GS-10

GUITAR EFFECTS SYSTEM with USB AUDIO INTERFACE

Owner's Manual

Thank you, and congratulations on your choice of the BOSS GS-10 Guitar Effects System with USB Audio Interface.

Before using this unit, carefully read the sections entitled:

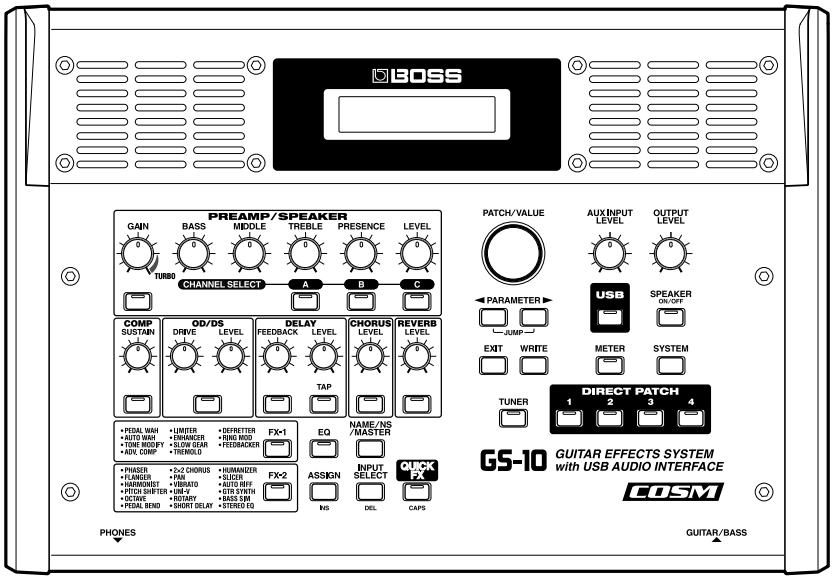
- **USING THE UNIT SAFELY (page 2–3)**
- **IMPORTANT NOTES (page 4–5)**

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, Owner's manual should be read in its entirety. The manual should be saved and kept on hand as a convenient reference.

■ Printing Conventions in This Manual

- Text or numerals enclosed in square brackets [ ] indicate buttons.
  [WRITE] WRITE button
  [USB] USB button
- Reference such as (p. **) indicate pages in this manual to which you can refer.



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 modify in any way) the unit or its AC adaptor.

- Do not attempt to repair the unit, or replace parts within it (except when this manual provides specific instructions directing you to do so). Refer all servicing to your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" sheet.

- Never use or store the unit in places that are:
  - Subject to temperature extremes (e.g., direct sunlight in an enclosed vehicle, near a heating duct, on top of heat-generating equipment); or are
  - Damp (e.g., baths, washrooms, on wet floors); or are
  - Humid; or are
  - Exposed to rain; or are
  - Dusty; or are
  - Subject to high levels of vibration.

- Make sure you always have the unit placed so it is level and sure to remain stable. Never place it on stands that could wobble, or on inclined surfaces.

- Be sure to use only the AC adaptor supplied with the unit. Also, make sure the line voltage at the installation matches the input voltage specified on the AC adaptor's body. Other AC adaptors may use a different polarity, or be designed for a different voltage, so their use could result in damage, malfunction, or electric shock.

⚠WARNING

- Do not excessively twist or bend the power cord, nor place heavy objects on it. Doing so can damage the cord, producing severed elements and short circuits. Damaged cords are fire and shock hazards!

- This unit, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level, or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should immediately stop using the unit, and consult an audiologist.

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

- Immediately turn the power off, remove the AC adaptor from the outlet, and request servicing by your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" sheet when:
  - The AC adaptor, the power-supply cord, or the plug has been damaged; or
  - If smoke or unusual odor occurs
  - Objects have fallen into, or liquid has been spilled onto the unit; or
  - The unit has been exposed to rain (or otherwise has become wet); or
  - The unit does not appear to operate normally or exhibits a marked change in performance.

⚠ WARNING

- In households with small children, an adult should provide supervision until the child is capable of following all the rules essential for the safe operation of the unit.

- Protect the unit from strong impact.
(Do not drop it!)

- Do not force the unit's power-supply cord to share an outlet with an unreasonable number of other devices. Be especially careful when using extension cords—the total power used by all devices you have connected to the extension cord's outlet must never exceed the power rating (watts/amperes) for the extension cord. Excessive loads can cause the insulation on the cord to heat up and eventually melt through.

- Before using the unit in a foreign country, consult with your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" sheet.

- DO NOT play a CD-ROM disc on a conventional audio CD player. The resulting sound may be of a level that could cause permanent hearing loss. Damage to speakers or other system components may result.

