERB CHARACTER is a parameter that changes the reverb algorithm. The value of REVERB CHARACTER corresponds to the REVERB MACRO of the same number.
*   In MODE-2 (Double module mode), REVERB PREDELAY TIME cannot be used.

Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
40 01 38	00 00 01	00–07	CHORUS MACRO	00: Chorus 1	02	Chorus 3
				01: Chorus 2		
				02: Chorus 3		
				03: Chorus 4		
				04: Feedback Chorus		
				05: Flanger		
				06: Short Delay		
				07: Short Delay FB		
40 01 39	00 00 01	00–07	CHORUS PRE-LPF	0-7	00	0
40 01 3A	00 00 01	00–7F	CHORUS LEVEL	0-127	40	64
40 01 3B	00 00 01	00–7F	CHORUS FEEDBACK	0-127	08	8
40 01 3C	00 00 01	00–7F	CHORUS DELAY	0-127	50	80
40 01 3D	00 00 01	00–7F	CHORUS RATE	0-127	03	3
40 01 3E	00 00 01	00–7F	CHORUS DEPTH	0-127	13	19
40 01 3F	00 00 01	00–7F	CHORUS SEND LEVEL TO REVERB	0-127	00	0
40 01 40	00 00 01	00–7F	CHORUS SEND LEVEL TO DELAY [88]	0-127	00	0

* CHORUS MACRO is a macro parameter that allows global setting of chorus parameters. When you use CHORUS MACRO to select the chorus type, each chorus parameter will be set to the most suitable value.
* In MODE-2 (Double module mode), CHORUS SEND LEVEL TO DELAY cannot be used.

Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
40 01 50	00 00 01	00–09	DELAY MACRO [88]	00: Delay 1	00	Delay1
				01: Delay 2		
				02: Delay 3		
				03: Delay 4		
				04: Panning Delay 1		
				05: Panning Delay 2		
				06: Panning Delay 3		
				07: Panning Delay 4		
				08: Delay to Reverb		
				09: Pan Repeat		
40 01 51	00 00 01	00–07	DELAY PRE-LPF [88]	0-7	00	0
40 01 52	00 00 01	01–73	DELAY TIME CENTER [88]	0.1ms–1sec	61	340.0 [msec]
40 01 53	00 00 01	01–78	DELAY TIME RATIO LEFT [88]	4–500%	01	4
40 01 54	00 00 01	01–78	DELAY TIME RATIO RIGHT [88]	4–500%	01	4
40 01 55	00 00 01	00–7F	DELAY LEVEL CENTER [88]	0-127	7F	127
40 01 56	00 00 01	00–7F	DELAY LEVEL LEFT [88]	0-127	00	0
40 01 57	00 00 01	00–7F	DELAY LEVEL RIGHT [88]	0-127	00	0
40 01 58	00 00 01	00–7F	DELAY LEVEL [88]	0-127	40	64
40 01 59	00 00 01	00–7F	DELAY FEEDBACK [88]	-64– +63	50	+16
40 01 5A	00 00 01	00–7F	DELAY SENDLEVEL TO REVERB [88]	0-127	00	0

* DELAY MACRO is a macro parameter that allows global setting of delay parameters. When you use DELAY MACRO to select the delay type, each delay parameter will be set to the most suitable value.
* The relation between the DELAY TIME CENTER value and the actual delay time is as follows.

DELAY TIME	Time Range [msec]	Resolution [msec]
01-14	0.1-2.0	0.1
14-23	2.0-5.0	0.2
23-2D	5.0-10.0	0.5
2D-37	10.0-20.0	1.0
37-46	20.0-50.0	2.0
46-50	50.0-100.0	5.0
50-5A	100.0-200.0	10.0
5A-69	200.0-500.0	20.0
69-73	500.0-1000.0	50.0

* DELAY TIME RATIO LEFT and DELAY TIME RATIO RIGHT specify the ratio in relation to DELAY TIME CENTER. The resolution is 100/24(%).
* In MODE-2 (Double module mode), Delay cannot be used.

Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
40 02 00	00 00 01	00–01	EQ LOW FREQ. [88]	200Hz, 400Hz	00	200Hz
40 02 01	00 00 01	34–4C	EQ LOW GAIN [88]	-12– +12dB	40	0
40 02 02	00 00 01	00–01	EQ HIGH FREQ. [88]	3kHz, 6kHz	0	3kHz
40 02 03	00 00 01	34–4C	EQ HIGH GAIN [88]	-12– +12dB	40	0

* In MODE-2 (Double module mode), EQ (equalizer) cannot be used.

Address (H)	Size (H)	Data (H)	Parameter	Default Value (H)	Description
40 03 00	00 00 02	00–7F	M-FX TYPE [Pro]	00 00	00: Thru
40 03 01#					
40 03 03	00 00 01	00–7F	M-FX PARAMETER 1 [Pro]		
40 03 04	00 00 01	00–7F	M-FX PARAMETER 2 [Pro]		
40 03 05	00 00 01	00–7F	M-FX PARAMETER 3 [Pro]		
40 03 06	00 00 01	00–7F	M-FX PARAMETER 4 [Pro]		
40 03 07	00 00 01	00–7F	M-FX PARAMETER 5 [Pro]		
40 03 08	00 00 01	00–7F	M-FX PARAMETER 6 [Pro]		
40 03 09	00 00 01	00–7F	M-FX PARAMETER 7 [Pro]		

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Address(H)	Size(H)	Data(H)	Parameter			Default Value (H)	Description
40 03 0A	00 00 01	00–7F	M-FX PARAMETER 8 [Pro]				
40 03 0B	00 00 01	00–7F	M-FX PARAMETER 9 [Pro]				
40 03 0C	00 00 01	00–7F	M-FX PARAMETER 10 [Pro]				
40 03 0D	00 00 01	00–7F	M-FX PARAMETER 11 [Pro]				
40 03 0E	00 00 01	00–7F	M-FX PARAMETER 12 [Pro]				
40 03 0F	00 00 01	00–7F	M-FX PARAMETER 13 [Pro]				
40 03 10	00 00 01	00–7F	M-FX PARAMETER 14 [Pro]				
40 03 11	00 00 01	00–7F	M-FX PARAMETER 15 [Pro]				
40 03 12	00 00 01	00–7F	M-FX PARAMETER 16 [Pro]				
40 03 13	00 00 01	00–7F	M-FX PARAMETER 17 [Pro]				
40 03 14	00 00 01	00–7F	M-FX PARAMETER 18 [Pro]				
40 03 15	00 00 01	00–7F	M-FX PARAMETER 19 [Pro]				
40 03 16	00 00 01	00–7F	M-FX PARAMETER 20 [Pro]				

* Reading M-FX TYPE and M-FX PARAMETER please refer to page 53–89

Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
40 03 17	00 00 01	00–7F	M-FX SEND LEVEL TO REVERB [Pro]	0–127	28	40
40 03 18	00 00 01	00–7F	M-FX SEND LEVEL TO CHORUS [Pro]	0–127	00	0
40 03 19	00 00 01	00–7F	M-FX SEND LEVEL TO DELAY [Pro]	0–127	00	0
40 03 1B	00 00 01	00–7F	M-FX CONTROL SOURCE1 [Pro]	Off, CC1–95, CAf, Bend	00	Off
40 03 1C	00 00 01	00–7F	M-FX CONTROL DEPTH1 [Pro]	-100–0– +100 [%]	40	0 [%]
40 03 1D	00 00 01	00–7F	M-FX CONTROL SOURCE2 [Pro]	Off, CC1–95, CAf, Bend	00	Off
40 03 1E	00 00 01	00–7F	M-FX CONTROL DEPTH2 [Pro]	-100–0– +100 [%]	40	0 [%]
40 03 1F	00 00 01	00–7F	M-FX SEND EQ SWITCH [Pro]	OFF/ON	01	ON

* M-FX TYPE is a macro parameter which sets various Multi-Effects parameters as a group. When you use M-FX TYPE to select an Multi-Effects type, the various effect parameters will be set to appropriate values.
* In MODE-2 (Double module mode), M-FX SEND TO DELAY and M-FX SEND EQ SWITCH cannot be used.
* In the case of Mode 2 (Double Module mode), the Multi-Effects cannot be used for Parts with a CHANNEL MSG RX PORT (page 185) setting of PORT B.

O Performance Part parameters

The SC-880 has 16 Parts in Group A and 16 Parts in Group B. Parameters that can be set individually for each Part are called Performance Part parameters.

If you use exclusive messages to set Performance Part parameters, specify the address by Block number rather than Part Number (normally the same number as the MIDI channel). The Block number can be specified as one of 16 blocks, from 0(H) to F(H).

To specify a Part of group A, use the Block number corresponding to the Part and specify an address of 40 ** ** via PORT A (normally MIDI IN A).

To specify a Part of group B, use the Block number corresponding to the Part and specify an address of 40 ** ** via PORT B (normally MIDI IN B).

To specify a Part of either group A or B from a single PORT, specify an address of 40 ** ** for group A Parts or an address of 50 ** ** for group B Parts when using PORT A.

Conversely, to specify a Part of either group A or B from PORT B, specify an address of 50 ** ** for group A Parts or an address of 40 ** ** for group B Parts. In other words, when specifying Parts of the opposite side as the PORT being used, use addresses 50 ** **.

The relation between Part number and Block number is as follows.

x...BLOCK NUMBER (0–F),	Part 1	(default MIDIch = 1)	x=1
	Part 2	(default MIDIch = 2)	x=2
	:	:	
	Part 9	(default MIDIch = 9)	x=9
	Part10	(default MIDIch =10)	x=0
	Part11	(default MIDIch =11)	x=A
	Part12	(default MIDIch =12)	x=B
	:	:	
	Part16	(default MIDIch =16)	x=F

n... MIDI channel number (0–F) of the BLOCK.

In the following map, the control numbers of the control changes are indicated as CC#.

Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
40 1x 00	00 00 02	00–7F	TONE NUMBER	CC#00 VALUE 0–127	00	0
40 1x 01#		00–7F		P.C. VALUE 1–128	00	1
40 1x 02	00 00 01	00–10	Rx. CHANNEL	1–16, OFF	Same as the Part Number	
40 1x 03	00 00 01	00–01	Rx. PITCH BEND	OFF / ON	01	ON
40 1x 04	00 00 01	00–01	Rx. CH PRESSURE(CAf)	OFF / ON	01	ON
40 1x 05	00 00 01	00–01	Rx. PROGRAM CHANGE	OFF / ON	01	ON
40 1x 06	00 00 01	00–01	Rx. CONTROL CHANGE	OFF / ON	01	ON
40 1x 07	00 00 01	00–01	Rx. POLY PRESSURE(PAf)	OFF / ON	01	ON
40 1x 08	00 00 01	00–01	Rx. NOTE MESSAGE	OFF / ON	01	ON
40 1x 09	00 00 01	00–01	Rx. RPN	OFF / ON	01	ON
40 1x 0A	00 00 01	00–01	Rx. NRPN	OFF / ON	00(01*)	OFF(ON*)

* When "General MIDI System On" is received, Rx. NRPN will be set OFF. When "GS Reset" is received, it will be set ON.

40 1x 0B	00 00 01	00–01	Rx. MODULATION	OFF / ON	01	ON
40 1x 0C	00 00 01	00–01	Rx. VOLUME	OFF / ON	01	ON
40 1x 0D	00 00 01	00–01	Rx. PANPOT	OFF / ON	01	ON
40 1x 0E	00 00 01	00–01	Rx. EXPRESSION	OFF / ON	01	ON
40 1x 0F	00 00 01	00–01	Rx. HOLD1	OFF / ON	01	ON
40 1x 10	00 00 01	00–01	Rx. PORTAMENTO	OFF / ON	01	ON

Appendices

MIDI Implementation

Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
40 1x 11	00 00 01	00-01	Rx. SOSTENUTO	OFF / ON	01	ON
40 1x 12	00 00 01	00-01	Rx. SOFT	OFF / ON	01	ON
40 1x 13	00 00 01	00-01	MONO/POLY MODE	Mono / Poly (=CC# 126 01 / CC# 127 00)	01	Poly
40 1x 14	00 00 01	00-02	ASSIGN MODE	0 = SINGLE 1 = LIMITED-MULTI 2 = FULL-MULTI	TONE SET 2/3 01 TONE SET 1 00 at x=0 01 at x≠0	LIMITED-MULTI SINGLE (Rhythm Part) LIMITED-MULTI (Normal Part)

* ASSIGN MODE is the parameter that determines how voice assignment will be handled when sounds overlap on identical note numbers in the same channel (i.e., repeatedly struck notes). This is initialized to a mode suitable for each Part, so for general purposes there is no need to change this.

| 40 1x 15 | 00 00 01 | 00-02 | USE FOR RHYTHM PART | 0 = OFF
1 = RHYTHM MODULE 1

2 = RHYTHM MODULE 2 | 00 at x≠0
01 at x=0 | OFF (Normal Part)
RHYTHM MODULE 1
(Rhythm Part) |

* This parameter sets the Rhythm Module of the Part used as the Rhythm Part. The SC-880 can simultaneously (in different Parts) use up to two Rhythm Modules (RHYTHM MODULE 1, RHYTHM MODULE 2). With the initial settings, Part10 (MIDI CH=10, x=0) is set to RHYTHM MODULE 1 (1), and other Parts are set to normal instrumental Parts (OFF(0)).

40 1x 16	00 00 01	28-58	PITCH KEY SHIFT	-24- +24 [semitones]	40	0 [semitones]
40 1x 17	00 00 02	08-F8	PITCH OFFSET FINE	-12.0- +12.0 [Hz]	08 00	0 [Hz]
40 1x 18#				Use nibblized data.		

* PITCH OFFSET FINE allows you to alter, by a specified frequency amount, the pitch at which notes will sound. This parameter differs from the conventional Fine Tuning (RPN #1) parameter in that the amount of frequency alteration (in Hertz) will be identical no matter which note is played. When a multiple number of Parts, each of which has been given a different setting for PITCH OFFSET FINE, are sounded by means of an identical note number, you can obtain a Celeste effect.

40 1x 19	00 00 01	00-7F	PART LEVEL	0-127 (=CC# 7)	64	100
40 1x 1A	00 00 01	00-7F	VELOCITY SENSE DEPTH	0-127	40	64
40 1x 1B	00 00 01	00-7F	VELOCITY SENSE OFFSET	0-127	40	64
40 1x 1C	00 00 01	00-7F	PART PANPOT	-64(RANDOM), -63(LEFT)- +63(RIGHT) (=CC# 10, except RANDOM)	40	0 (CENTER)
40 1x 1D	00 00 01	00-7F	KEYBOARD RANGE LOW	(C-1)-(G9)	00	C-1
40 1x 1E	00 00 01	00-7F	KEYBOARD RANGE HIGH	(C-1)-(G9)	7F	G 9
40 1x 1F	00 00 01	00-5F	CC1 CONTROLLER NUMBER	0-95	10	16
40 1x 20	00 00 01	00-5F	CC2 CONTROLLER NUMBER	0-95	11	17
40 1x 21	00 00 01	00-7F	CHORUS SEND LEVEL	0-127 (=CC# 93)	00	0
40 1x 22	00 00 01	00-7F	REVERB SEND LEVEL	0-127 (=CC# 91)	28	40
40 1x 23	00 00 01	00-01	Rx.BANK SELECT	OFF / ON	01(00*)	ON(OFF*)

* When "General MIDI System On" is received, Rx.BANK SELECT will be set OFF. When "GS Reset" or "System Mode Set" is received, it will be set ON.

| 40 1x 24 | 00 00 01 | 00-01 | RX BANK SELECT LSB [88] | OFF / ON | 01 | ON |

* When RX BANK SELECT LSB = OFF, Bank Select LSB (Bn 20 11) will be treated as 00H regardless of its value.

40 1x 2A	00 00 02	00 00-40 00-7F 7F	PITCH FINE TUNE [88]	-100-0- +100 [cent] (= RPN#1)	40 00	0
40 1x 2B#						
40 1x 2C	00 00 01	00-7F	DELAY SEND LEVEL [88]	0-127 (=CC# 94)	00	0

* In MODE-2 (Double module mode), DELAY SEND LEVEL cannot be used.

40 1x 30	00 00 01	00-7F	TONE MODIFY1 [88] Vibrato Rate	-64- +63 (=NRPN# 8)	40	0
40 1x 31	00 00 01	00-7F	TONE MODIFY2 [88] Vibrato Depth	-64- +63 (=NRPN# 9)	40	0
40 1x 32	00 00 01	00-7F	TONE MODIFY3 [88] TVF Cutoff Freq	-64- +63 (=NRPN# 32)	40	0
40 1x 33	00 00 01	00-7F	TONE MODIFY4 [88] TVF Resonance	-64- +63 (=NRPN# 33)	40	0
40 1x 34	00 00 01	00-7F	TONE MODIFY5 [88] TVF & TVA Env.attack	-64- +63 (=NRPN# 99)	40	0
40 1x 35	00 00 01	00-7F	TONE MODIFY6 [88] TVF & TVA Env.decay	-64- +63 (=NRPN# 100)	40	0
40 1x 36	00 00 01	00-7F	TONE MODIFY7 [88] TVF&TVA Env.release	-64- +63 (=NRPN# 102)	40	0
40 1x 37	00 00 01	00-7F	TONE MODIFY8 [88] Vibrato Delay	-64- +63 (=NRPN# 10)	40	0

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Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
40 1x 40	00 00 0C	00–7F	SCALE TUNING C	-64– +63 [cent]	40	0 [cent]
40 1x 41#		00–7F	SCALE TUNING C#	-64– +63 [cent]	40	0 [cent]
40 1x 42#		00–7F	SCALE TUNING D	-64– +63 [cent]	40	0 [cent]
40 1x 43#		00–7F	SCALE TUNING D#	-64– +63 [cent]	40	0 [cent]
40 1x 44#		00–7F	SCALE TUNING E	-64– +63 [cent]	40	0 [cent]
40 1x 45#		00–7F	SCALE TUNING F	-64– +63 [cent]	40	0 [cent]
40 1x 46#		00–7F	SCALE TUNING F#	-64– +63 [cent]	40	0 [cent]
40 1x 47#		00–7F	SCALE TUNING G	-64– +63 [cent]	40	0 [cent]
40 1x 48#		00–7F	SCALE TUNING G#	-64– +63 [cent]	40	0 [cent]
40 1x 49#		00–7F	SCALE TUNING A	-64– +63 [cent]	40	0 [cent]
40 1x 4A#		00–7F	SCALE TUNING A#	-64– +63 [cent]	40	0 [cent]
40 1x 4B#		00–7F	SCALE TUNING B	-64– +63 [cent]	40	0 [cent]

* SCALE TUNING is a function that allows fine adjustment to the pitch of each note in the octave. The pitch of each identically-named note in all octaves will change simultaneously. A setting of 0 cent (40H) is equal temperament (page 207).

Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
40 2x 00	00 00 01	28–58	MOD PITCH CONTROL	-24– +24 [semitones]	40	0 [semitones]
40 2x 01	00 00 01	00–7F	MOD TVF CUTOFF CONTROL	-9600– +9600 [cent]	40	0 [cent]
40 2x 02	00 00 01	00–7F	MOD AMPLITUDE CONTROL	-100.0– +100.0 [%]	40	0 [%]
40 2x 03	00 00 01	00–7F	MOD LFO1 RATE CONTROL	-10.0– +10.0 [Hz]	40	0 [Hz]
40 2x 04	00 00 01	00–7F	MOD LFO1 PITCH DEPTH	0–600 [cent]	0A	10 [cent]
40 2x 05	00 00 01	00–7F	MOD LFO1 TVF DEPTH	0–2400 [cent]	00	0 [cent]
40 2x 06	00 00 01	00–7F	MOD LFO1 TVA DEPTH	0–100.0 [%]	00	0 [%]
40 2x 07	00 00 01	00–7F	MOD LFO2 RATE CONTROL	-10.0– +10.0 [Hz]	40	0 [Hz]
40 2x 08	00 00 01	00–7F	MOD LFO2 PITCH DEPTH	0–600 [cent]	00	0 [cent]
40 2x 09	00 00 01	00–7F	MOD LFO2 TVF DEPTH	0–2400 [cent]	00	0 [cent]
40 2x 0A	00 00 01	00–7F	MOD LFO2 TVA DEPTH	0–100.0 [%]	00	0 [%]
40 2x 10	00 00 01	40–58	BEND PITCH CONTROL	0–24 [semitones]	42	2 [semitones]
40 2x 11	00 00 01	00–7F	BEND TVF CUTOFF CONTROL	-9600– +9600 [cent]	40	0 [cent]
40 2x 12	00 00 01	00–7F	BEND AMPLITUDE CONTROL	-100.0– +100.0 [%]	40	0 [%]
40 2x 13	00 00 01	00–7F	BEND LFO1 RATE CONTROL	-10.0– +10.0 [Hz]	40	0 [Hz]
40 2x 14	00 00 01	00–7F	BEND LFO1 PITCH DEPTH	0–600 [cent]	00	0 [cent]
40 2x 15	00 00 01	00–7F	BEND LFO1 TVF DEPTH	0–2400 [cent]	00	0 [cent]
40 2x 16	00 00 01	00–7F	BEND LFO1 TVA DEPTH	0–100.0 [%]	00	0 [%]
40 2x 17	00 00 01	00–7F	BEND LFO2 RATE CONTROL	-10.0– +10.0 [Hz]	40	0 [Hz]
40 2x 18	00 00 01	00–7F	BEND LFO2 PITCH DEPTH	0–600 [cent]	00	0 [cent]
40 2x 19	00 00 01	00–7F	BEND LFO2 TVF DEPTH	0–2400 [cent]	00	0 [cent]
40 2x 1A	00 00 01	00–7F	BEND LFO2 TVA DEPTH	0–100.0 [%]	00	0 [%]
40 2x 20	00 00 01	28–58	CAf PITCH CONTROL	-24– +24 [semitones]	40	0 [semitones]
40 2x 21	00 00 01	00–7F	CAf TVF CUTOFF CONTROL	-9600– +9600 [cent]	40	0 [cent]
40 2x 22	00 00 01	00–7F	CAf AMPLITUDE CONTROL	-100.0– +100.0 [%]	40	0 [%]
40 2x 23	00 00 01	00–7F	CAf LFO1 RATE CONTROL	-10.0– +10.0 [Hz]	40	0 [Hz]
40 2x 24	00 00 01	00–7F	CAf LFO1 PITCH DEPTH	0–600 [cent]	00	0 [cent]
40 2x 25	00 00 01	00–7F	CAf LFO1 TVF DEPTH	0–2400 [cent]	00	0 [cent]
40 2x 26	00 00 01	00–7F	CAf LFO1 TVA DEPTH	0–100.0 [%]	00	0 [%]
40 2x 27	00 00 01	00–7F	CAf LFO2 RATE CONTROL	-10.0– +10.0 [Hz]	40	0 [Hz]
40 2x 28	00 00 01	00–7F	CAf LFO2 PITCH DEPTH	0–600 [cent]	00	0 [cent]
40 2x 29	00 00 01	00–7F	CAf LFO2 TVF DEPTH	0–2400 [cent]	00	0 [cent]
40 2x 2A	00 00 01	00–7F	CAf LFO2 TVA DEPTH	0–100.0 [%]	00	0 [%]
40 2x 30	00 00 01	28–58	PAf PITCH CONTROL	-24– +24 [semitones]	40	0 [semitones]
40 2x 31	00 00 01	00–7F	PAf TVF CUTOFF CONTROL	-9600– +9600 [cent]	40	0 [cent]
40 2x 32	00 00 01	00–7F	PAf AMPLITUDE CONTROL	-100.0– +100.0 [%]	40	0 [%]
40 2x 33	00 00 01	00–7F	PAf LFO1 RATE CONTROL	-10.0– +10.0 [Hz]	40	0 [Hz]
40 2x 34	00 00 01	00–7F	PAf LFO1 PITCH DEPTH	0–600 [cent]	00	0 [cent]
40 2x 35	00 00 01	00–7F	PAf LFO1 TVF DEPTH	0–2400 [cent]	00	0 [cent]
40 2x 36	00 00 01	00–7F	PAf LFO1 TVA DEPTH	0–100.0 [%]	00	0 [%]
40 2x 37	00 00 01	00–7F	PAf LFO2 RATE CONTROL	-10.0– +10.0 [Hz]	40	0 [Hz]
40 2x 38	00 00 01	00–7F	PAf LFO2 PITCH DEPTH	0–600 [cent]	00	0 [cent]
40 2x 39	00 00 01	00–7F	PAf LFO2 TVF DEPTH	0–2400 [cent]	00	0 [cent]
40 2x 3A	00 00 01	00–7F	PAf LFO2 TVA DEPTH	0–100.0 [%]	00	0 [%]
40 2x 40	00 00 01	28–58	CC1 PITCH CONTROL	-24– +24 [semitones]	40	0 [semitones]
40 2x 41	00 00 01	00–7F	CC1 TVF CUTOFF CONTROL	-9600– +9600 [cent]	40	0 [cent]
40 2x 42	00 00 01	00–7F	CC1 AMPLITUDE CONTROL	-100.0– +100.0 [%]	40	0 [%]
40 2x 43	00 00 01	00–7F	CC1 LFO1 RATE CONTROL	-10.0– +10.0 [Hz]	40	0 [Hz]
40 2x 44	00 00 01	00–7F	CC1 LFO1 PITCH DEPTH	0–600 [cent]	00	0 [cent]
40 2x 45	00 00 01	00–7F	CC1 LFO1 TVF DEPTH	0–2400 [cent]	00	0 [cent]
40 2x 46	00 00 01	00–7F	CC1 LFO1 TVA DEPTH	0–100.0 [%]	00	0 [%]
40 2x 47	00 00 01	00–7F	CC1 LFO2 RATE CONTROL	-10.0– +10.0 [Hz]	40	0 [Hz]
40 2x 48	00 00 01	00–7F	CC1 LFO2 PITCH DEPTH	0–600 [cent]	00	0 [cent]
40 2x 49	00 00 01	00–7F	CC1 LFO2 TVF DEPTH	0–2400 [cent]	00	0 [cent]
40 2x 4A	00 00 01	00–7F	CC1 LFO2 TVA DEPTH	0–100.0 [%]	00	0 [%]

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Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
40 2x 50	00 00 01	28–58	CC2 PITCH CONTROL	-24– +24 [semitones]	40	0 [semitones]
40 2x 51	00 00 01	00–7F	CC2 TVF CUTOFF CONTROL	-9600– +9600 [cent]	40	0 [cent]
40 2x 52	00 00 01	00–7F	CC2 AMPLITUDE CONTROL	-100.0– +100.0 [%]	40	0 [%]
40 2x 53	00 00 01	00–7F	CC2 LFO1 RATE CONTROL	-10.0– +10.0 [Hz]	4	0 [Hz]
40 2x 54	00 00 01	00–7F	CC2 LFO1 PITCH DEPTH	0–600 [cent]	0	0 [cent]
40 2x 55	00 00 01	00–7F	CC2 LFO1 TVF DEPTH	0–2400 [cent]	0	0 [cent]
40 2x 56	00 00 01	00–7F	CC2 LFO1 TVA DEPTH	0–100.0 [%]	0	0 [%]
40 2x 57	00 00 01	00–7F	CC2 LFO2 RATE CONTROL	-10.0– +10.0 [Hz]	4	0 [Hz]
40 2x 58	00 00 01	00–7F	CC2 LFO2 PITCH DEPTH	0–600 [cent]	0	0 [cent]
40 2x 59	00 00 01	00–7F	CC2 LFO2 TVF DEPTH	0–2400 [cent]	0	0 [cent]
40 2x 5A	00 00 01	00–7F	CC2 LFO2 TVA DEPTH	0–100.0 [%]	0	0 [%]

* You may not always be able to obtain the desired effect by modifying the LFO 1 and LFO 2 parameters.

Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
40 4x 00	00 00 01	00–03	TONE SET NUMBER [Pro] (= CC#32 : Bank number LSB)	TONE SET 0–3 00 : SELECTED 01 : TONE SET 1 02 : TONE SET 2 03 : TONE SET 3	00	SELECTED

* When "GS Reset" is received, this will be 00: SELECTED.

Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
40 4x 01	00 00 01	01–03	TONE SET-0 NUMBER [Pro]	01 : TONE SET 1 02 : TONE SET 2 03 : TONE SET 3	(03)	

* When TONE SET NUMBER is 00, this specifies the TONE SET. This setting will not be reset when the power is turned on or when "GS Reset", "General MIDI System On" or "System Mode Set" is received.

Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
40 4x 20	00 00 01	00–01	EQ ON/OFF [88]	OFF / ON	01	ON

* This turns the EQ (equalizer) on/off. In MODE-2 (Double module mode) it cannot be used.

Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
40 4x 21	00 00 01	00–03	OUTPUT ASSIGN [Pro]	00:OUTPUT-1 01:OUTPUT-2 02:OUTPUT-2L 03:OUTPUT-2R	00	OUTPUT-1
40 4x 22	00 00 01	00–01	PART M-FX ASSIGN [Pro]	00:BYPASS 01:M-FX	00	BYPASS

● Rhythm setup parameters

m: Rhythm Module number (0 = RHYTHM MODULE1, 1 = RHYTHM MODULE2)
rr: Rhythm part note number (00H–7FH: 0–127)

Address (H)	Size (H)	Data (H)	Parameter	Description
41 m0 00 |# 41 m0 0B#	00 00 0C	20–7F	RHYTHM SET NAME	ASCII Character
41 m1 rr	00 00 01	00–7F	PLAY NOTE NUMBER	Pitch coarse
41 m2 rr	00 00 01	00–7F	LEVEL	TVA level (=NRPN# 26)
41 m3 rr	00 00 01	00–7F	ASSIGN GROUP NUMBER	Non, 1–127
41 m4 rr	00 00 01	00–7F	PANPOT	-64(RANDOM), -63(LEFT)– +63(RIGHT) (=NRPN# 28, except RANDOM)
41 m5 rr	00 00 01	00–7F	REVERB SEND LEVEL	0.0–1.0 Multiplicand of the part reverb level (=NRPN# 29)
41 m6 rr	00 00 01	00–7F	CHORUS SEND LEVEL	0.0–1.0 Multiplicand of the part chorus level (=NRPN# 30)
41 m7 rr	00 00 01	00–01	Rx. NOTE OFF	OFF / ON
41 m8 rr	00 00 01	00–01	Rx. NOTE ON	OFF / ON
41 m9 rr	00 00 01	00–7F	DELAY SEND LEVEL [88]	0.0–1.0 Multiplicand of the part delay level (=NRPN# 31)

* When the Rhythm Set is changed, RHYTHM SETUP PARAMETER values will all be initialized.
* It is not possible to simultaneously use both Chorus Send Level and Delay Send Level for a single Rhythm Tone.

● User tone

You can modify the parameters of the SC-880 sound to your taste, and save your new settings in Variation numbers 64 or 65 of the Tone Set 2/3 (page 32). A sound saved in this way is called a User Tone. You can save 256 different sounds in this way.
The parameters you can set are Vibrato, Filter and Envelope.

b: bank number (0H = GS Variation number 64, 1H = GS Variation number 65)
pp: program number (00-7F: 1-128)

Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
20 b0 pp	00 00 01	01-03	SOURCE TONE# (TONE SET) [88]	—		
20 b1 pp	00 00 01	00-7F	(CC#00 : Bank number MSB) [88]	—		
20 b2 pp	00 00 01	00-7F	(PG# : Program number) [88]	—		
20 b3 pp	00 00 01	00-7F	USER TONE MODIFY1-2 [88] Vibrato Rate	-64- +63	40	0
20 b4 pp	00 00 01	00-7F	USER TONE MODIFY2-2 [88] Vibrato Depth	-64- +63	40	0
20 b5 pp	00 00 01	00-7F	USER TONE MODIFY3-2 [88] TVF Cutoff Freq	-64- +63	40	0
20 b6 pp	00 00 01	00-7F	USER TONE MODIFY4-2 [88] TVF Resonance	-64- +63	40	0
20 b7 pp	00 00 01	00-7F	USER TONE MODIFY5-2 [88] TVF&TVA Env.attack	-64- +63	40	0
20 b8 pp	00 00 01	00-7F	USER TONE MODIFY6-2 [88] TVF&TVA Env.decay	-64- +63	40	0
20 b9 pp	00 00 01	00-7F	USER TONE MODIFY7-2 [88] TVF&TVA Env.release	-64- +63	40	0
20 bA pp	00 00 01	00-7F	USER TONE MODIFY8-2 [88] Vibrato Delay	-64- +63	40	0

● User Rhythm Set

The values of rhythm sound parameters can be modified as desired and stored as a Rhythm Set. A Rhythm Set that was stored in this way is referred to as a User Rhythm Set. Sixteen Rhythm Sets can be stored. A User Rhythm Set can be given an original name. These are stored in Rhythm Set numbers 65-80 of TONE SET 2/3.
Addresses 21 ** ** below can receive rhythm set data for rhythm set numbers 65 and 66. To receive data for rhythm set numbers 67-80, use addresses 70 0d ** ** with <Model ID = 45H> on p. 202.

d: Rhythm set number (0H = User Rhythm set number 65, 1H = User Rhythm Set number 66)
rr: Rhythm part note number (00-7F)

Address (H)	Size (H)	Data (H)	Parameter	Description
21 d0 00	00 00 0C	20-7F	USER RHYTHM SET NAME [88]	32-127
:				(ASCII 12 characters)
21 d0 0B#				
21 d1 rr	00 00 01	00-7F	PLAY NOTE [88]	0-127
21 d2 rr	00 00 01	00-7F	LEVEL [88]	0-127
21 d3 rr	00 00 01	00-7F	ASSIGN GROUP [88]	0-127
21 d4 rr	00 00 01	00-7F	PAN [88]	0-127
21 d5 rr	00 00 01	00-7F	REVERB SEND LEVEL [88]	0-127
21 d6 rr	00 00 01	00-7F	CHORUS SEND LEVEL [88]	0-127
21 d7 rr	00 00 01	00-01	RX NOTE OFF [88]	OFF / ON
21 d8 rr	00 00 01	00-01	RX NOTE ON [88]	OFF / ON
21 d9 rr	00 00 01	00-7F	DELAY SEND LEVEL [88]	0-127
21 dA rr	00 00 01	01-03	SOURCE RHYTHM SET# (TONE SET) [88]	1-3
21 dB rr	00 00 01	00-7F	(PG#: Program number) [88]	0-127
21 dC rr	00 00 01	00-7F	SOURCE NOTE NUMBER [88]	0-127

● User Effect

You can modify the Multi-Effect parameters as desired and store them as an Effect Type. Effect Types that are stored in this way are referred to as User Effects. 64 different Effect Types can be stored. These are stored in Effect Type numbers 40 00H through 40 3FH.

pp: LSB number of M-FX TYPE (00-3F : 0-64)

Address (H)	Size (H)	Data (H)	Parameter	Description
22 00 pp	00 00 02	—	SOURCE M-FX TYPE [Pro]	
22 01 pp#				
22 03 pp	00 00 01	00-7F	M-FX PARAMETER 1 [Pro]	
22 04 pp	00 00 01	00-7F	M-FX PARAMETER 2 [Pro]	
22 05 pp	00 00 01	00-7F	M-FX PARAMETER 3 [Pro]	
22 06 pp	00 00 01	00-7F	M-FX PARAMETER 4 [Pro]	
22 07 pp	00 00 01	00-7F	M-FX PARAMETER 5 [Pro]	
22 08 pp	00 00 01	00-7F	M-FX PARAMETER 6 [Pro]	
22 09 pp	00 00 01	00-7F	M-FX PARAMETER 7 [Pro]	
22 0A pp	00 00 01	00-7F	M-FX PARAMETER 8 [Pro]	
22 0B pp	00 00 01	00-7F	M-FX PARAMETER 9 [Pro]	
22 0C pp	00 00 01	00-7F	M-FX PARAMETER 10 [Pro]	
22 0D pp	00 00 01	00-7F	M-FX PARAMETER 11 [Pro]	
22 0E pp	00 00 01	00-7F	M-FX PARAMETER 12 [Pro]	
22 0F pp	00 00 01	00-7F	M-FX PARAMETER 13 [Pro]	
22 10 pp	00 00 01	00-7F	M-FX PARAMETER 14 [Pro]	
22 11 pp	00 00 01	00-7F	M-FX PARAMETER 15 [Pro]	

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Address (H)	Size (H)	Data (H)	Parameter	Description
22 12 pp	00 00 01	00-7F	M-FX PARAMETER 16 [Pro]	
22 13 pp	00 00 01	00-7F	M-FX PARAMETER 17 [Pro]	
22 14 pp	00 00 01	00-7F	M-FX PARAMETER 18 [Pro]	
22 15 pp	00 00 01	00-7F	M-FX PARAMETER 19 [Pro]	
22 16 pp	00 00 01	00-7F	M-FX PARAMETER 20 [Pro]	

● User Patch

Addresses 23 ** ** below allow you to modify the values of the performance common parameters and all performance part parameters (PART1 and PART2 only), and save them as a patch. A patch that has been saved in this way is called a User Patch. 128 user patches can be saved. Addresses 23 ** ** can receive data only for PART1 and PART2 of user patches U-001–U-016. To receive data for user patches U-017–U-128, use addresses 61 ** ** ** with <Model ID = 45H> on p. 199.