⚠ CAUTION

- The unit and the AC adaptor should be located so their location or position does not interfere with their proper ventilation.

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

- At regular intervals, you should unplug the AC adaptor and clean it by using a dry cloth to wipe all dust and other accumulations away from its prongs. Also, disconnect the power plug from the power outlet whenever the unit is to remain unused for an extended period of time. Any accumulation of dust between the power plug and the power outlet can result in poor insulation and lead to fire.

- 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 AC adaptor or its plugs with wet hands when plugging into, or unplugging from, an outlet or this unit.

- Before moving the unit, disconnect the AC adaptor and all cords coming from external devices.

- Before cleaning the unit, turn off the power and unplug the AC adaptor from the outlet.

- Whenever you suspect the possibility of lightning in your area, disconnect the AC adaptor from the outlet.

IMPORTANT NOTES

In addition to the items listed under "USING THE UNIT SAFELY" on page 2–3, please read and observe the following:

Power Supply

- Do not use this unit on the same power circuit with any device that will generate line noise (such as an electric motor or variable lighting system).
- The AC adaptor will begin to generate heat after long hours of consecutive use. This is normal, and is not a cause for concern.
- 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.
- Noise may be produced if wireless communications devices, such as cell phones, are operated in the vicinity of this unit. Such noise could occur when receiving or initiating a call, or while conversing. Should you experience such problems, you should relocate such wireless devices so they are at a greater distance from this unit, or switch them off.
- Do not expose the unit to direct sunlight, place it near devices that radiate heat, leave it inside an enclosed vehicle, or otherwise subject it to temperature extremes. Excessive heat can deform or discolor the unit.
- When moved from one location to another where the temperature and/or humidity is very different, water droplets (condensation) may form inside the unit. Damage or malfunction may result if you attempt to use the unit in this condition. Therefore, before using the unit, you must allow it to stand for several hours, until the condensation has completely evaporated.

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), computer, 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" sheet.

  "Battery Low !! Please Change"

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), or computer.
- Unfortunately, it may be impossible to restore the contents of data that was stored in another MIDI device (e.g., a sequencer), or computer 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.
- To avoid disturbing your neighbors, try to keep the unit's volume at reasonable levels. You may prefer to use headphones, so you do not need to be concerned about those around you (especially when it is late at night).

- When you need to transport the unit, package it in the box (including padding) that it came in, if possible. Otherwise, you will need to use equivalent packaging materials.
- Use only the specified expression pedal (EV-5; sold separately). By connecting any other expression pedals, you risk causing malfunction and/or damage to the unit.
- Use a cable from Roland to make the connection. If using some other make of connection cable, please note the following precautions.
  - Some connection cables contain resistors. Do not use cables that incorporate resistors for connecting to this unit. The use of such cables can cause the sound level to be extremely low, or impossible to hear. For information on cable specifications, contact the manufacturer of the cable.

Handling CD-ROMs

- Unauthorized duplication, reproduction, hiring, and lending prohibited.
- Before you open the included CD-ROM, you must read the "license agreement." Opening the CD-ROM will be taken to mean your acceptance of the license agreement.
- Avoid touching or scratching the shiny underside (encoded surface) of the disc. Damaged or dirty CD-ROM discs may not be read properly. Keep your discs clean using a commercially available CD cleaner.
- In the interest of product improvement, the specifications and/or contents of this package are subject to change without prior notice.
- DO NOT play a CD-ROM disc on a conventional audio CD player. The resulting sound may be of a level that could cause permanent hearing loss. Damage to speakers or other system components may result.

Copyright

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

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Main Features

True "Tabletop Guitar Effects System"

This is an all-new guitar effects system, which gives you not only the kind of professional-quality effects available only from BOSS, but features a USB interface and built-in monitor speakers as well.

Internal Effects Derived from the GT-6/GT-6B, Made More Powerful

All components of the GT-6 and GT-6B COSM amps and effects, famous for their sonic quality and ease of use, have been thoroughly improved in this system. With its new amp types and effects, the GS-10 takes you to a new dimension in sound creation.

The Functions You Want for Digital Recording

The GS-10 not only gives you the recording capabilities you would expect with its DIGITAL OUT (coaxial) connector, it also allows you to record simply and easily via USB. What's more, you can also record the direct sound while listening to the performance as it sounds with the effects added, and add effects to sounds that have already been recorded.

Accepts Multiple Inputs

You can use the GS-10 not just with your guitar, but as an audio interface for input of sounds from bass guitars, mics, and external stereo equipment. The GS-10 also includes amp types and effects for basses, giving you total song-creation capabilities all in one single device.

Stereo Monitor Speakers Built-In

The GS-10 comes with its own monitor speakers, so you can enjoy creating and performing music all with one unit.

GS-10 Editor and GS-10 Librarian Included

In addition to intuitive knob controls, the GS-10 also includes the "Editor" software for use in creating sounds and "Librarian" software for managing the tones you have created. These softwares let you perform the procedures for creating sounds and changing effect connection sequences easily from your computer screen.

WDM/ASIO-Compatible USB Driver

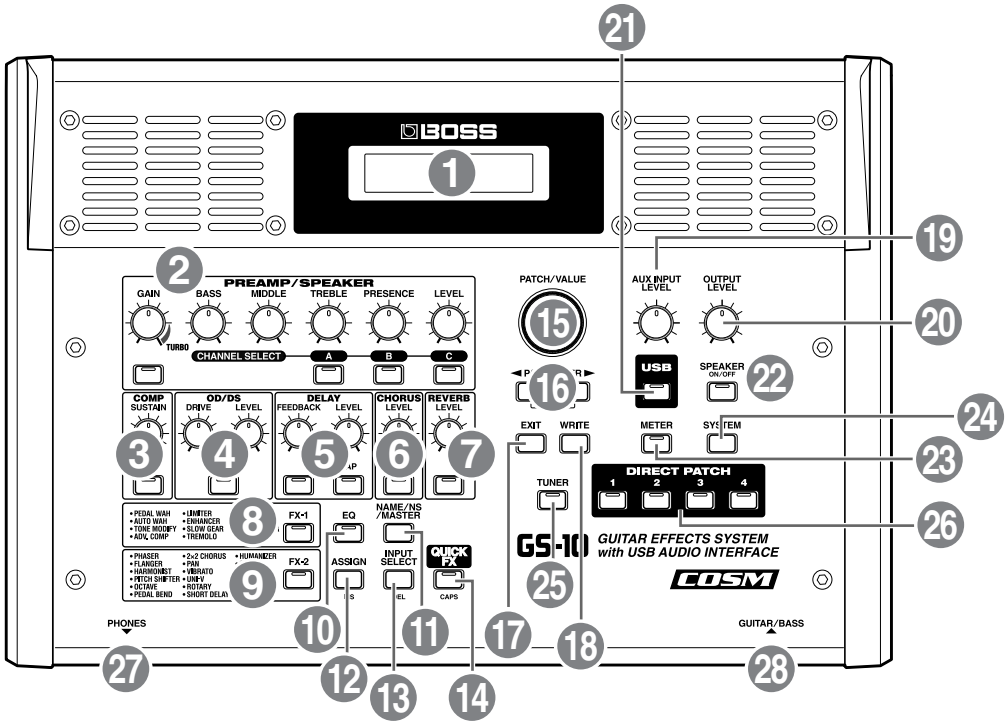
The GS-10 comes with a GS-10-exclusive driver for stable, high-quality recording and playback. Now enjoy high-quality audio recordings with 24-bit and ASIO applications.

COSM (Composite Object Sound Modeling)

Composite Object Sound Modeling (COSM) is Roland's innovative and powerful sound modeling technology. COSM analyzes the many factors that make up the original sound, such as the electrical and physical characteristics of the original, and then produces a digital model that can reproduce the same sound.

Panel Descriptions

Front Panel



1. Display

A variety of information about the GS-10 appears here. Normally, patch names are displayed.

2. PREAMP/SPEAKER (p. 21, p. 28) (Preamp/Speaker Simulator)

GAIN Knob

Adjusts the degree of preamp distortion.

BASS Knob

Adjusts the sound quality of the preamp's low-frequency range.

MIDDLE Knob

Adjusts the sound quality of the preamp's midrange.

TREBLE Knob

Adjusts the sound quality of the preamp's high-frequency range.

PRESENCE Knob

Adjusts the sound quality in the preamp's ultra-high-frequency range.

LEVEL Knob

Adjusts the preamp volume level.

PREAMP/SPEAKER On/Off Button

Press to change the settings.

CHANNEL SELECT Button

Switches the preamp channel.

3. COMP (Compressor) (p. 21, p. 31)

SUSTAIN Knob

Adjusts the compressor's sustain effect (an effect that keeps the sound playing).

COMP On/Off Button

Press to change the settings.

4. OD/DS (p. 21, p. 32) (Overdrive/Distortion)

DRIVE Knob

Adjusts the degree of overdrive or distortion.

LEVEL Knob

Adjusts the overdrive/distortion volume level.

OD/DS On/Off Button

Press to change the settings.

5. DELAY (p. 21, p. 33)

FEEDBACK Knob

Adjusts the number of times the delay is repeated.