● User Patch Common

pp : Patch number (00–0F : 1-16)

Address (H)	Size (H)	Data (H)	Parameter	Description
23 pp 00	00 00 04	0018-07E8	MASTER TUNE [Pro]	-100.0– +100.0 [cent]
23 pp 01#				
23 pp 02#				
23 pp 03#				
23 pp 04	00 00 01	00-7F	MASTER VOLUME [Pro]	0–127
23 pp 05	00 00 01	28-58	MASTER KEY-SHIFT [Pro]	-24– +24 [semitones]
23 pp 06	00 00 01	01-7F	MASTER PAN [Pro]	-63– +63
23 pp 08	00 00 10	20-7F	PATCH NAME [Pro]	16 ASCII Characters
23 pp : #				
23 pp 17#				
23 pp 18	00 00 01	00-07	REVERB MACRO [Pro]	Room 1–Panning Delay
23 pp 19	00 00 01	00-07	REVERB CHARACTER [Pro]	0–7
23 pp 1A	00 00 01	00-07	REVERB PRE-LPF [Pro]	0–7
23 pp 1B	00 00 01	00-7F	REVERB LEVEL [Pro]	0–127
23 pp 1C	00 00 01	00-7F	REVERB TIME [Pro]	0–127
23 pp 1D	00 00 01	00-7F	REVERB DELAY FEEDBACK [Pro]	0–127
23 pp 1F	00 00 01	00-7F	REVERB PREDELAY TIME [Pro]	0–127 [msec]

* In MODE-2 (Double module mode), REVERB PREDELAY TIME cannot be used.

Address (H)	Size (H)	Data (H)	Parameter	Description
23 pp 20	00 00 01	00-07	CHORUS MACRO [Pro]	Chorus 1–Short Delay FB
23 pp 21	00 00 01	00-07	CHORUS PRE-LPF [Pro]	0–7
23 pp 22	00 00 01	00-7F	CHORUS LEVEL [Pro]	0–127
23 pp 23	00 00 01	00-7F	CHORUS FEEDBACK [Pro]	0–127
23 pp 24	00 00 01	00-7F	CHORUS DELAY [Pro]	0–127
23 pp 25	00 00 01	00-7F	CHORUS RATE [Pro]	0–127
23 pp 26	00 00 01	00-7F	CHORUS DEPTH [Pro]	0–127
23 pp 27	00 00 01	00-7F	CHORUS SEND LEVEL TO REVERB [Pro]	0–127
23 pp 28	00 00 01	00-7F	CHORUS SEND LEVEL TO DELAY [Pro]	0–127

* In MODE-2 (Double module mode), CHORUS SEND LEVEL TO DELAY cannot be used.

Address (H)	Size (H)	Data (H)	Parameter	Description
23 pp 29	00 00 01	00-09	DELAY MACRO [Pro]	Delay 1–Panning Repeat
23 pp 2A	00 00 01	00-07	DELAY PRE-LPF [Pro]	0–7
23 pp 2B	00 00 01	01-73	DELAY TIME CENTER [Pro]	0.1ms–1sec
23 pp 2C	00 00 01	01-78	DELAY TIME RATIO LEFT [Pro]	4–500%
23 pp 2D	00 00 01	01-78	DELAY TIME RATIO RIGHT [Pro]	4–500%
23 pp 2E	00 00 01	00-7F	DELAY LEVEL CENTER [Pro]	0–127
23 pp 2F	00 00 01	00-7F	DELAY LEVEL LEFT [Pro]	0–127
23 pp 30	00 00 01	00-7F	DELAY LEVEL RIGHT [Pro]	0–127
23 pp 31	00 00 01	00-7F	DELAY LEVEL [Pro]	0–127
23 pp 32	00 00 01	00-7F	DELAY FEEDBACK [Pro]	-64– +63
23 pp 33	00 00 01	00-7F	DELAY SENDLEVEL TO REVERB [Pro]	0–127

* In MODE-2 (Double module mode), DELAY cannot be used.

Address (H)	Size (H)	Data (H)	Parameter	Description
23 pp 34	00 00 01	00-01	EQ LOW FREQ [Pro]	200Hz, 400Hz
23 pp 35	00 00 01	34-4C	EQ LOW GAIN [Pro]	-12– +12dB
23 pp 36	00 00 01	00-01	EQ HIGH FREQ [Pro]	3kHz, 6kHz
23 pp 37	00 00 01	34-4C	EQ HIGH GAIN [Pro]	-12– +12dB

* In MODE-2 (Double module mode), EQ cannot be used.

Address (H)	Size (H)	Data (H)	Parameter	Description
23 pp 40	00 00 02	00-7F	M-FX TYPE [Pro]	
23 pp 41#				
23 pp 43	00 00 01	00-7F	M-FX PARAMETER 1 [Pro]	
23 pp 44	00 00 01	00-7F	M-FX PARAMETER 2 [Pro]	
23 pp 45	00 00 01	00-7F	M-FX PARAMETER 3 [Pro]	
23 pp 46	00 00 01	00-7F	M-FX PARAMETER 4 [Pro]	

Address (H)	Size (H)	Data (H)	Parameter	Description
23 pp 47	00 00 01	00–7F	M-FX PARAMETER 5 [Pro]	
23 pp 48	00 00 01	00–7F	M-FX PARAMETER 6 [Pro]	
23 pp 49	00 00 01	00–7F	M-FX PARAMETER 7 [Pro]	
23 pp 4A	00 00 01	00–7F	M-FX PARAMETER 8 [Pro]	
23 pp 4B	00 00 01	00–7F	M-FX PARAMETER 9 [Pro]	
23 pp 4C	00 00 01	00–7F	M-FX PARAMETER 10 [Pro]	
23 pp 4D	00 00 01	00–7F	M-FX PARAMETER 11 [Pro]	
23 pp 4E	00 00 01	00–7F	M-FX PARAMETER 12 [Pro]	
23 pp 4F	00 00 01	00–7F	M-FX PARAMETER 13 [Pro]	
23 pp 50	00 00 01	00–7F	M-FX PARAMETER 14 [Pro]	
23 pp 51	00 00 01	00–7F	M-FX PARAMETER 15 [Pro]	
23 pp 52	00 00 01	00–7F	M-FX PARAMETER 16 [Pro]	
23 pp 53	00 00 01	00–7F	M-FX PARAMETER 17 [Pro]	
23 pp 54	00 00 01	00–7F	M-FX PARAMETER 18 [Pro]	
23 pp 55	00 00 01	00–7F	M-FX PARAMETER 19 [Pro]	
23 pp 56	00 00 01	00–7F	M-FX PARAMETER 20 [Pro]	
23 pp 57	00 00 01	00–7F	M-FX SEND LEVEL TO REVERB [Pro]	
23 pp 58	00 00 01	00–7F	M-FX SEND LEVEL TO CHORUS [Pro]	
23 pp 59	00 00 01	00–7F	M-FX SEND LEVEL TO DELAY [Pro]	
23 pp 5B	00 00 01	00–7F	M-FX CONTROL SOURCE1 [Pro]	
23 pp 5C	00 00 01	00–7F	M-FX CONTROL DEPTH1 [Pro]	
23 pp 5D	00 00 01	00–7F	M-FX CONTROL SOURCE [Pro]	
23 pp 5E	00 00 01	00–7F	M-FX CONTROL DEPTH2 [Pro]	
23 pp 5F	00 00 01	00–7F	M-FX SEND EQ SWITCH [Pro]	

* In the case of Mode 2 (Double Module mode), the Multi-effect cannot be used for Parts with a CHANNEL MSG RX PORT (page 185) setting of PORT B.

○ **User Patch Part**

2a : Patch part number (Part1: a=4, Part2: a=6)
2b : Patch part number (Part1: b=5, Part2: b=7)
pp : Patch number (00–0F : 1-16)

Address (H)	Size (H)	Data (H)	Parameter	Description
2a pp 00	00 00 02	00–7F	TONE NUMBER [Pro]	CC#00 VALUE: 0–127
2a pp 01#		00–7F		P.C. VALUE: 1–128
2a pp 02	00 00 01	00–10	Rx. CHANNEL [Pro]	1–16, OFF
2a pp 03	00 00 01	00–01	Rx. PITCH BEND [Pro]	OFF / ON
2a pp 04	00 00 01	00–01	Rx. CH PRESSURE (CAf) [Pro]	OFF / ON
2a pp 05	00 00 01	00–01	Rx. PROGRAM CHANGE [Pro]	OFF / ON
2a pp 06	00 00 01	00–01	Rx. CONTROL CHANGE [Pro]	OFF / ON
2a pp 07	00 00 01	00–01	Rx. POLY PRESSURE (PAf) [Pro]	OFF / ON
2a pp 08	00 00 01	00–01	Rx. NOTE MESSAGE [Pro]	OFF / ON
2a pp 09	00 00 01	00–01	Rx. RPN [Pro]	OFF / ON
2a pp 0A	00 00 01	00–01	Rx. NRPN [Pro]	OFF / ON
2a pp 0B	00 00 01	00–01	Rx. MODULATION [Pro]	OFF / ON
2a pp 0C	00 00 01	00–01	Rx. VOLUME [Pro]	OFF / ON
2a pp 0D	00 00 01	00–01	Rx. PANPOT [Pro]	OFF / ON
2a pp 0E	00 00 01	00–01	Rx. EXPRESSION [Pro]	OFF / ON
2a pp 0F	00 00 01	00–01	Rx. HOLD1 [Pro]	OFF / ON
2a pp 10	00 00 01	00–01	Rx. PORTAMENTO [Pro]	OFF / ON
2a pp 11	00 00 01	00–01	Rx. SOSTENUTO [Pro]	OFF / ON
2a pp 12	00 00 01	00–01	Rx. SOFT [Pro]	OFF / ON
2a pp 13	00 00 01	00–01	MONO/POLY MODE [Pro]	Mono / Poly
2a pp 14	00 00 01	00–02	ASSIGN MODE [Pro]	SINGLE–FULL MULTI
2a pp 15	00 00 01	00–02	USE FOR RHYTHM PART [Pro]	OFF–RHYTHM MODULE2
2a pp 16	00 00 01	28–58	PITCH KEY SHIFT [Pro]	-24– +24 [semitones]
2a pp 17	00 00 02	08–F8	PITCH OFFSET FINE [Pro]	-12.0– +12.0 [Hz]
2a pp 19	00 00 01	00–7F	PART LEVEL [Pro]	0–127
2a pp 1A	00 00 01	00–7F	VELOCITY SENSE DEPTH [Pro]	0–127
2a pp 1B	00 00 01	00–7F	VELOCITY SENSE OFFSET [Pro]	0–127
2a pp 1C	00 00 01	00–7F	PART PANPOT [Pro]	Random,L63–R63
2a pp 1D	00 00 01	00–7F	KEYBOARD RANGE LOW [Pro]	0–127
2a pp 1E	00 00 01	00–7F	KEYBOARD RANGE HIGH [Pro]	0–127
2a pp 1F	00 00 01	00–5F	CC1 CONTROLLER NUMBER [Pro]	0–95
2a pp 20	00 00 01	00–5F	CC2 CONTROLLER NUMBER [Pro]	0–95
2a pp 21	00 00 01	00–7F	CHORUS SEND LEVEL [Pro]	0–127
2a pp 22	00 00 01	00–7F	REVERB SEND LEVEL [Pro]	0–127
2a pp 23	00 00 01	00–01	Rx.BANK SELECT [Pro]	OFF / ON
2a pp 24	00 00 01	00–01	RX BANK SELECT LSB [Pro]	OFF / ON
2a pp 2A	00 00 02	00 00–7F 7F	PITCH FINE TUNE [Pro]	-100–0– +100[cent]
2a pp 2B#				
2a pp 2C	00 00 01	00–7F	DELAY SEND LEVEL [Pro]	0–127

* In MODE-2 (Double module mode), DELAY SEND LEVEL cannot be used.

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MIDI Implementation

Address (H)	Size (H)	Data (H)	Parameter	Description
2a pp 30	00 00 01	00–7F	TONE MODIFY1 [Pro] Vibrato Rate	-64– +63
2a pp 31	00 00 01	00–7F	TONE MODIFY2 [Pro] Vibrato Depth	-64– +63
2a pp 32	00 00 01	00–7F	TONE MODIFY3 [Pro] TVF Cutoff Freq	-64– +63
2a pp 33	00 00 01	00–7F	TONE MODIFY4 [Pro] TVF Resonance	-64– +63
2a pp 34	00 00 01	00–7F	TONE MODIFY5 [Pro] TVF&TVA Env.attack	-64– +63
2a pp 35	00 00 01	00–7F	TONE MODIFY6 [Pro] TVF&TVA Env.decay	-64– +63
2a pp 36	00 00 01	00–7F	TONE MODIFY7 [Pro] TVF&TVA Env.release	-64– +63
2a pp 37	00 00 01	00–7F	TONE MODIFY8 [Pro] Vibrato Delay	-64– +63
2a pp 40 2a pp : #	00 00 0C	00–7F	SCALE TUNING C [Pro]	-64– +63 [cent]
2a pp 4B#		00–7F	SCALE TUNING B [Pro]	-64– +63 [cent]
2a pp 50	00 00 01	28–58	MOD PITCH CONTROL [Pro]	-24– +24 [semitones]
2a pp 51	00 00 01	00–7F	MOD TVF CUTOFF CONTROL [Pro]	-9600– +9600 [cent]
2a pp 52	00 00 01	00–7F	MOD AMPLITUDE CONTROL [Pro]	-100.0– +100.0 [%]
2a pp 53	00 00 01	00–7F	MOD LFO1 RATE CONTROL [Pro]	-10.0– +10.0 [Hz]
2a pp 54	00 00 01	00–7F	MOD LFO1 PITCH DEPTH [Pro]	0–600 [cent]
2a pp 55	00 00 01	00–7F	MOD LFO1 TVF DEPTH [Pro]	0–2400 [cent]
2a pp 56	00 00 01	00–7F	MOD LFO1 TVA DEPTH [Pro]	0–100.0 [%]
2a pp 57	00 00 01	00–7F	MOD LFO2 RATE CONTROL [Pro]	-10.0– +10.0 [Hz]
2a pp 58	00 00 01	00–7F	MOD LFO2 PITCH DEPTH [Pro]	0–600 [cent]
2a pp 59	00 00 01	00–7F	MOD LFO2 TVF DEPTH [Pro]	0–2400 [cent]
2a pp 5A	00 00 01	00–7F	MOD LFO2 TVA DEPTH [Pro]	0–100.0 [%]
2a pp 60	00 00 01	40–58	BEND PITCH CONTROL [Pro]	0–24 [semitones]
2a pp 61	00 00 01	00–7F	BEND TVF CUTOFF CONTROL [Pro]	-9600– +9600 [cent]
2a pp 62	00 00 01	00–7F	BEND AMPLITUDE CONTROL [Pro]	-100.0– +100.0 [%]
2a pp 63	00 00 01	00–7F	BEND LFO1 RATE CONTROL [Pro]	-10.0– +10.0 [Hz]
2a pp 64	00 00 01	00–7F	BEND LFO1 PITCH DEPTH [Pro]	0–600 [cent]
2a pp 65	00 00 01	00–7F	BEND LFO1 TVF DEPTH [Pro]	0–2400 [cent]
2a pp 66	00 00 01	00–7F	BEND LFO1 TVA DEPTH [Pro]	0–100.0 [%]
2a pp 67	00 00 01	00–7F	BEND LFO2 RATE CONTROL [Pro]	-10.0– +10.0 [Hz]
2a pp 68	00 00 01	00–7F	BEND LFO2 PITCH DEPTH [Pro]	0–600 [cent]
2a pp 69	00 00 01	00–7F	BEND LFO2 TVF DEPTH [Pro]	0–2400 [cent]
2a pp 6A	00 00 01	00–7F	BEND LFO2 TVA DEPTH [Pro]	0–100.0 [%]
2a pp 70	00 00 01	28–58	CAf PITCH CONTROL [Pro]	-24– +24 [semitones]
2a pp 71	00 00 01	00–7F	CAf TVF CUTOFF CONTROL [Pro]	-9600– +9600 [cent]
2a pp 72	00 00 01	00–7F	CAf AMPLITUDE CONTROL [Pro]	-100.0– +100.0 [%]
2a pp 73	00 00 01	00–7F	CAf LFO1 RATE CONTROL [Pro]	-10.0– +10.0 [Hz]
2a pp 74	00 00 01	00–7F	CAf LFO1 PITCH DEPTH [Pro]	0–600 [cent]
2a pp 75	00 00 01	00–7F	CAf LFO1 TVF DEPTH [Pro]	0–2400 [cent]
2a pp 76	00 00 01	00–7F	CAf LFO1 TVA DEPTH [Pro]	0–100.0 [%]
2a pp 77	00 00 01	00–7F	CAf LFO2 RATE CONTROL [Pro]	-10.0– +10.0 [Hz]
2a pp 78	00 00 01	00–7F	CAf LFO2 PITCH DEPTH [Pro]	0–600 [cent]
2a pp 79	00 00 01	00–7F	CAf LFO2 TVF DEPTH [Pro]	0–2400 [cent]
2a pp 7A	00 00 01	00–7F	CAf LFO2 TVA DEPTH [Pro]	0–100.0 [%]
2b pp 00	00 00 01	28–58	PAf PITCH CONTROL [Pro]	-24– +24 [semitones]
2b pp 01	00 00 01	00–7F	PAf TVF CUTOFF CONTROL [Pro]	-9600– +9600 [cent]
2b pp 02	00 00 01	00–7F	PAf AMPLITUDE CONTROL [Pro]	-100.0– +100.0 [%]
2b pp 03	00 00 01	00–7F	PAf LFO1 RATE CONTROL [Pro]	-10.0– +10.0 [Hz]
2b pp 04	00 00 01	00–7F	PAf LFO1 PITCH DEPTH [Pro]	0–600 [cent]
2b pp 05	00 00 01	00–7F	PAf LFO1 TVF DEPTH [Pro]	0–2400 [cent]
2b pp 06	00 00 01	00–7F	PAf LFO1 TVA DEPTH [Pro]	0–100.0 [%]
2b pp 07	00 00 01	00–7F	PAf LFO2 RATE CONTROL [Pro]	-10.0– +10.0 [Hz]
2b pp 08	00 00 01	00–7F	PAf LFO2 PITCH DEPTH [Pro]	0–600 [cent]
2b pp 09	00 00 01	00–7F	PAf LFO2 TVF DEPTH [Pro]	0–2400 [cent]
2b pp 0A	00 00 01	00–7F	PAf LFO2 TVA DEPTH [Pro]	0–100.0 [%]
2b pp 10	00 00 01	28–58	CC1 PITCH CONTROL [Pro]	-24– +24 [semitones]
2b pp 11	00 00 01	00–7F	CC1 TVF CUTOFF CONTROL [Pro]	-9600– +9600 [cent]
2b pp 12	00 00 01	00–7F	CC1 AMPLITUDE CONTROL [Pro]	-100.0– +100.0 [%]
2b pp 13	00 00 01	00–7F	CC1 LFO1 RATE CONTROL [Pro]	-10.0– +10.0 [Hz]
2b pp 14	00 00 01	00–7F	CC1 LFO1 PITCH DEPTH [Pro]	0–600 [cent]
2b pp 15	00 00 01	00–7F	CC1 LFO1 TVF DEPTH [Pro]	0–2400 [cent]
2b pp 16	00 00 01	00–7F	CC1 LFO1 TVA DEPTH [Pro]	0–100.0 [%]
2b pp 17	00 00 01	00–7F	CC1 LFO2 RATE CONTROL [Pro]	-10.0– +10.0 [Hz]
2b pp 18	00 00 01	00–7F	CC1 LFO2 PITCH DEPTH [Pro]	0–600 [cent]
2b pp 19	00 00 01	00–7F	CC1 LFO2 TVF DEPTH [Pro]	0–2400 [cent]
2b pp 1A	00 00 01	00–7F	CC1 LFO2 TVA DEPTH [Pro]	0–100.0 [%]

Address (H)	Size (H)	Data (H)	Parameter	Description
2b pp 20	00 00 01	28–58	CC2 PITCH CONTROL [Pro]	-24– +24 [semitones]
2b pp 21	00 00 01	00–7F	CC2 TVF CUTOFF CONTROL [Pro]	-9600– +9600 [cent]
2b pp 22	00 00 01	00–7F	CC2 AMPLITUDE CONTROL [Pro]	-100.0– +100.0 [%]
2b pp 23	00 00 01	00–7F	CC2 LFO1 RATE CONTROL [Pro]	-10.0– +10.0 [Hz]
2b pp 24	00 00 01	00–7F	CC2 LFO1 PITCH DEPTH [Pro]	0–600 [cent]
2b pp 25	00 00 01	00–7F	CC2 LFO1 TVF DEPTH [Pro]	0–2400 [cent]
2b pp 26	00 00 01	00–7F	CC2 LFO1 TVA DEPTH [Pro]	0–100.0 [%]
2b pp 27	00 00 01	00–7F	CC2 LFO2 RATE CONTROL [Pro]	-10.0– +10.0 [Hz]
2b pp 28	00 00 01	00–7F	CC2 LFO2 PITCH DEPTH [Pro]	0–600 [cent]
2b pp 29	00 00 01	00–7F	CC2 LFO2 TVF DEPTH [Pro]	0–2400 [cent]
2b pp 2A	00 00 01	00–7F	CC2 LFO2 TVA DEPTH [Pro]	0–100.0 [%]
2b pp 30	00 00 01	00–03	TONE SET NUMBER [Pro]	TONE SET 0–3
2b pp 31	00 00 01	01–03	TONE SET-0 NUMBER [Pro]	TONE SET 1–TONE SET 3
2b pp 33	00 00 01	00–01	EQ ON/OFF [Pro]	OFF / ON
2b pp 34	00 00 01	00–03	OUTPUT ASSIGN [Pro]	OUTPUT-1–OUTPUT-2R
2b pp 35	00 00 01	00–01	PART M-FX ASSIGN [Pro]	BYPASS–M-FX

<Model ID = 45H>

● User Performance [880]

The values of all System, Performance Common and Performance Part parameters can be modified as desired and stored as a Performance. A Performance that has been stored in this way is called a User Performance. Eight User Performances can be stored.

○ User Performance System [880]

P: Performance number (0–7H : 1-8)

Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
50 0p 00 7F	00 00 00 01	00–01	SYSTEM MODE SET [880]	00: MODE-1 (Single module mode)	00	MODE-1
				01: MODE-2 (Double module mode)		
				(Rx. only)		
			CHANNEL MSG RX PORT [880]			
50 0p 01 00	00 00 00 01	00–01	BLOCK00	PORT A–B	00	PORT A
:	:	:	:	:		
50 0p 01 0F	00 00 00 01	00–01	BLOCK0F	PORT A–B	00	PORT A
50 0p 01 10	00 00 00 01	00–01	BLOCK10	PORT A–B	01	PORT B
:	:	:	:	:		
50 0p 01 1F	00 00 00 01	00–01	BLOCK1F	PORT A–B	01	PORT B

○ User Perfiramnce Common A [880]

p: Performance number (0–7H : 1-8)

Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
51 0p 00 00	00 00 00 04	0018–07E8	MASTER TUNE [880]	-100.0– +100.0 [cent]		
51 0p 00 01#				Use nibblized data		
51 0p 00 02#						
51 0p 00 03#						
51 0p 00 04	00 00 00 01	00–7F	MASTER VOLUME [880]	0–127		
51 0p 00 05	00 00 00 01	28–58	MASTER KEY-SHIFT [880]	-24– +24 [semitones]		
51 0p 00 06	00 00 00 01	01–7F	MASTER PAN [880]	-63– +63		
51 0p 01 00	00 00 00 10	20–7F	PATCH NAME [880]	16 ASCII Characters		
51 0p 01 : #						
51 0p 01 0F#						
51 0p 01 30	00 00 00 01	00–07	REVERB MACRO [880]	Room 1–Panning Delay		
51 0p 01 31	00 00 00 01	00–07	REVERB CHARACTER [880]	0–7		
51 0p 01 32	00 00 00 01	00–07	REVERB PRE-LPF [880]	0–7		
51 0p 01 33	00 00 00 01	00–7F	REVERB LEVEL [880]	0–127		
51 0p 01 34	00 00 00 01	00–7F	REVERB TIME [880]	0–127		
51 0p 01 35	00 00 00 01	00–7F	REVERB DELAY FEEDBACK [880]	0–127		
51 0p 01 37	00 00 00 01	00–7F	REVERB PREDELAY TIME [880]	0–127 [msec]		

* In MODE-2 (Double module mode), REVERB PREDELAY TIME cannot be used.

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Address (H)	Size (H)	Data (H)	Parameter	Description	Default Value (H)	Description
51 0p 01 38	00 00 00 01	00–07	CHORUS MACRO [880]	Chorus 1–Short Delay FB		
51 0p 01 39	00 00 00 01	00–07	CHORUS PRE-LPF [880]	0–7		
51 0p 01 3A	00 00 00 01	00–7F	CHORUS LEVEL [880]	0–127		
51 0p 01 3B	00 00 00 01	00–7F	CHORUS FEEDBACK [880]	0–127		
51 0p 01 3C	00 00 00 01	00–7F	CHORUS DELAY [880]	0–127		
51 0p 01 3D	00 00 00 01	00–7F	CHORUS RATE [880]	0–127		
51 0p 01 3E	00 00 00 01	00–7F	CHORUS DEPTH [880]	0–127		
51 0p 01 3F	00 00 00 01	00–7F	CHORUS SEND LEVEL TO REVERB [880]	0–127		
51 0p 01 40	00 00 00 01	00–7F	CHORUS SEND LEVEL TO DELAY [880]	0–127		

* In MODE-2 (Double module mode), CHORUS SEND LEVEL TO DELAY cannot be used.

Address (H)	Size (H)	Data (H)	Parameter	Description		
51 0p 01 50	00 00 00 01	00–09	DELAY MACRO [880]	Delay 1–Panning Repeat		
51 0p 01 51	00 00 00 01	00–07	DELAY PRE-LPF [880]	0–7		
51 0p 01 52	00 00 00 01	01–73	DELAY TIME CENTER [880]	0.1ms–1sec		
51 0p 01 53	00 00 00 01	01–78	DELAY TIME RATIO LEFT [880]	4–500%		
51 0p 01 54	00 00 00 01	01–78	DELAY TIME RATIO RIGHT [880]	4–500%		
51 0p 01 55	00 00 00 01	00–7F	DELAY LEVEL CENTER [880]	0–127		
51 0p 01 56	00 00 00 01	00–7F	DELAY LEVEL LEFT [880]	0–127		
51 0p 01 57	00 00 00 01	00–7F	DELAY LEVEL RIGHT [880]	0–127		
51 0p 01 58	00 00 00 01	00–7F	DELAY LEVEL [880]	0–127		
51 0p 01 59	00 00 00 01	00–7F	DELAY FEEDBACK [880]	-64– +63		
51 0p 01 5A	00 00 00 01	00–7F	DELAY SENDLEVEL TO REVERB [880]	0–127		

* In MODE-2 (Double module mode), Delay cannot be used.

Address (H)	Size (H)	Data (H)	Parameter	Description		
51 0p 02 00	00 00 00 01	00–01	EQ LOW FREQ [880]	200Hz, 400Hz		
51 0p 02 01	00 00 00 01	34–4C	EQ LOW GAIN [880]	-12– +12dB		
51 0p 02 02	00 00 00 01	00–01	EQ HIGH FREQ [880]	3kHz, 6kHz		
51 0p 02 03	00 00 00 01	34–4C	EQ HIGH GAIN [880]	-12– +12dB		

* In MODE-2 (Double module mode), EQ(equalizer) cannot be used.

Address (H)	Size (H)	Data (H)	Parameter	Description		
51 0p 03 00	00 00 00 02	00–7F	M-FX TYPE [880]			
51 0p 03 01#						
51 0p 03 03	00 00 00 01	00–7F	M-FX PARAMETER 1 [880]			
51 0p 03 04	00 00 00 01	00–7F	M-FX PARAMETER 2 [880]			
51 0p 03 05	00 00 00 01	00–7F	M-FX PARAMETER 3 [880]			
51 0p 03 06	00 00 00 01	00–7F	M-FX PARAMETER 4 [880]			
51 0p 03 07	00 00 00 01	00–7F	M-FX PARAMETER 5 [880]			
51 0p 03 08	00 00 00 01	00–7F	M-FX PARAMETER 6 [880]			
51 0p 03 09	00 00 00 01	00–7F	M-FX PARAMETER 7 [880]			
51 0p 03 0A	00 00 00 01	00–7F	M-FX PARAMETER 8 [880]			
51 0p 03 0B	00 00 00 01	00–7F	M-FX PARAMETER 9 [880]			
51 0p 03 0C	00 00 00 01	00–7F	M-FX PARAMETER 10 [880]			
51 0p 03 0D	00 00 00 01	00–7F	M-FX PARAMETER 11 [880]			
51 0p 03 0E	00 00 00 01	00–7F	M-FX PARAMETER 12 [880]			
51 0p 03 0F	00 00 00 01	00–7F	M-FX PARAMETER 13 [880]			
51 0p 03 00	00 00 00 01	00–7F	M-FX PARAMETER 14 [880]			
51 0p 03 11	00 00 00 01	00–7F	M-FX PARAMETER 15 [880]			
51 0p 03 12	00 00 00 01	00–7F	M-FX PARAMETER 16 [880]			
51 0p 03 13	00 00 00 01	00–7F	M-FX PARAMETER 17 [880]			
51 0p 03 14	00 00 00 01	00–7F	M-FX PARAMETER 18 [880]			
51 0p 03 15	00 00 00 01	00–7F	M-FX PARAMETER 19 [880]			
51 0p 03 16	00 00 00 01	00–7F	M-FX PARAMETER 20 [880]			
51 0p 03 17	00 00 00 01	00–7F	M-FX SEND LEVEL TO REVERB [880]			
51 0p 03 18	00 00 00 01	00–7F	M-FX SEND LEVEL TO CHORUS [880]			
51 0p 03 19	00 00 00 01	00–7F	M-FX SEND LEVEL TO DELAY [880]			
51 0p 03 1B	00 00 00 01	00–7F	M-FX CONTROL SOURCE1 [880]			
51 0p 03 1C	00 00 00 01	00–7F	M-FX CONTROL DEPTH1 [880]			
51 0p 03 1D	00 00 00 01	00–7F	M-FX CONTROL SOURCE [880]			
51 0p 03 1E	00 00 00 01	00–7F	M-FX CONTROL DEPTH2 [880]			
51 0p 03 1F	00 00 00 01	00–7F	M-FX SEND EQ SWITCH [880]			

* In the case of Mode-2 (Double module mode), the Multi-effects cannot be used for Parts with a CHANNEL MSG PORT (page 195) setting of PORT B.

○ User Performance Common B [880]

* Parameters of addresses 52 ** ** ** for MODEL ID = 45H are in the same format as addresses 51 ** ** **.

○ User Performance Part A [880]

The relation between Part number and Block number is as follows.

x...BLOCK NUMBER (0–F),	Part 1	(default MIDIch = 1)	x=1
	Part 2	(default MIDIch = 2)	x=2
	:	:	
	Part 9	(default MIDIch = 9)	x=9
	Part10	(default MIDIch =10)	x=0
	Part11	(default MIDIch =11)	x=A
	Part12	(default MIDIch =12)	x=B
	:	:	
	Part16	(default MIDIch =16)	x=F

p: Performance number (0–7H : 1-8)

Address (H)	Size (H)	Data (H)	Parameter	Description
53 0p 1x 00	00 00 00 02	00–7F	TONE NUMBER [880]	CC#00 VALUE 0–127
53 0p 1x 01#		00–7F		P.C. VALUE 1–128
53 0p 1x 02	00 00 00 01	00–10	Rx. CHANNEL [880]	1–16, OFF
53 0p 1x 03	00 00 00 01	00–01	Rx. PITCH BEND [880]	OFF / ON
53 0p 1x 04	00 00 00 01	00–01	Rx. CH PRESSURE (CAf) [880]	OFF / ON
53 0p 1x 05	00 00 00 01	00–01	Rx. PROGRAM CHANGE [880]	OFF / ON
53 0p 1x 06	00 00 00 01	00–01	Rx. CONTROL CHANGE [880]	OFF / ON
53 0p 1x 07	00 00 00 01	00–01	Rx. POLY PRESSURE (PAf) [880]	OFF / ON
53 0p 1x 08	00 00 00 01	00–01	Rx. NOTE MESSAGE [880]	OFF / ON
53 0p 1x 09	00 00 00 01	00–01	Rx. RPN [880]	OFF / ON
53 0p 1x 0A	00 00 00 01	00–01	Rx. NRPN [880]	OFF / ON
53 0p 1x 0B	00 00 00 01	00–01	Rx. MODULATION [880]	OFF / ON
53 0p 1x 0C	00 00 00 01	00–01	Rx. VOLUME [880]	OFF / ON
53 0p 1x 0D	00 00 00 01	00–01	Rx. PANPOT [880]	OFF / ON
53 0p 1x 0E	00 00 00 01	00–01	Rx. EXPRESSION [880]	OFF / ON
53 0p 1x 0F	00 00 00 01	00–01	Rx. HOLD1 [880]	OFF / ON
53 0p 1x 10	00 00 00 01	00–01	Rx. PORTAMENTO [880]	OFF / ON
53 0p 1x 11	00 00 00 01	00–01	Rx. SOSTENUTO [880]	OFF / ON
53 0p 1x 12	00 00 00 01	00–01	Rx. SOFT [880]	OFF / ON
53 0p 1x 13	00 00 00 01	00–01	MONO/POLY MODE [880]	Mono / Poly
53 0p 1x 14	00 00 00 01	00–02	ASSIGN MODE [880]	SINGLE-FULL MULTI
53 0p 1x 15	00 00 00 01	00–02	USE FOR RHYTHM PART [880]	OFF–Rhythm Module2
53 0p 1x 16	00 00 00 01	28–58	PITCH KEY SHIFT [880]	-24– +24 [semitones]
53 0p 1x 17	00 00 00 02	08–F8	PITCH OFFSET FINE [880]	-12.0– +12.0 [Hz]
53 0p 1x 19	00 00 00 01	00–7F	PART LEVEL [880]	0–127
53 0p 1x 1A	00 00 00 01	00–7F	VELOCITY SENSE DEPTH [880]	0–127
53 0p 1x 1B	00 00 00 01	00–7F	VELOCITY SENSE OFFSET [880]	0–127
53 0p 1x 1C	00 00 00 01	00–7F	PART PANPOT [880]	Random,L63–R63
53 0p 1x 1D	00 00 00 01	00–7F	KEYBOARD RANGE LOW [880]	0–127
53 0p 1x 1E	00 00 00 01	00–7F	KEYBOARD RANGE HIGH [880]	0–127
53 0p 1x 1F	00 00 00 01	00–5F	CC1 CONTROLLER NUMBER [880]	0–95
53 0p 1x 20	00 00 00 01	00–5F	CC2 CONTROLLER NUMBER [880]	0–95
53 0p 1x 21	00 00 00 01	00–7F	CHORUS SEND LEVEL [880]	0–127
53 0p 1x 22	00 00 00 01	00–7F	REVERB SEND LEVEL [880]	0–127
53 0p 1x 23	00 00 00 01	00–01	Rx.BANK SELECT [880]	OFF / ON
53 0p 1x 24	00 00 00 01	00–01	RX BANK SELECT LSB [880]	OFF / ON
53 0p 1x 2A	00 00 00 02	00 00–7F 7F	PITCH FINE TUNE [880]	-100–0– +100 [cent]
53 0p 1x 2B#				
53 0p 1x 2C	00 00 00 01	00–7F	DELAY SEND LEVEL [880]	0–127

* In MODE-2 (Double module mode), DELAY SEND LEVEL cannot be used.

53 0p 1x 30	00 00 00 01	00–7F	TONE MODIFY1 [880] Vibrato Rate	-64– +63
53 0p 1x 31	00 00 00 01	00–7F	TONE MODIFY2 [880] Vibrato Depth	-64– +63
53 0p 1x 32	00 00 00 01	00–7F	TONE MODIFY3 [880] TVF Cutoff Freq	-64– +63
53 0p 1x 33	00 00 00 01	00–7F	TONE MODIFY4 [880] TVF Resonance	-64– +63
53 0p 1x 34	00 00 00 01	00–7F	TONE MODIFY5 [880] TVF&TVA Env.attack	-64– +63
53 0p 1x 35	00 00 00 01	00–7F	TONE MODIFY6 [880] TVF&TVA Env.decay	-64– +63
53 0p 1x 36	00 00 00 01	00–7F	TONE MODIFY7 [880] TVF&TVA Env.release	-64– +63
53 0p 1x 37	00 00 00 01	00–7F	TONE MODIFY8 [880] Vibrato Delay	-64– +63

Appendices

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Address (H)	Size (H)	Data (H)	Parameter	Description
53 0p 1x 40	00 00 00 0C	00–7F	SCALE TUNING C [880]	-64– +63 [cent]
53 0p 1x : #				
53 0p 1x 4B#		00–7F	SCALE TUNING B [880]	-64– +63 [cent]
53 0p 2x 00	00 00 00 01	28–58	MOD PITCH CONTROL [880]	-24– +24 [semitones]
53 0p 2x 01	00 00 00 01	00–7F	MOD TVF CUTOFF CONTROL [880]	-9600– +9600 [cent]
53 0p 2x 02	00 00 00 01	00–7F	MOD AMPLITUDE CONTROL [880]	-100.0– +100.0 [%]
53 0p 2x 03	00 00 00 01	00–7F	MOD LFO1 RATE CONTROL [880]	-10.0– +10.0 [Hz]
53 0p 2x 04	00 00 00 01	00–7F	MOD LFO1 PITCH DEPTH [880]	0–600 [cent]
53 0p 2x 05	00 00 00 01	00–7F	MOD LFO1 TVF DEPTH [880]	0–2400 [cent]
53 0p 2x 06	00 00 00 01	00–7F	MOD LFO1 TVA DEPTH [880]	0–100.0 [%]
53 0p 2x 07	00 00 00 01	00–7F	MOD LFO2 RATE CONTROL [880]	-10.0– +10.0 [Hz]
53 0p 2x 08	00 00 00 01	00–7F	MOD LFO2 PITCH DEPTH [880]	0–600 [cent]
53 0p 2x 09	00 00 00 01	00–7F	MOD LFO2 TVF DEPTH [880]	0–2400 [cent]
53 0p 2x 0A	00 00 00 01	00–7F	MOD LFO2 TVA DEPTH [880]	0–100.0 [%]
53 0p 2x 10	00 00 00 01	40–58	BEND PITCH CONTROL [880]	0–24 [semitones]
53 0p 2x 11	00 00 00 01	00–7F	BEND TVF CUTOFF CONTROL [880]	-9600– +9600 [cent]
53 0p 2x 12	00 00 00 01	00–7F	BEND AMPLITUDE CONTROL [880]	-100.0– +100.0 [%]
53 0p 2x 13	00 00 00 01	00–7F	BEND LFO1 RATE CONTROL [880]	-10.0– +10.0 [Hz]
53 0p 2x 14	00 00 00 01	00–7F	BEND LFO1 PITCH DEPTH [880]	0–600 [cent]
53 0p 2x 15	00 00 00 01	00–7F	BEND LFO1 TVF DEPTH [880]	0–2400 [cent]
53 0p 2x 16	00 00 00 01	00–7F	BEND LFO1 TVA DEPTH [880]	0–100.0 [%]
53 0p 2x 17	00 00 00 01	00–7F	BEND LFO2 RATE CONTROL [880]	-10.0– +10.0 [Hz]
53 0p 2x 18	00 00 00 01	00–7F	BEND LFO2 PITCH DEPTH [880]	0–600 [cent]
53 0p 2x 19	00 00 00 01	00–7F	BEND LFO2 TVF DEPTH [880]	0–2400 [cent]
53 0p 2x 1A	00 00 00 01	00–7F	BEND LFO2 TVA DEPTH [880]	0–100.0 [%]
53 0p 2x 20	00 00 00 01	28–58	CAf PITCH CONTROL [880]	-24– +24 [semitones]
53 0p 2x 21	00 00 00 01	00–7F	CAf TVF CUTOFF CONTROL [880]	-9600– +9600 [cent]
53 0p 2x 22	00 00 00 01	00–7F	CAf AMPLITUDE CONTROL [880]	-100.0– +100.0 [%]
53 0p 2x 23	00 00 00 01	00–7F	CAf LFO1 RATE CONTROL [880]	-10.0– +10.0 [Hz]
53 0p 2x 24	00 00 00 01	00–7F	CAf LFO1 PITCH DEPTH [880]	0–600 [cent]
53 0p 2x 25	00 00 00 01	00–7F	CAf LFO1 TVF DEPTH [880]	0–2400 [cent]
53 0p 2x 26	00 00 00 01	00–7F	CAf LFO1 TVA DEPTH [880]	0–100.0 [%]
53 0p 2x 27	00 00 00 01	00–7F	CAf LFO2 RATE CONTROL [880]	-10.0– +10.0 [Hz]
53 0p 2x 28	00 00 00 01	00–7F	CAf LFO2 PITCH DEPTH [880]	0–600 [cent]
53 0p 2x 29	00 00 00 01	00–7F	CAf LFO2 TVF DEPTH [880]	0–2400 [cent]
53 0p 2x 2A	00 00 00 01	00–7F	CAf LFO2 TVA DEPTH [880]	0–100.0 [%]
53 0p 2x 30	00 00 00 01	28–58	PAf PITCH CONTROL [880]	-24– +24 [semitones]
53 0p 2x 31	00 00 00 01	00–7F	PAf TVF CUTOFF CONTROL [880]	-9600– +9600 [cent]
53 0p 2x 32	00 00 00 01	00–7F	PAf AMPLITUDE CONTROL [880]	-100.0– +100.0 [%]
53 0p 2x 33	00 00 00 01	00–7F	PAf LFO1 RATE CONTROL [880]	-10.0– +10.0 [Hz]
53 0p 2x 34	00 00 00 01	00–7F	PAf LFO1 PITCH DEPTH [880]	0–600 [cent]
53 0p 2x 35	00 00 00 01	00–7F	PAf LFO1 TVF DEPTH [880]	0–2400 [cent]
53 0p 2x 36	00 00 00 01	00–7F	PAf LFO1 TVA DEPTH [880]	0–100.0 [%]
53 0p 2x 37	00 00 00 01	00–7F	PAf LFO2 RATE CONTROL [880]	-10.0– +10.0 [Hz]
53 0p 2x 38	00 00 00 01	00–7F	PAf LFO2 PITCH DEPTH [880]	0–600 [cent]
53 0p 2x 39	00 00 00 01	00–7F	PAf LFO2 TVF DEPTH [880]	0–2400 [cent]
53 0p 2x 3A	00 00 00 01	00–7F	PAf LFO2 TVA DEPTH [880]	0–100.0 [%]
53 0p 2x 40	00 00 00 01	28–58	CC1 PITCH CONTROL [880]	-24– +24 [semitones]
53 0p 2x 41	00 00 00 01	00–7F	CC1 TVF CUTOFF CONTROL [880]	-9600– +9600 [cent]
53 0p 2x 42	00 00 00 01	00–7F	CC1 AMPLITUDE CONTROL [880]	-100.0– +100.0 [%]
53 0p 2x 43	00 00 00 01	00–7F	CC1 LFO1 RATE CONTROL [880]	-10.0– +10.0 [Hz]
53 0p 2x 44	00 00 00 01	00–7F	CC1 LFO1 PITCH DEPTH [880]	0–600 [cent]
53 0p 2x 45	00 00 00 01	00–7F	CC1 LFO1 TVF DEPTH [880]	0–2400 [cent]
53 0p 2x 46	00 00 00 01	00–7F	CC1 LFO1 TVA DEPTH [880]	0–100.0 [%]
53 0p 2x 47	00 00 00 01	00–7F	CC1 LFO2 RATE CONTROL [880]	-10.0– +10.0 [Hz]
53 0p 2x 48	00 00 00 01	00–7F	CC1 LFO2 PITCH DEPTH [880]	0–600 [cent]
53 0p 2x 49	00 00 00 01	00–7F	CC1 LFO2 TVF DEPTH [880]	0–2400 [cent]
53 0p 2x 4A	00 00 00 01	00–7F	CC1 LFO2 TVA DEPTH [880]	0–100.0 [%]
53 0p 2x 50	00 00 00 01	28–58	CC2 PITCH CONTROL [880]	-24– +24 [semitones]
53 0p 2x 51	00 00 00 01	00–7F	CC2 TVF CUTOFF CONTROL [880]	-9600– +9600 [cent]
53 0p 2x 52	00 00 00 01	00–7F	CC2 AMPLITUDE CONTROL [880]	-100.0– +100.0 [%]
53 0p 2x 53	00 00 00 01	00–7F	CC2 LFO1 RATE CONTROL [880]	-10.0– +10.0 [Hz]
53 0p 2x 54	00 00 00 01	00–7F	CC2 LFO1 PITCH DEPTH [880]	0–600 [cent]
53 0p 2x 55	00 00 00 01	00–7F	CC2 LFO1 TVF DEPTH [880]	0–2400 [cent]
53 0p 2x 56	00 00 00 01	00–7F	CC2 LFO1 TVA DEPTH [880]	0–100.0 [%]
53 0p 2x 57	00 00 00 01	00–7F	CC2 LFO2 RATE CONTROL [880]	-10.0– +10.0 [Hz]
53 0p 2x 58	00 00 00 01	00–7F	CC2 LFO2 PITCH DEPTH [880]	0–600 [cent]
53 0p 2x 59	00 00 00 01	00–7F	CC2 LFO2 TVF DEPTH [880]	0–2400 [cent]
53 0p 2x 5A	00 00 00 01	00–7F	CC2 LFO2 TVA DEPTH [880]	0–100.0 [%]

Address (H)	Size (H)	Data (H)	Parameter	Description
53 0p 4x 00	00 00 00 01	00–03	TONE SET NUMBER [880]	TONE SET 0–3
53 0p 4x 01	00 00 00 01	01–03	TONE SET-0 NUMBER [880]	TONE SET 1–TONE SET 3
53 0p 4x 20	00 00 00 01	00–01	EQ ON/OFF [880]	OFF / ON
53 0p 4x 21	00 00 00 01	00–03	OUTPUT ASSIGN [880]	OUTPUT-1–OUTPUT-2R
53 0p 4x 22	00 00 00 01	00–01	PART M-FX ASSIGN [880]	BYPASS–M-FX

○ User Performance Part B [880]

* Parameters of addresses 54 ** ** ** for MODEL ID = 45H are in the same format as addresses 53 ** ** **.

● User Patch [880]

The values of all Performance Common and Performance Part parameters (only for Part01 through Part06) can be modified as desired and stored as a Patch. A Patch that was stored in this way is referred to as a User Patch. 128 User Patches can be stored.

○ User Patch Common [880]

pp: Patch number (00–7FH : 1-128)

Address (H)	Size (H)	Data (H)	Parameter	Description
61 pp 00 00	00 00 00 04	0018–07E8	MASTER TUNE [880]	-100.0–+100.0 [cent]
61 pp 00 01#				
61 pp 00 02#				
61 pp 00 03#				
61 pp 00 04	00 00 00 01	00–7F	MASTER VOLUME [880]	0–127
61 pp 00 05	00 00 00 01	28–58	MASTER KEY-SHIFT [880]	-24–+24 [semitones]
61 pp 00 06	00 00 00 01	01–7F	MASTER PAN [880]	-63–+63
61 pp 01 00	00 00 00 10	20–7F	PATCH NAME [880]	16 ASCII Characters
61 pp 01 : #				
61 pp 01 0F#				
61 pp 01 30	00 00 00 01	00–07	REVERB MACRO [880]	Room 1–PDelay
61 pp 01 31	00 00 00 01	00–07	REVERB CHARACTER [880]	0–7
61 pp 01 32	00 00 00 01	00–07	REVERB PRE-LPF [880]	0–7
61 pp 01 33	00 00 00 01	00–7F	REVERB LEVEL [880]	0–127
61 pp 01 34	00 00 00 01	00–7F	REVERB TIME [880]	0–127
61 pp 01 35	00 00 00 01	00–7F	REVERB DELAY FEEDBACK [880]	0–127
61 pp 01 37	00 00 00 01	00–7F	REVERB PREDELAY TIME [880]	0–127 [msec]

* In MODE-2 (Double module mode), REVERB PREDELAY TIME cannot be used.

Address (H)	Size (H)	Data (H)	Parameter	Description
61 pp 01 38	00 00 00 01	00–07	CHORUS MACRO [880]	Chorus 1–SDelay(FB)
61 pp 01 39	00 00 00 01	00–07	CHORUS PRE-LPF [880]	0–7
61 pp 01 3A	00 00 00 01	00–7F	CHORUS LEVEL [880]	0–127
61 pp 01 3B	00 00 00 01	00–7F	CHORUS FEEDBACK [880]	0–127
61 pp 01 3C	00 00 00 01	00–7F	CHORUS DELAY [880]	0–127
61 pp 01 3D	00 00 00 01	00–7F	CHORUS RATE [880]	0–127
61 pp 01 3E	00 00 00 01	00–7F	CHORUS DEPTH [880]	0–127
61 pp 01 3F	00 00 00 01	00–7F	CHORUS SEND LEVEL TO REVERB [880]	0–127
61 pp 01 40	00 00 00 01	00–7F	CHORUS SEND LEVEL TO DELAY [880]	0–127

* In MODE-2 (Double module mode), CHORUS SEND LEVEL TO DELAY cannot be used.

Address (H)	Size (H)	Data (H)	Parameter	Description
61 pp 01 50	00 00 00 01	00–09	DELAY MACRO [880]	Delay 1–Pan Repeat
61 pp 01 51	00 00 00 01	00–07	DELAY PRE-LPF [880]	0–7
61 pp 01 52	00 00 00 01	01–73	DELAY TIME CENTER [880]	0.1ms–1sec
61 pp 01 53	00 00 00 01	01–78	DELAY TIME RATIO LEFT [880]	4–500%
61 pp 01 54	00 00 00 01	01–78	DELAY TIME RATIO RIGHT [880]	4–500%
61 pp 01 55	00 00 00 01	00–7F	DELAY LEVEL CENTER [880]	0–127
61 pp 01 56	00 00 00 01	00–7F	DELAY LEVEL LEFT [880]	0–127
61 pp 01 57	00 00 00 01	00–7F	DELAY LEVEL RIGHT [880]	0–127
61 pp 01 58	00 00 00 01	00–7F	DELAY LEVEL [880]	0–127
61 pp 01 59	00 00 00 01	00–7F	DELAY FEEDBACK [880]	-64–+63
61 pp 01 5A	00 00 00 01	00–7F	DELAY SENDLEVEL TO REVERB [880]	0–127

* In MODE-2 (Double module mode), DELAY cannot be used.

Address (H)	Size (H)	Data (H)	Parameter	Description
61 pp 02 00	00 00 00 01	00–01	EQ LOW FREQ [880]	200Hz, 400Hz
61 pp 02 01	00 00 00 01	34–4C	EQ LOW GAIN [880]	-12–+12dB
61 pp 02 02	00 00 00 01	00–01	EQ HIGH FREQ [880]	3kHz, 6kHz
61 pp 02 03	00 00 00 01	34–4C	EQ HIGH GAIN [880]	-12–+12dB

* In MODE-2 (Double module mode), EQ cannot be used.

Address (H)	Size (H)	Data (H)	Parameter	Description
61 pp 03 00	00 00 00 02	00–7F	M-FX TYPE [880]	
61 pp 03 01#				
61 pp 03 03	00 00 00 01	00–7F	M-FX PARAMETER 1 [880]	
61 pp 03 04	00 00 00 01	00–7F	M-FX PARAMETER 2 [880]	
61 pp 03 05	00 00 00 01	00–7F	M-FX PARAMETER 3 [880]	
61 pp 03 06	00 00 00 01	00–7F	M-FX PARAMETER 4 [880]	
61 pp 03 07	00 00 00 01	00–7F	M-FX PARAMETER 5 [880]	
61 pp 03 08	00 00 00 01	00–7F	M-FX PARAMETER 6 [880]	
61 pp 03 09	00 00 00 01	00–7F	M-FX PARAMETER 7 [880]	
61 pp 03 0A	00 00 00 01	00–7F	M-FX PARAMETER 8 [880]	
61 pp 03 0B	00 00 00 01	00–7F	M-FX PARAMETER 9 [880]	
61 pp 03 0C	00 00 00 01	00–7F	M-FX PARAMETER 10 [880]	
61 pp 03 0D	00 00 00 01	00–7F	M-FX PARAMETER 11 [880]	
61 pp 03 0E	00 00 00 01	00–7F	M-FX PARAMETER 12 [880]	
61 pp 03 0F	00 00 00 01	00–7F	M-FX PARAMETER 13 [880]	
61 pp 03 10	00 00 00 01	00–7F	M-FX PARAMETER 14 [880]	
61 pp 03 11	00 00 00 01	00–7F	M-FX PARAMETER 15 [880]	
61 pp 03 12	00 00 00 01	00–7F	M-FX PARAMETER 16 [880]	
61 pp 03 13	00 00 00 01	00–7F	M-FX PARAMETER 17 [880]	
61 pp 03 14	00 00 00 01	00–7F	M-FX PARAMETER 18 [880]	
61 pp 03 15	00 00 00 01	00–7F	M-FX PARAMETER 19 [880]	
61 pp 03 16	00 00 00 01	00–7F	M-FX PARAMETER 20 [880]	
61 pp 03 17	00 00 00 01	00–7F	M-FX SEND LEVEL TO REVERB [880]	
61 pp 03 18	00 00 00 01	00–7F	M-FX SEND LEVEL TO CHORUS [880]	
61 pp 03 19	00 00 00 01	00–7F	M-FX SEND LEVEL TO DELAY [880]	
61 pp 03 1B	00 00 00 01	00–7F	M-FX CONTROL SOURCE1 [880]	
61 pp 03 1C	00 00 00 01	00–7F	M-FX CONTROL DEPTH1 [880]	
61 pp 03 1D	00 00 00 01	00–7F	M-FX CONTROL SOURCE [880]	
61 pp 03 1E	00 00 00 01	00–7F	M-FX CONTROL DEPTH2 [880]	
61 pp 03 1F	00 00 00 01	00–7F	M-FX SEND EQ SWITCH [880]	

* In the case of Mode 2 (Double module mode), the Multi effects cannot be used for Parts with a CHANNEL MSG RX PORT (page 195) setting of PORT B.

○ User Patch Part [880]

The relation between Part number and Block number is as follows.

x...BLOCK NUMBER (1–6),	Part 1	(default MIDIch = 1)	x=1
	Part 2	(default MIDIch = 2)	x=2
	:	:	
	Part 6	(default MIDIch = 6)	x=6

pp: Patch number (00–7FH : 1-128)

Address (H)	Size (H)	Data (H)	Parameter	Description
63 pp 1x 00	00 00 00 02	00–7F	TONE NUMBER [880]	CC#00 VALUE 0–127
63 pp 1x 01#		00–7F		P.C. VALUE 1–128
63 pp 1x 02	00 00 00 01	00–10	Rx. CHANNEL [880]	1–16, OFF
63 pp 1x 03	00 00 00 01	00–01	Rx. PITCH BEND [880]	OFF / ON
63 pp 1x 04	00 00 00 01	00–01	Rx. CH PRESSURE (CAf) [880]	OFF / ON
63 pp 1x 05	00 00 00 01	00–01	Rx. PROGRAM CHANGE [880]	OFF / ON
63 pp 1x 06	00 00 00 01	00–01	Rx. CONTROL CHANGE [880]	OFF / ON
63 pp 1x 07	00 00 00 01	00–01	Rx. POLY PRESSURE (PAf) [880]	OFF / ON
63 pp 1x 08	00 00 00 01	00–01	Rx. NOTE MESSAGE [880]	OFF / ON
63 pp 1x 09	00 00 00 01	00–01	Rx. RPN [880]	OFF / ON
63 pp 1x 0A	00 00 00 01	00–01	Rx. NRPN [880]	OFF / ON
63 pp 1x 0B	00 00 00 01	00–01	Rx. MODULATION [880]	OFF / ON
63 pp 1x 0C	00 00 00 01	00–01	Rx. VOLUME [880]	OFF / ON
63 pp 1x 0D	00 00 00 01	00–01	Rx. PANPOT [880]	OFF / ON
63 pp 1x 0E	00 00 00 01	00–01	Rx. EXPRESSION [880]	OFF / ON
63 pp 1x 0F	00 00 00 01	00–01	Rx. HOLD1 [880]	OFF / ON
63 pp 1x 10	00 00 00 01	00–01	Rx. PORTAMENTO [880]	OFF / ON
63 pp 1x 11	00 00 00 01	00–01	Rx. SOSTENUTO [880]	OFF / ON
63 pp 1x 12	00 00 00 01	00–01	Rx. SOFT [880]	OFF / ON
63 pp 1x 13	00 00 00 01	00–01	MONO/POLY MODE [880]	Mono / Poly
63 pp 1x 14	00 00 00 01	00–02	ASSIGN MODE [880]	SINGLE-FULL MULTI
63 pp 1x 15	00 00 00 01	00–02	USE FOR RHYTHM PART [880]	OFF-Rhythm Module2
63 pp 1x 16	00 00 00 01	28–58	PITCH KEY SHIFT [880]	-24- +24 [semitones]
63 pp 1x 17	00 00 00 02	08–F8	PITCH OFFSET FINE [880]	-12.0- +12.0 [Hz]
63 pp 1x 19	00 00 00 01	00–7F	PART LEVEL [880]	0–127
63 pp 1x 1A	00 00 00 01	00–7F	VELOCITY SENSE DEPTH [880]	0–127
63 pp 1x 1B	00 00 00 01	00–7F	VELOCITY SENSE OFFSET [880]	0–127
63 pp 1x 1C	00 00 00 01	00–7F	PART PANPOT [880]	Random,L63–R63
63 pp 1x 1D	00 00 00 01	00–7F	KEYBOARD RANGE LOW [880]	0–127
63 pp 1x 1E	00 00 00 01	00–7F	KEYBOARD RANGE HIGH [880]	0–127
63 pp 1x 1F	00 00 00 01	00–5F	CC1 CONTROLLER NUMBER [880]	0–95
63 pp 1x 20	00 00 00 01	00–5F	CC2 CONTROLLER NUMBER [880]	0–95

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Address (H)	Size (H)	Data (H)	Parameter	Description
63 pp 1x 21	00 00 00 01	00–7F	CHORUS SEND LEVEL [880]	0–127
63 pp 1x 22	00 00 00 01	00–7F	REVERB SEND LEVEL [880]	0–127
63 pp 1x 23	00 00 00 01	00–01	Rx.BANK SELECT [880]	OFF / ON
63 pp 1x 24	00 00 00 01	00–01	RX BANK SELECT LSB [880]	OFF / ON
63 pp 1x 2A	00 00 00 02	00 00–7F 7F	PITCH FINE TUNE [880]	-100–0– +100 [cent]
63 pp 1x 2B#				
63 pp 1x 2C	00 00 00 01	00–7F	DELAY SEND LEVEL [880]	0–127

* In MODE-2 (Double module mode), DELAY SEND LEVEL cannot be used.

Address	Size	Data	Parameter	Description
63 pp 1x 30	00 00 00 01	00–7F	TONE MODIFY1 [880] Vibrato Rate	-64– +63
63 pp 1x 31	00 00 00 01	00–7F	TONE MODIFY2 [880] Vibrato Depth	-64– +63
63 pp 1x 32	00 00 00 01	00–7F	TONE MODIFY3 [880] TVF Cutoff Freq	-64– +63
63 pp 1x 33	00 00 00 01	00–7F	TONE MODIFY4 [880] TVF Resonance	-64– +63
63 pp 1x 34	00 00 00 01	00–7F	TONE MODIFY5 [880] TVF&TVA Env.attack	-64– +63
63 pp 1x 35	00 00 00 01	00–7F	TONE MODIFY6 [880] TVF&TVA Env.decay	-64– +63
63 pp 1x 36	00 00 00 01	00–7F	TONE MODIFY7 [880] TVF&TVA Env.release	-64– +63
63 pp 1x 37	00 00 00 01	00–7F	TONE MODIFY8 [880] Vibrato Delay	-64– +63
63 pp 1x 40	00 00 00 0C	00–7F	SCALE TUNING C [880]	-64– +63 [cent]
63 pp 1x : #				
63 pp 1x 4B#		00–7F	SCALE TUNING B [880]	-64– +63 [cent]
63 pp 2x 00	00 00 00 01	28–58	MOD PITCH CONTROL [880]	-24– +24 [semitones]
63 pp 2x 01	00 00 00 01	00–7F	MOD TVF CUTOFF CONTROL [880]	-9600– +9600 [cent]
63 pp 2x 02	00 00 00 01	00–7F	MOD AMPLITUDE CONTROL [880]	-100.0– +100.0 [%]
63 pp 2x 03	00 00 00 01	00–7F	MOD LFO1 RATE CONTROL [880]	-10.0– +10.0 [Hz]
63 pp 2x 04	00 00 00 01	00–7F	MOD LFO1 PITCH DEPTH [880]	0–600 [cent]
63 pp 2x 05	00 00 00 01	00–7F	MOD LFO1 TVF DEPTH [880]	0–2400 [cent]
63 pp 2x 06	00 00 00 01	00–7F	MOD LFO1 TVA DEPTH [880]	0–100.0 [%]
63 pp 2x 07	00 00 00 01	00–7F	MOD LFO2 RATE CONTROL [880]	-10.0– +10.0 [Hz]
63 pp 2x 08	00 00 00 01	00–7F	MOD LFO2 PITCH DEPTH [880]	0–600 [cent]
63 pp 2x 09	00 00 00 01	00–7F	MOD LFO2 TVF DEPTH [880]	0–2400 [cent]
63 pp 2x 0A	00 00 00 01	00–7F	MOD LFO2 TVA DEPTH [880]	0–100.0 [%]
63 pp 2x 10	00 00 00 01	40–58	BEND PITCH CONTROL [880]	0–24 [semitones]
63 pp 2x 11	00 00 00 01	00–7F	BEND TVF CUTOFF CONTROL [880]	-9600– +9600 [cent]
63 pp 2x 12	00 00 00 01	00–7F	BEND AMPLITUDE CONTROL [880]	-100.0– +100.0 [%]
63 pp 2x 13	00 00 00 01	00–7F	BEND LFO1 RATE CONTROL [880]	-10.0– +10.0 [Hz]
63 pp 2x 14	00 00 00 01	00–7F	BEND LFO1 PITCH DEPTH [880]	0–600 [cent]
63 pp 2x 15	00 00 00 01	00–7F	BEND LFO1 TVF DEPTH [880]	0–2400 [cent]
63 pp 2x 16	00 00 00 01	00–7F	BEND LFO1 TVA DEPTH [880]	0–100.0 [%]
63 pp 2x 17	00 00 00 01	00–7F	BEND LFO2 RATE CONTROL [880]	-10.0– +10.0 [Hz]
63 pp 2x 18	00 00 00 01	00–7F	BEND LFO2 PITCH DEPTH [880]	0–600 [cent]
63 pp 2x 19	00 00 00 01	00–7F	BEND LFO2 TVF DEPTH [880]	0–2400 [cent]
63 pp 2x 1A	00 00 00 01	00–7F	BEND LFO2 TVA DEPTH [880]	0–100.0 [%]
63 pp 2x 20	00 00 00 01	28–58	CAf PITCH CONTROL [880]	-24– +24 [semitones]
63 pp 2x 21	00 00 00 01	00–7F	CAf TVF CUTOFF CONTROL [880]	-9600– +9600 [cent]
63 pp 2x 22	00 00 00 01	00–7F	CAf AMPLITUDE CONTROL [880]	-100.0– +100.0 [%]
63 pp 2x 23	00 00 00 01	00–7F	CAf LFO1 RATE CONTROL [880]	-10.0– +10.0 [Hz]
63 pp 2x 24	00 00 00 01	00–7F	CAf LFO1 PITCH DEPTH [880]	0–600 [cent]
63 pp 2x 25	00 00 00 01	00–7F	CAf LFO1 TVF DEPTH [880]	0–2400 [cent]
63 pp 2x 26	00 00 00 01	00–7F	CAf LFO1 TVA DEPTH [880]	0–100.0 [%]
63 pp 2x 27	00 00 00 01	00–7F	CAf LFO2 RATE CONTROL [880]	-10.0– +10.0 [Hz]
63 pp 2x 28	00 00 00 01	00–7F	CAf LFO2 PITCH DEPTH [880]	0–600 [cent]
63 pp 2x 29	00 00 00 01	00–7F	CAf LFO2 TVF DEPTH [880]	0–2400 [cent]
63 pp 2x 2A	00 00 00 01	00–7F	CAf LFO2 TVA DEPTH [880]	0–100.0 [%]
63 pp 2x 30	00 00 00 01	28–58	PAf PITCH CONTROL [880]	-24– +24 [semitones]
63 pp 2x 31	00 00 00 01	00–7F	PAf TVF CUTOFF CONTROL [880]	-9600– +9600 [cent]
63 pp 2x 32	00 00 00 01	00–7F	PAf AMPLITUDE CONTROL [880]	-100.0– +100.0 [%]
63 pp 2x 33	00 00 00 01	00–7F	PAf LFO1 RATE CONTROL [880]	-10.0– +10.0 [Hz]
63 pp 2x 34	00 00 00 01	00–7F	PAf LFO1 PITCH DEPTH [880]	0–600 [cent]
63 pp 2x 35	00 00 00 01	00–7F	PAf LFO1 TVF DEPTH [880]	0–2400 [cent]
63 pp 2x 36	00 00 00 01	00–7F	PAf LFO1 TVA DEPTH [880]	0–100.0 [%]
63 pp 2x 37	00 00 00 01	00–7F	PAf LFO2 RATE CONTROL [880]	-10.0– +10.0 [Hz]
63 pp 2x 38	00 00 00 01	00–7F	PAf LFO2 PITCH DEPTH [880]	0–600 [cent]
63 pp 2x 39	00 00 00 01	00–7F	PAf LFO2 TVF DEPTH [880]	0–2400 [cent]
63 pp 2x 3A	00 00 00 01	00–7F	PAf LFO2 TVA DEPTH [880]	0–100.0 [%]

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Address (H)	Size (H)	Data (H)	Parameter	Description
63 pp 2x 40	00 00 00 01	28–58	CC1 PITCH CONTROL [880]	-24– +24 [semitones]
63 pp 2x 41	00 00 00 01	00–7F	CC1 TVF CUTOFF CONTROL [880]	-9600– +9600 [cent]
63 pp 2x 42	00 00 00 01	00–7F	CC1 AMPLITUDE CONTROL [880]	-100.0– +100.0 [%]
63 pp 2x 43	00 00 00 01	00–7F	CC1 LFO1 RATE CONTROL [880]	-10.0– +10.0 [Hz]
63 pp 2x 44	00 00 00 01	00–7F	CC1 LFO1 PITCH DEPTH [880]	0–600 [cent]
63 pp 2x 45	00 00 00 01	00–7F	CC1 LFO1 TVF DEPTH [880]	0–2400 [cent]
63 pp 2x 46	00 00 00 01	00–7F	CC1 LFO1 TVA DEPTH [880]	0–100.0 [%]
63 pp 2x 47	00 00 00 01	00–7F	CC1 LFO2 RATE CONTROL [880]	-10.0– +10.0 [Hz]
63 pp 2x 48	00 00 00 01	00–7F	CC1 LFO2 PITCH DEPTH [880]	0–600 [cent]
63 pp 2x 49	00 00 00 01	00–7F	CC1 LFO2 TVF DEPTH [880]	0–2400 [cent]
63 pp 2x 4A	00 00 00 01	00–7F	CC1 LFO2 TVA DEPTH [880]	0–100.0 [%]
63 pp 2x 50	00 00 00 01	28–58	CC2 PITCH CONTROL [880]	-24– +24 [semitones]
63 pp 2x 51	00 00 00 01	00–7F	CC2 TVF CUTOFF CONTROL [880]	-9600– +9600 [cent]
63 pp 2x 52	00 00 00 01	00–7F	CC2 AMPLITUDE CONTROL [880]	-100.0– +100.0 [%]
63 pp 2x 53	00 00 00 01	00–7F	CC2 LFO1 RATE CONTROL [880]	-10.0– +10.0 [Hz]
63 pp 2x 54	00 00 00 01	00–7F	CC2 LFO1 PITCH DEPTH [880]	0–600 [cent]
63 pp 2x 55	00 00 00 01	00–7F	CC2 LFO1 TVF DEPTH [880]	0–2400 [cent]
63 pp 2x 56	00 00 00 01	00–7F	CC2 LFO1 TVA DEPTH [880]	0–100.0 [%]
63 pp 2x 57	00 00 00 01	00–7F	CC2 LFO2 RATE CONTROL [880]	-10.0– +10.0 [Hz]
63 pp 2x 58	00 00 00 01	00–7F	CC2 LFO2 PITCH DEPTH [880]	0–600 [cent]
63 pp 2x 59	00 00 00 01	00–7F	CC2 LFO2 TVF DEPTH [880]	0–2400 [cent]
63 pp 2x 5A	00 00 00 01	00–7F	CC2 LFO2 TVA DEPTH [880]	0–100.0 [%]
63 pp 4x 00	00 00 00 01	00–03	TONE SET NUMBER [880]	TONE SET 0–3
63 pp 4x 01	00 00 00 01	01–03	TONE SET-0 NUMBER [880]	TONE SET 1–TONE SET 3
63 pp 4x 20	00 00 00 01	00–01	EQ ON/OFF [880]	OFF / ON
63 pp 4x 21	00 00 00 01	00–03	OUTPUT ASSIGN [880]	OUTPUT-1–OUTPUT-2R
63 pp 4x 22	00 00 00 01	00–01	PART M-FX ASSIGN [880]	BYPASS–M-FX

● User Rhythm Set [880]

The values of rhythm sound parameters can be modified as desired and stored as a Rhythm Set. A Rhythm Set that was stored in this way is referred to as a User Rhythm Set. Sixteen Rhythm Sets can be stored. A User Rhythm Set can be given an original name. These are stored in Rhythm Set numbers 65–80 of TONE SET 2/3.

d: Rhythm set number (0–FH : 1-16)
rr: Rhythm part note number (00–7F : 0–127)

Address (H)	Size (H)	Data (H)	Parameter	Description
70 0d 00 00	00 00 00 0C	20–7F	USER RHYTHM SET NAME [880]	32–127
				(ASCII 12 characters)
:				
70 0d 00 0B#				
70 0d 01 rr	00 00 00 01	00–7F	PLAY NOTE [880]	0–127
70 0d 02 rr	00 00 00 01	00–7F	LEVEL [880]	0–127
70 0d 03 rr	00 00 00 01	00–7F	ASSIGN GROUP [880	0–127
70 0d 04 rr	00 00 00 01	00–7F	PAN [880]	0–127
70 0d 05 rr	00 00 00 01	00–7F	REVERB SEND LEVEL [880]	0–127
70 0d 06 rr	00 00 00 01	00–7F	CHORUS SEND LEVEL [880]	0–127
70 0d 07 rr	00 00 00 01	00–01	RX NOTE OFF [880]	OFF / ON
70 0d 08 rr	00 00 00 01	00–01	RX NOTE ON [880]	OFF / ON
70 0d 09 rr	00 00 00 01	00–7F	DELAY SEND LEVEL [880]	0–127
70 0d 0A rr	00 00 00 01	01–03	SOURCE RHYTHM SET# (TONE SET) [880]	1–3
70 0d 0B rr	00 00 00 01	00–7F	(PG# : Program number) [880]	0–127
70 0d 0C rr	00 00 00 01	00–7F	SOURCE NOTE NUMBER [880]	0–127

Section 4. Bulk Dump

Bulk Dump allows you to transmit a large amount of data at once, and is convenient for storing settings for the entire unit on a computer or sequencer.

To make the SC-880 perform a Bulk Dump transmission, send it a "Bulk Dump Request" message. Bulk Dump Request uses the Data Request 1 (RQ1) format, but unlike when transmitting individual parameters, the "Size" specified by the request message refers not to size of the data but rather specifies the contents of the data. For the data contents corresponding to each Size, refer to "Parameter Dump."

When the SC-880 receives a Bulk Dump Request, it will transmit a Bulk Dump in the format given below.

The SC-880 is also able to transmit a list of its internal sounds. This function can be used to display a list of sounds on a computer.

Bulk Dump data consists of system exclusive messages, and contains a model ID that is specific to the instrument.

The SC-880 uses two models ID numbers: "MODEL ID = 42H" which is common to all GS instruments, and "MODEL ID = 45H" which is specific to the SC-880.

When "Bulk Mode" (p. 95) is set to "Original," bulk dump data will be transmitted with a model ID number of 42H for the portion which is common to GS instruments, and with a model ID number of 45H for the portion which has been extended on the SC-880. For normal use, you should set this parameter to "Original."

When "Bulk Mode" is set to "GS Compatible," bulk dump data will be transmitted with a model ID number of 42H for the portion which is common to GS instruments, and the portion which has been extended on the SC-880 will not be transmitted. Use the "GS Compatible" setting when you are creating song data intended for playback on a GS instrument, or song data for playback on the SC-88/SC-88Pro.

* For the portion which has been extended on the SC-880, data is received and transmitted as Individual Parameter data with MODEL ID=45H.

■ Parameter dump

○ Parameter dump request (receive only) [Pro]

This is a command that requests a set of parameter data, and uses "Data Request 1 (RQ1)" format. The Size specifies the requested data contents.

Address: 0C 00 00
Size:

00 00 00 : ALL	request a dump of all parameters
00 00 01 : ALL 1	use this when not using USER TONE BANK or USER RHYTHM SET
00 00 02 : ALL 2	use this when USER TONE BANK, USER RHYTHM SET and RHYTHM SETUP settings have not been modified
00 00 10 : 16-part GS 1	use this when using only 16 Parts
00 00 11 : 16-part GS 2	use this when using only 16 Parts, and RHYTHM SETUP settings have not been modified
00 01 00 : USER TONE BANK (ALL)	request a dump of all USER TONE BANK data
00 01 40 : USER TONE BANK #64	request a dump of USER TONE BANK #64 data (128 sounds)
00 01 41 : USER TONE BANK #65	request a dump of USER TONE BANK #65 data (128 sounds)
00 02 00 : USER RHYTHM SET (ALL)	request a dump of all USER RHYTHM SET #64 and #65 data
00 02 40 : USER RHYTHM SET #65	request a dump of USER RHYTHM SET #64 data
0 02 41 : USER RHYTHM SET #66	request a dump of USER RHYTHM SET #65 data
00 03 00 : USER M-FX	request a dump of USER M-FX data
00 04 00 : USER PATCH	request a dump of USER PATCH (Only for Part 1 and Part 2 of U-001 through U-016) data

Example) Dump request for all parameters: F0 41 DEV 42 11 0C 00 00 00 00 00 00 74 F7

Normally, using ALL (00 00 00) provides the greatest predictability, but the amount of data is very large, and transmission requires approximately 25 seconds. In order to reduce transmission time and data volume, we suggest that you request a dump only of the necessary data. Panel button operations allow you to transmit dumps of ALL, ALL 1, 16-part GS 1, 16-part GS 2, USER TONE BANK (ALL), USER RHYTHM SET (ALL), USER M-FX, USER PATCH.

○ Parameter dump [Pro]

When a Parameter Dump Request is received, or when panel operations initiate a dump transmission, the following data will be transmitted in "Data Set 1 (DT1)" format.

Address	Description	Number of packets	ALL	ALL1	ALL2	16-part GS1	16-part GS2	USER TONE BANK ALL	USER TONE BANK #64	USER TONE BANK #65	USER RHYTHM SET ALL	USER RHYTHM SET #65	USER RHYTHM SET #66	USER M-FX	USER PATCH
2A 00 00–2A 0F 7F	USER M-FX #1-64	16	○											○	
2B 00 00–2B 5F 7F	USER PATCH #1-16	96	○												○
08 00 00–08 00 7F	SETUP	1	○	○	○	○	○								
28 00 00–28 0A 7F	USER TONE BANK #64	11	○					○	○						
28 10 00–28 1A 7F	USER TONE BANK #65	11	○					○		○					
29 00 00–29 0B 0F	USER RHYTHM SET #65	12	○								○	○			
29 10 00–29 1B 0F	USER RHYTHM SET #66	12	○								○		○		
48 1D 10–48 26 0F	PERFORMANCE EXTENSION A	9	○	○	○	○	○								
48 00 00–48 1D 0F	SYSTEM/PERFORMANCE A	30	○	○	○	○	○								
49 00 00–49 1F 7F	RHYTHM SETUP A	32	○	○		○									
58 1D 10–58 26 0F	PERFORMANCE EXTENSION B	9	○	○	○										
58 00 00–58 1D 0F	SYSTEM/PERFORMANCE B	30	○	○	○										
59 00 00–59 1F 7F	RHYTHM SETUP B	32	○	○											

This table lists the data contents that will be transmitted when panel buttons are used to request a dump, or when a Parameter Dump Request is received at MIDI IN A. When a Parameter Dump Request is received at MIDI IN B, A and B will be reversed for PERFORMANCE EXTENSION, SYSTEM/PERFORMANCE and RHYTHM SETUP.

* When data dumped by the SC-880 is reloaded into the SC-880, be aware that the data may not be set correctly if the transmission order of the packets is changed, if the time interval between packets is changed, or if other messages are inserted between packets.

* The Parameter Dump data of the SC-880 includes data for GS format compatible devices, and this data is compatible in both directions. However, depending on the settings of parameters which are newly extended on the SC-880, the musical result may differ.

* If the SC-880 does not operate correctly with Bulk Dump data from another GS format compatible device, first initialize the SC-880 (page 104) before retransmitting the data.

* When another GS format compatible device receives Parameter Dump data that was transmitted by the SC-880, it may display a message such as "Address Error", but this is because the parameter addresses newly extended on the SC-880 were not recognized by the other device. Parameters which could be recognized by that device have been correctly set.

Appendices

■ Dumping a list of internal sounds
● Tone list dump

○ Tone list dump request (request only) [Pro]

This command requests a bulk dump of a list of the preset sounds (Tones) in internal memory, and uses "Data Request 1 (RQ1)" format. The Size specifies the contents of the requested data.

Address: 0C 00 01
Size: 00 00 00:   ALL
           00 00 01:   TONE SET 1
           00 00 02:   TONE SET 2
           00 00 03:   TONE SET 3
           00 mm bb   mm = TONE SET# 01–03
                        (01 = TONE SET 1, 02 = TONE SET 2, 03 = TONE SET 3)
                        bb = BANK# 00–7F

○ Tone list dump (transmit only) [Pro]

When Tone List Dump Request is received, the sound names of the specified tone set will be transmitted continuously in the format given below, where 16 bytes are used for each sound name. The Address of the transmitted data is 0C 00 01 for all packets. User bank sound names are not transmitted.

DUMP FORMAT:

0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
CC0	TONESET	PC	00	TONE NAME (ASCII 12 Characters)											

CC0:   Variation number
TONE SET: TONE SET number   01 = TONE SET 1, 02 = TONE SET 2, 03 = TONE SET 3
PC: Program number

● Rhythm set list dump

○ Rhythm set list dump request (receive only) [Pro]

This command requests a bulk dump transmission of a list of Preset Rhythm Sets in internal memory, and uses "Data Request 1 (RQ1)" format. The Size specifies the desired data contents.

Address: 0C 00 02
Size: 00 00 00:   ALL
           00 00 01:   TONE SET 1
           00 00 02:   TONE SET 2
           00 00 03:   TONE SET 3

○ Rhythm set list dump (transmit only) [Pro]

When a Rhythm Set List Dump Request is received, the Rhythm Set names of the specified TONE SET will be transmitted successively in the format given below, where 16 bytes are used for each sound. The Address of the transmitted data will be 0C 00 02 for each packet.

DUMP FORMAT:

0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
CC0	TONESET	PC	00	RHYTHM SET NAME (ASCII 12 Characters)											

TONE SET: TONE SET number   01 = TONE SET 1, 02 = TONE SET 2, 03 = TONE SET 3
PC: Program number

● Rhythm tone list dump

○ Rhythm tone list dump request (receive only) [Pro]

This command requests a bulk dump transmission of the Tone list of an internal Preset Rhythm Sets, and uses "Data Request 1 (RQ1)" format. The Size specifies the desired data contents.

Address: 0C 00 03
Size: 00 mm pp   mm = TONE SET# 01–03
                        (01 = TONE SET 1, 02 = TONE SET 2, 03 = TONE SET 3)
                        pp = Rhythm set# 00–7F (same as PC#)

○ Rhythm tone list dump (transmit only) [Pro]

When a Rhythm Tone List Dump Request is received, the Rhythm Tone names of the specified Rhythm Set will be transmitted in the following format where 16 bytes are used for each Rhythm Tone name. The address of the transmitted data will be 0C 00 03 for each packet.

DUMP FORMAT:

0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
CC0	TONESET	PC	KEY	RHYTHM TONE NAME (ASCII 12 Characters)											

TONE SET: TONE SET number   01 = TONE SET 1, 02 = TONE SET 2, 03 = TONE SET 3
PC: Program number
KEY: Note number

● Multi effects list dump

○ Multi effects list dump request (receive only) [Pro]

This command requests a bulk dump transmission of the Multi effects list of an internal memory, and uses "Data Request 1 (RQ1)" format. The Size specifies the desired data contents.

Address: 0C 00 04
Size: 00 00 00: ALL

○ Multi effects list dump (transmit only) [Pro]

When a Multi effects List Dump Request is received, the specified Multi effects names will be transmitted in the following format where 20 bytes are used for each Effect name. The address of the transmitted data will be 0C 00 04 for each packet.

DUMP FORMAT:

0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	10	11	12	13
MSB	LSB	00	00	MULTI-FX NAME (ASCII 16 Characters)															

MSB :   Category
LSB :   Type

● Preset patch list dump

○ Preset patch list dump request (receive only) [Pro]

This command requests a bulk dump transmission of the Preset patch list of an internal memory, and uses "Data Request 1 (RQ1)" format. The Size specifies the desired data contents.

Address: 0C 00 05
Size: 00 00 00 : ALL

○ Preset patch list dump (transmit only) [Pro]

When a Preset Patch List Dump Request is received, the specified Preset patch names will be transmitted in the following format where 20 bytes are used for each Patch name. The address of the transmitted data will be 0C 00 05 for each packet.

DUMP FORMAT:

0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	10	11	12	13
00	00	PC	00	PATCH NAME (ASCII 16 Characters)															

PC: Program number

Section 5. Supplementary material

● Decimal and Hexadecimal table

(An "H" is appended to the end of numbers in hexadecimal notation.)
In MIDI documentation, data values and addresses/sizes of exclusive messages etc. are expressed as hexadecimal values for each 7 bits.
The following table shows how these correspond to decimal numbers.

Dec.	Hex.	Dec.	Hex.	Dec.	Hex.	Dec.	Hex.
0	00H	32	20H	64	40H	96	60H
1	01H	33	21H	65	41H	97	61H
2	02H	34	22H	66	42H	98	62H
3	03H	35	23H	67	43H	99	63H
4	04H	36	24H	68	44H	100	64H
5	05H	37	25H	69	45H	101	65H
6	06H	38	26H	70	46H	102	66H
7	07H	39	27H	71	47H	103	67H
8	08H	40	28H	72	48H	104	68H
9	09H	41	29H	73	49H	105	69H
10	0AH	42	2AH	74	4AH	106	6AH
11	0BH	43	2BH	75	4BH	107	6BH
12	0CH	44	2CH	76	4CH	108	6CH
13	0DH	45	2DH	77	4DH	109	6DH
14	0EH	46	2EH	78	4EH	110	6EH
15	0FH	47	2FH	79	4FH	111	6FH
16	10H	48	30H	80	50H	112	70H
17	11H	49	31H	81	51H	113	71H
18	12H	50	32H	82	52H	114	72H
19	13H	51	33H	83	53H	115	73H
20	14H	52	34H	84	54H	116	74H
21	15H	53	35H	85	55H	117	75H
22	16H	54	36H	86	56H	118	76H
23	17H	55	37H	87	57H	119	77H
24	18H	56	38H	88	58H	120	78H
25	19H	57	39H	89	59H	121	79H
26	1AH	58	3AH	90	5AH	122	7AH
27	1BH	59	3BH	91	5BH	123	7BH
28	1CH	60	3CH	92	5CH	124	7CH
29	1DH	61	3DH	93	5DH	125	7DH
30	1EH	62	3EH	94	5EH	126	7EH
31	1FH	63	3FH	95	5FH	127	7FH

* Decimal values such as MIDI channel, bank number and program number are listed as one greater than the values given in the above table.
* A 7-bit byte can express data in the range of 128 steps. For data where greater precision is required, we must use two or more bytes. For example, two hexadecimal numbers aa bbH expressing two 7-bit bytes would indicate a value of aa x 128+bb.
* In the case of values which have a sign, 00H = -64, 40H = $$$+-0, and 7FH = +63, so that the decimal expression would be 64 less than the value given in the above chart. In the case of two types, 00 00H = -8192, 40 00H = $$$+-0, and 7F 7FH = +8191. For example if aa bbH were expressed as decimal, this would be aa bbH-40 00H = aa x 128+bb-64 x 128.
* Data marked "Use nibbled data" is expressed in hexadecimal in 4-bit units. A value expressed as a 2-byte nibble 0a 0bH has the value of a x 16+b.

<Example 1> What is the decimal expression of 5AH ?

From the preceding table, 5AH = 90

<Example 2> What is the decimal expression of the value 12 34H given as hexadecimal for each 7 bits?

From the preceding table, since 12H = 18 and 34H = 52
18 x 128+52 = 2356

<Example 3> What is the decimal expression of the nibbled value 0A 03 09 0D ?

From the preceding table, since 0AH = 10, 03H = 3, 09H = 9, 0DH = 13
((10 x 16+3) x 16+9) x 16+13 = 41885

<Example 4> What is the nibbled expression of the decimal value 1258?

16) 1258
16)   78 ... 10
16)   4 ... 14
        0 ... 4

Since from the preceding table, 0 = 00H, 4 = 04H, 14 = 0EH, 10 = 0AH, the answer is 00 04 0E 0AH.

● ASCII code table

On the SC-880, data such as patch names or performance names is handled as ASCII code, as follows.

Dec.	Hex.	Char.	Dec.	Hex.	Char.	Dec.	Hex.	Char.
32	20H	SP	64	40H	@	96	60H	`
33	21H	!	65	41H	A	97	61H	a
34	22H	"	66	42H	B	98	62H	b
35	23H	#	67	43H	C	99	63H	c
36	24H	$	68	44H	D	100	64H	d
37	25H	%	69	45H	E	101	65H	e
38	26H	&	70	46H	F	102	66H	f
39	27H	'	71	47H	G	103	67H	g
40	28H	(	72	48H	H	104	68H	h
41	29H	)	73	49H	I	105	69H	i
42	2AH	*	74	4AH	J	106	6AH	j
43	2BH	+	75	4BH	K	107	6BH	k
44	2CH	,	76	4CH	L	108	6CH	l
45	2DH	-	77	4DH	M	109	6DH	m
46	2EH	.	78	4EH	N	110	6EH	n
47	2FH	/	79	4FH	O	111	6FH	o
48	30H	0	80	50H	P	112	70H	p
49	31H	1	81	51H	Q	113	71H	q
50	32H	2	82	52H	R	114	72H	r
51	33H	3	83	53H	S	115	73H	s
52	34H	4	84	54H	T	116	74H	t
53	35H	5	85	55H	U	117	75H	u
54	36H	6	86	56H	V	118	76H	v
55	37H	7	87	57H	W	119	77H	w
56	38H	8	88	58H	X	120	78H	x
57	39H	9	89	59H	Y	121	79H	y
58	3AH	:	90	5AH	Z	122	7AH	z
59	3BH	;	91	5BH	[	123	7BH	{
60	3CH	<	92	5CH	\	124	7CH		
61	3DH	=	93	5DH	]	125	7DH	}
62	3EH	>	94	5EH	^	126	7EH	->
63	3FH	?	95	5FH	_	127	7FH	<-

* "SP" is space.

● Examples of actual MIDI messages

<Example 1> 92 3E 5F

9n is the Note-on status, and n is the MIDI channel number. Since 2H = 2, 3EH = 62, and 5FH = 95, this is a Note-on message with MIDI CH = 3, note number 62 (note name is D4), and velocity 95.

<Example 2> CE 49

CnH is the Program Change status, and n is the MIDI channel number. Since EH = 14 and 49H = 73, this is a Program Change message with MIDI CH = 15, program number 74 (Flute in GS).

<Example 3> EA 00 28

EnH is the Pitch Bend Change status, and n is the MIDI channel number. The 2nd byte (00H = 0) is the LSB and the 3rd byte (28H = 40) is the MSB, but Pitch Bend Value is a signed number in which 40 00H (= 64 x 12+80 = 8192) is 0, so this Pitch Bend Value is 28 00H-40 00H = 40 x 12+80-(64 x 12+80) = 5120-8192 = -3072

If the Pitch Bend Sensitivity is set to 2 semitones, -8192 (00 00H) will cause the pitch to change -200 cents, so in this case -200 x (-3072) (-8192) = -75 cents of Pitch Bend is being applied to MIDI channel 11.

<Example 4> B3 65 00 64 00 06 0C 26 00 65 7F 64 7F

BnH is the Control Change status, and n is the MIDI channel number. For Control Changes, the 2nd byte is the control number, and the 3rd byte is the value. In a case in which two or more messages consecutive messages have the same status, MIDI has a provision called "running status" which allows the status byte of the second and following messages to be omitted. Thus, the above messages have the following meaning.

B3	65 00	MIDI ch.4, upper byte of RPN parameter number	: 00H
(B3)	64 00	(MIDI ch.4) lower byte of RPN parameter number	: 00H
(B3)	06 0C	(MIDI ch.4) upper byte of parameter value	: 0CH
(B3)	26 00	(MIDI ch.4) lower byte of parameter value	: 00H
(B3)	65 7F	(MIDI ch.4) upper byte of RPN parameter number	: 7FH
(B3)	64 7F	(MIDI ch.4) lower byte of RPN parameter number	: 7FH

In other words, the above messages specify a value of 0C 00H for RPN parameter number 00 00H on MIDI channel 4, and then set the RPN parameter number to 7F 7FH.

RPN parameter number 00 00H is Pitch Bend Sensitivity, and the MSB of the value indicates semitone units, so a value of 0CH = 12 sets the maximum pitch bend range to 2 semitones (1 octave). (On GS sound sources the LSB of Pitch Bend Sensitivity is ignored, but the LSB should be transmitted anyway (with a value of 0) so that operation will be correct on any device.)

Once the parameter number has been specified for RPN or NRPN, all Data Entry messages transmitted on that same channel will be valid, so after the desired value has been transmitted, it is a good idea to set the parameter number to 7F 7FH to prevent accidents. This is the reason for the (B3) 64 7F (B3) 65 7F at the end.

It is not desirable for performance data (such as Standard MIDI File data) to contain many events with running status as given in <Example 4>. This is because if playback is halted during the song and then rewound or fast-forwarded, the sequencer may not be able to transmit the correct status, and the sound source will then misinterpret the data. Take care to give each event its own status.

It is also necessary that the RPN or NRPN parameter number setting and the value setting be done in the proper order. On some sequencers, events occurring in the same (or consecutive) clock may be transmitted in an order different than the order in which they were received. For this reason it is a good idea to slightly skew the time of each event (about 1 tick for TPQN = 96, and about 5 ticks for TPQN = 480).

* TPQN: Ticks Per Quarter Note

■ Example of an Exclusive message and calculating a Checksum

Roland Exclusive messages (RQ1, DT1) are transmitted with a checksum at the end (before F7) to make sure that the message was correctly received. The value of the checksum is determined by the address and data (or size) of the transmitted exclusive message.

● How to calculate the checksum
(hexadecimal numbers are indicated by 'H')

The checksum is a value derived by adding the address, size and checksum itself and inverting the lower 7 bits.
Here's an example of how the checksum is calculated. We will assume that in the exclusive message we are transmitting, the address is aa bb ccH and the data or size is dd ee ffH.

aa+bb+cc+dd+ee+ff = sum
sum / 128 = quotient ... remainder
128–remainder = checksum
(However, the checksum will be 0 if the remainder is 0.)

<Example 1> Setting REVERB MACRO (Performance Common A) to ROOM 3

According to the "Parameter Address Map," the REVERB MACRO Address is 40 01 30H, and ROOM 3 is a value of 02H. Thus,

F0	41	10	42	12	40 01 30	02	??	F7
(1)	(2)	(3)	(4)	(5)	address	data	checksum	(6)

(1) Exclusive Status,   (2) ID (Roland),   (3) Device ID (17),
(4) Model ID (GS),   (5) Command ID (DT1),   (6) End of Exclusive

Next we calculate the checksum.

40H+01H+30H+02H = 64+1+48+2 = 115 (sum)
115 (sum) / 128 = 0 (quotient) ... 115 (remainder)
checksum = 128 - 115 (remainder) = 13 = 0DH

This means that F0 41 10 42 12 40 01 30 02 0D F7 is the message we transmit.

<Example 2> Requesting transmission of the LEVEL for RHYTHM MODULE 1 NOTE NUMBER 75 (D#5; Claves)

NOTE NUMBER 75 (D#5) is 4BH in hexadecimal.
According to the "Parameter Address Map," LEVEL of NOTE NUMBER 75 (D#5; Claves) in RHYTHM MODULE 1 has an Address of 41 02 4BH and a Size of 00 00 01H. Thus,

F0	41	10	42	11	41 02 4B	00 00 01	??	F7
(1)	(2)	(3)	(4)	(5)	address	size	checksum	(6)

(1) Exclusive Status,   (2) ID (Roland),   (3) Device ID (17),
(4) Model ID (GS),   (5) Command ID(RQ1),   (6) End of Exclusive

Next we calculate the checksum.

41H+02H+4BH+00H+00H+01H = 65+2+75+0+0+1 = 143 (sum)
143 (sum) / 128 = 1 (quotient) ... 15 (remainder)
checksum = 128 - 15 (remainder) = 113 = 71H

This means that F0 41 10 42 11 41 02 4B 00 00 01 71 F7 is the message we transmit.

<Example 3> Obtaining the data for Part A06 of User Performance U-003 (RQ1)

According to the "Parameter Address Map," the start address for Part A03 of User Performance U-003 is 53 02 16 00 of Model ID = 45H, and the end address is 53 02 46 22. The size of the data will be the end address minus the start address, plus one.

```
    53 02 46 22H   <- End address
-)  53 02 16 00H   <- Start address
    00 00 30 22H
+)           1H    <- Add one
    00 00 30 23H   <- Data size
```

F0	41	10	45	11	53 02 16 00	00 00 30 23	??	F7
(1)	(2)	(3)	(4)	(5)	address	size	checksum	(6)

(1) Exclusive Status,   (2) ID (Roland),   (3) Device ID (17),
(4) Model ID (SC-880),   (5) Command ID(RQ1),   (6) End of Exclusive

Next we calculate the checksum.

53H+02H+16H+00H+00H+00H+30H+23H = 83+2+22+0+0+0+48+35 = 190 (sum)
190 (sum) / 128 = 1 (quotient) ... 62 (remainder)
checksum = 128 - 62 (remainder) = 66 = 42H

This means that F0 41 10 45 11 53 02 16 00 00 00 30 23 42 F7 is the message we transmit.

<Example 4> Obtaining the data for all user performances or user patches (RQ1)

According to the "Parameter Address Map," the start address for User Performance System U-001 is 50 00 00 7F of Model ID = 45H, and the end address of User Patch U-128 is 63 7F 4F 22.
The size of the data will be the end address minus the start address, plus one.

```
    63 7F 4F 22H   <- End address
-)  50 00 00 7FH   <- Start address
    13 7F 4E 23H   Note) The addresses and sizes are given in hexadecimal notation for each seven bits.
+)           1H    <- Add one
    13 7F 4E 24H   <- Data size
```

F0	41	10	45	11	50 00 00 7F	13 7F 4E 24	??	F7
(1)	(2)	(3)	(4)	(5)	address	size	checksum	(6)

(1) Exclusive Status,   (2) ID (Roland),   (3) Device ID (17),
(4) Model ID (SC-880),   (5) Command ID(RQ1),   (6) End of Exclusive

Next we calculate the checksum.

50H+00H+00H+7FH+13H+7FH+4EH+24H = 80+0+0+127+19+127+78+36 = 467 (sum)
467 (sum) / 128 = 3 (quotient) ... 83 (remainder)
checksum = 128 - 83 (remainder) = 45 = 2DH

This means that F0 41 10 45 11 50 00 00 7F 13 7F 4E 24 2D F7 is the message we transmit.

<Example 5> Obtaining the data for User Rhythm Set U-16 (RQ1)

According to the "Parameter Address Map," the start address for User Rhythm Set U-16 is
70 0F 00 00 of Model ID = 45H, and the end address is 70 0F 0C 7F.
The size of the data will be the end address minus the start address, plus one.

```
    70 0F 0C 7FH  <- End address
-)  70 0F 00 00H  <- Start address
    00 00 0C 7FH  Note) The addresses and sizes are given in hexadecimal notation for each seven bits.
+)           1H   <- Add one
    00 00 0D 00H  <- Data size
```

F0	41	10	45	11	70 0F 00 00	00 00 0D 00	??	F7
(1)	(2)	(3)	(4)	(5)	address	size	checksum	(6)

(1) Exclusive Status,	(2) ID (Roland),	(3) Device ID (17),
(4) Model ID (SC-880),	(5) Command ID(RQ1),	(6) End of Exclusive

Next we calculate the checksum.

70H+0FH+00H+00H+00H+00H+0DH+00H = 112+15+0+0+0+0+13+0 = 140 (sum)
140 (sum) / 128 = 1 (quotient) ... 12 (remainder)
checksum = 128 - 12 (remainder) = 116 = 74H

This means that F0 41 10 45 11 70 0F 00 00 00 00 0D 00 74 F7 is the message we transmit.

● About tuning

In MIDI, individual Parts are tuned by sending RPN #1 (Master Fine Tuning) to the appropriate MIDI channel.
In MIDI, an entire device is tuned by either sending RPN #1 to all MIDI channels being used, or by sending a System Exclusive MASTER TUNE (address 40 00 00H).
RPN #1 allows tuning to be specified in steps of approximately 0.012 cents (to be precise, 100/8192 cent), and System Exclusive MASTER TUNE allows tuning in steps of 0.1 cent. One cent is 1/100th of a semitone.
The values of RPN #1 (Master Fine Tuning) and System Exclusive MASTER TUNE are added together to determine the actual pitch sounded by each Part.

Frequently used tuning values are given in the following table for your reference. Values are in hexadecimal (decimal in parentheses).

Hz at A4	cent	RPN #1	Sys.Ex. 40 00 00
445.0	+19.56	4C 43 (+1603)	00 04 0C 04 (+196)
444.0	+15.67	4A 03 (+1283)	00 04 09 0D (+157)
443.0	+11.76	47 44 (+ 964)	00 04 07 06 (+118)
442.0	+ 7.85	45 03 (+ 643)	00 04 04 0F (+ 79)
441.0	+ 3.93	42 42 (+ 322)	00 04 02 07 (+ 39)
440.0	0	40 00 (0)	00 04 00 00 (0)
439.0	- 3.94	3D 3D (- 323)	00 03 0D 09 (- 39)
438.0	- 7.89	3A 7A (- 646)	00 03 0B 01 (- 79)

<Example> Set the tuning of MIDI channel 3 to A4 = 442.0 Hz

Send RPN#1 to MIDI channel 3. From the above table, the value is 45 03H.

B2	65 00	MIDI ch.3, upper byte of RPN parameter number:	00H
(B2)	64 01	(MIDI ch.3) lower byte of RPN parameter number:	01H
(B2)	06 45	(MIDI ch.3) upper byte of parameter value:	45H
(B2)	26 03	(MIDI ch.3) lower byte of parameter value:	03H
(B2)	65 7F	(MIDI ch.3) upper byte of RPN parameter number:	7FH
(B2)	64 7F	(MIDI ch.3) lower byte of RPN parameter number:	7FH

● The Scale Tune Feature (address: 40 1x 40)

The scale Tune feature allows you to finely adjust the individual pitch of the notes from C through B. Though the settings are made while working with one octave, the fine adjustments will affect all octaves. By making the appropriate Scale Tune settings, you can obtain a complete variety of tuning methods other than equal temperament. As examples, three possible types of scale setting are explained below.

○ Equal Temperament

This method of tuning divides the octave into 12 equal parts. It is currently the most widely used form of tuning,
especially in occidental music. On the SC-880, the default settings for the Scale Tune feature produce equal temperament.

○ Just Temperament (Keytone C)

The three main chords resound much more beautifully than with equal temperament, but this benefit can only be obtained in one key. If transposed, the chords tend to become ambiguous. The example given involves settings for a key in which C is the keynote.

○ Arabian Scale

By altering the setting for Scale Tune, you can obtain a variety of other tunings suited for ethnic music. For example, the settings introduced below will set the unit to use the Arabian Scale.

Example Settings

Note name	Equal Temperament	Just Temperament (Keytone C)	Arabian Scale
C	0	0	-6
C#	0	-8	+45
D	0	+4	-2
D#	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
A#	0	+14	-10
B	0	-12	-49

The values in the table are given in cents. Refer to the explanation of Scale Tuning on page 189 to convert these values to hexadecimal, and transmit them as exclusive data.
For example, to set the tune (C-B) of the Part1 Arabian Scale, send the data as follows:
F0 41 10 42 12 40 11 40 3A 6D 3E 34 0D 38 6B 3C 6F 40 36 0F 76 F7

MIDI Implementation Chart

64 VOICE SYNTHESIZER MODULE   Date : Jan. 1, 1998

Model SC-880   **MIDI Implementation Chart**   Version : 1.00

Function...		Transmitted	Recognized		Remarks
Basic Default		X	1–16		
Channel Changed		X	1–16		Memorized
	Default	X	MODE 3		
Mode	Messages	X	MODE 3,4(M=1)		*2
	Altered	*************			
Note		X	0-127		
Number : True Voice		*************	0-127		
Velocity	Note ON	X	O		
	Note OFF	X	X		
After	Key's	X	O	*1	
Touch	Ch's	X	O	*1	
Pitch Bend		X	O	*1	
	0,32	X	O	*1	Bank select
	1	X	O	*1	Modulation
	5	X	O	*1	Portamento time
	6,38	X	O	*1	Data entry
	7	X	O	*1	Volume
	10	X	O	*1	Panpot
	11	X	O	*1	Expression
Control	64	X	O	*1	Hold1
Change	65	X	O	*1	Portamento
	66	X	O	*1	Sostenuto
	67	X	O	*1	Soft
	84	X	O	*1	Portamento control
	91	X	O	*1	Effect 1(Reverb Send Level)
	93	X	O	*1	Effect 3(Chorus Send Level)
	94	X	O	*1	Effect 4(Delay Send Level)
	98,99	X	X	*1	NRPN LSB,MSB
	100,101	X	O	*1	RPN LSB,MSB
Program : True #		X	O		
Change		*************	0-127	*1	Program Number:1-128
System Exclucive		O	O		
System	: Song Pos	X	X		
Common	: Song Sel	X	X		
	: Tune	X	X		
System	: Clock	X	X		
Real Time	: Commands	X	X		
	: All Sound Off	X	O	(120 , 126, 127)	
Aux	: Reset All Controllers	X	O		
Message	: Local ON/OFF	X	X		
	: All Notes OFF	X	O	(123 -127)	
	: Active Sensing	O	O		
	: System Reset	X	X		
Notes		* 1 O X is selectable.			
		* 2 Recognize as M = 1 even if M≠1			

Mode 1 : OMNI ON, POLY   Mode 2 : OMNI ON, MONO   O : Yes
Mode 3 : OMNI OFF, POLY   Mode 4 : OMNI OFF, MONO   X : No

Specifications

Model: 64 Voice Synthesizer Module SC-880
(Conforms to General MIDI System and GS Format)

● **Number of parts**
32

● **Maximum Polyphony**
64 voices

● **Internal Memory**

Tones	Preset:	1117
	User:	256
Rhythm Set	Preset:	42
	User:	16
Patches	Preset:	128
	User:	128
Performances	Preset:	8
	User:	8
Multi-effects	Preset:	64
	User:	64

● **Effects**
Reverb (8 types)
Chorus (8 types)
Delay (10 types)
2 band equalizer
Multi-effects (64 types)

● **Display**
136 x 32 Dots Graphic LCD (Backlit)

● **Connectors**
MIDI connector (IN-A, IN-B, OUT/THRU)
Audio input jack x2 (L,R)
Input volume knob
Audio output jack x4 (OUTPUT-1L, 1R, 2L, 2R)
Headphones jack
Computer terminal
Computer switch
AC inlet

● **Power Supply**
AC117V, AC230V, AC240V
(Built-in Trans)

● **Power Consumption**
15W (AC117V / AC230V/240V)

● **Dimensions**
482 (W) x 358 (D) x 45 (H) mm
19 (W) x 14-1/8 (D) x 1-13/16 (H) inches
(EIA-1U rack mount type)

● **Weight**
4.0 kg
8 lbs 14 oz

● **Accessories**
Quick Start
Owner's Manual
AC Cord
MIDI Cable

● **Option**
Computer cable
RSC-15AT (for PC)
RSC-15APL (for Apple Macintosh series)

* *In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.*

Appendices

Computer Cable Wiring Diagrams

For Apple Macintosh (Sold separately: RSC-15APL)

mini DIN, 8-pin, male

mini DIN, 8-pin, male

mini DIN, 8-pin, male		mini DIN, 8-pin, male
HSKo 1		1 HSKo
HSKi 2		2 HSKi
TXD- 3		3 TXD-
GND 4		4 GND
RXD- 5		5 RXD-
TXD+ 6		6 TXD+
GPi 7		7 GPi
RXD+ 8		8 RXD+
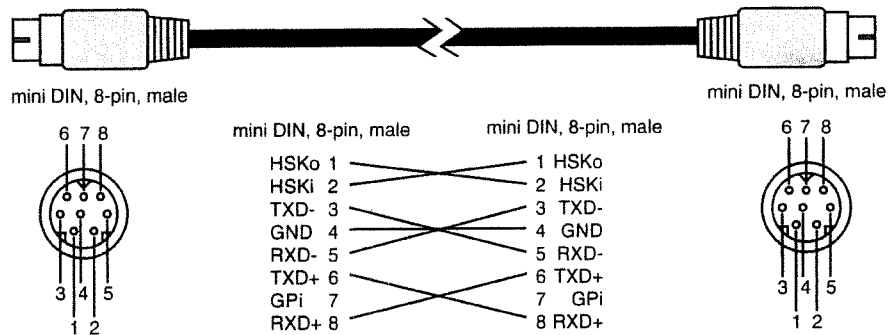
For PC (9-pin) (Sold separately: RSC-15AT)

mini DIN, 8-pin, male

mini DIN, 8-pin, male	D-sub, 9-pin, female
HSKo 1	7 RTS
HSKi 2	8 CTS
TXD- 3	3 TXD
GND 4	5 GND
RXD- 5	2 RXD

D-sub, 9-pin, female

For PC (25-pin)

mini DIN, 8-pin, male

mini DIN, 8-pin, male	D-sub, 25-pin, female
HSKo 1	4 RTS
HSKi 2	5 CTS
TXD- 3	2 TXD
GND 4	7 GND
RXD- 5	3 RXD

D-sub, 25-pin, female

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MEMO

MEMO

Information

When you need repair service, call your nearest Roland Service Center or authorized Roland distributor in your country as shown below.

ARGENTINA
Instrumentos Musicales S.A.
Florida 638
(1005) Buenos Aires
ARGENTINA
TEL: (01) 394 4029

BRAZIL
Roland Brasil Ltda.
R. Coronel Octaviano da Silveira
203 05522-010
Sao Paulo BRAZIL
TEL: (011) 843 9377

CANADA
**Roland Canada Music Ltd.
(Head Office)**
5480 Parkwood Way Richmond
B. C., V6V 2M4 CANADA
TEL: (0604) 270 6626

**Roland Canada Music Ltd.
(Toronto Office)**
Unit 2, 109 Woodbine Downs
Blvd, Etobicoke, ON
M9W 6Y1 CANADA
TEL: (0416) 213 9707

MEXICO
Casa Veerkamp, s.a. de c.v.
Av. Toluca No. 323 Col. Olivar de
los Padres 01780 Mexico D.F.
MEXICO
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Centro Parque de Cristal, Nivel
C2 Local 20 Caracas
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Munbai 400011, INDIA
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Kompleks Perkantoran
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Jl. Gajah Mada No.3—5,
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**Cosmos Corporation
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825 Amman 11118 JORDAN
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Chahine Building, Achrafieh
Beirut, LEBANON
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Al Fanny Trading Office
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Oststrasse 96, 22844 Norderstedt,
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54 St. 106 82 Athens, GREECE
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