LEVEL Knob

Adjusts the volume level of the delay sound.

DELAY On/Off Button

Press to change the settings.

TAP Button
Use this when setting the delay time with the tap input. (p. 33)

6. CHORUS (p. 21, p. 34)

LEVEL Knob
Adjusts the volume level of the chorus sound.

CHORUS On/Off Button
Press to change the settings.

7. REVERB (p. 21, p. 34)

LEVEL Knob
Adjusts the volume level of the reverb sound.

REVERB On/Off Button
Press to change the settings.

8. FX-1 (p. 36)

FX-1 On/Off Button
Press to change the settings.

9. FX-2 (p. 41)

FX-2 On/Off Button
Press to change the settings.

10. EQ (Equalizer) (p. 35)

EQ On/Off Button
Press when changing the settings.

11. NAME/NS/MASTER Button (p. 24, p. 53)
Use for naming patches (NAME), setting the noise suppressor (NS), and making the master settings (MASTER).

12. ASSIGN Button (p. 60)
Use this to make settings for the expression pedal and control pedal.

13. INPUT SELECT Button
Selects the input signal to which the effect is applied.

14. QUICK FX Button (p. 22)
Using the Quick Settings lets you complete the settings procedure quickly and easily.

15. PATCH/VALUE Dial
Use this when switching patches and changing the values of settings.

16. PARAMETER Buttons
Press to select parameters.

* *To jump to the main parameters, hold down one of these buttons while you press the other. With items for which there aren't that many parameters, the GS-10 jumps to the last (or initial) parameter.*

17. EXIT Button
Use this to undo operations.

18. WRITE Button
Press to store settings.

19. AUX INPUT LEVEL Knob
Adjusts the volume of the input from the AUX INPUT jack.

* *Setting the input level too high may result in oscillation.*

20. OUTPUT LEVEL Knob
Adjusts the GS-10's output level and the unit's speaker volume.

21. USB Button (p. 78)
Used when making USB-related settings.
The indicator lights when the GS-10 is connected to your computer.

22. SPEAKER ON/OFF Button (p. 15)
Switches the GS-10's speakers on and off.

23. METER Button (p. 67)
Press to use the meter function.

24. SYSTEM Button
Use for making settings for the GS-10's overall operating environment.

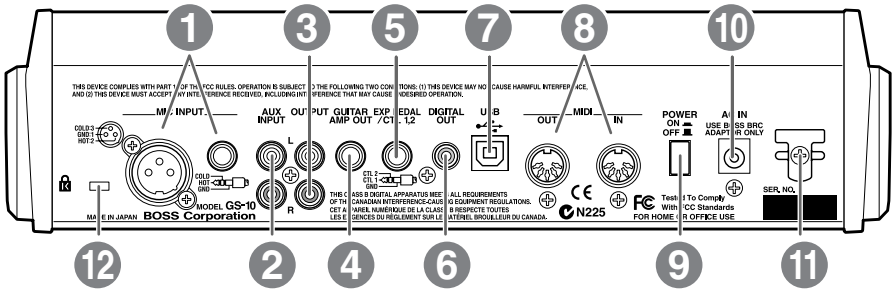
25. TUNER Button (p. 64)
Press to use the tuner function.

26. DIRECT PATCH Button (p. 18)
Allows you to directly call up your favorite patches registered in the GS-10.

27. PHONES Jack
Connect the stereo headphones here.

28. GUITAR/BASS Jack
The guitar or bass is connected here.

Rear Panel



1. MIC INPUT Jack/Connector

Input jack/connector for use with mics. Both standard TRS type and XLR type are provided.

* *Use only one of these jacks at a time.*

* *Not compatible with phantom power.*

2. AUX INPUT Jacks L/R

Used for connecting a CD player or similar audio device, rhythm machine, sound module, or similar devices.

3. OUTPUT Jacks L/R

Used for connecting to an audio set, recorder, mixer, or similar equipment.

4. GUITAR AMP OUT Jack

Connect your guitar amp here.

5. EXP PEDAL/CTL 1,2 (Expression Pedal/Control Pedal 1,2) Jack

Connect an optional expression pedal (such as the EV-5) or foot switch (such as the FS-5U) here.

6. DIGITAL OUT Connector

Outputs digital audio signals.

7. USB Connector

Use a USB cable to connect this connector to your computer to exchange data between the GS-10 and the computer.

8. MIDI IN/OUT Connector

Connect an external MIDI device to these connectors to transmit and receive MIDI messages

9. POWER switch

Turns the power on and off.

10. AC Adaptor Jack

Connect the included AC adaptor (BRC series) here.

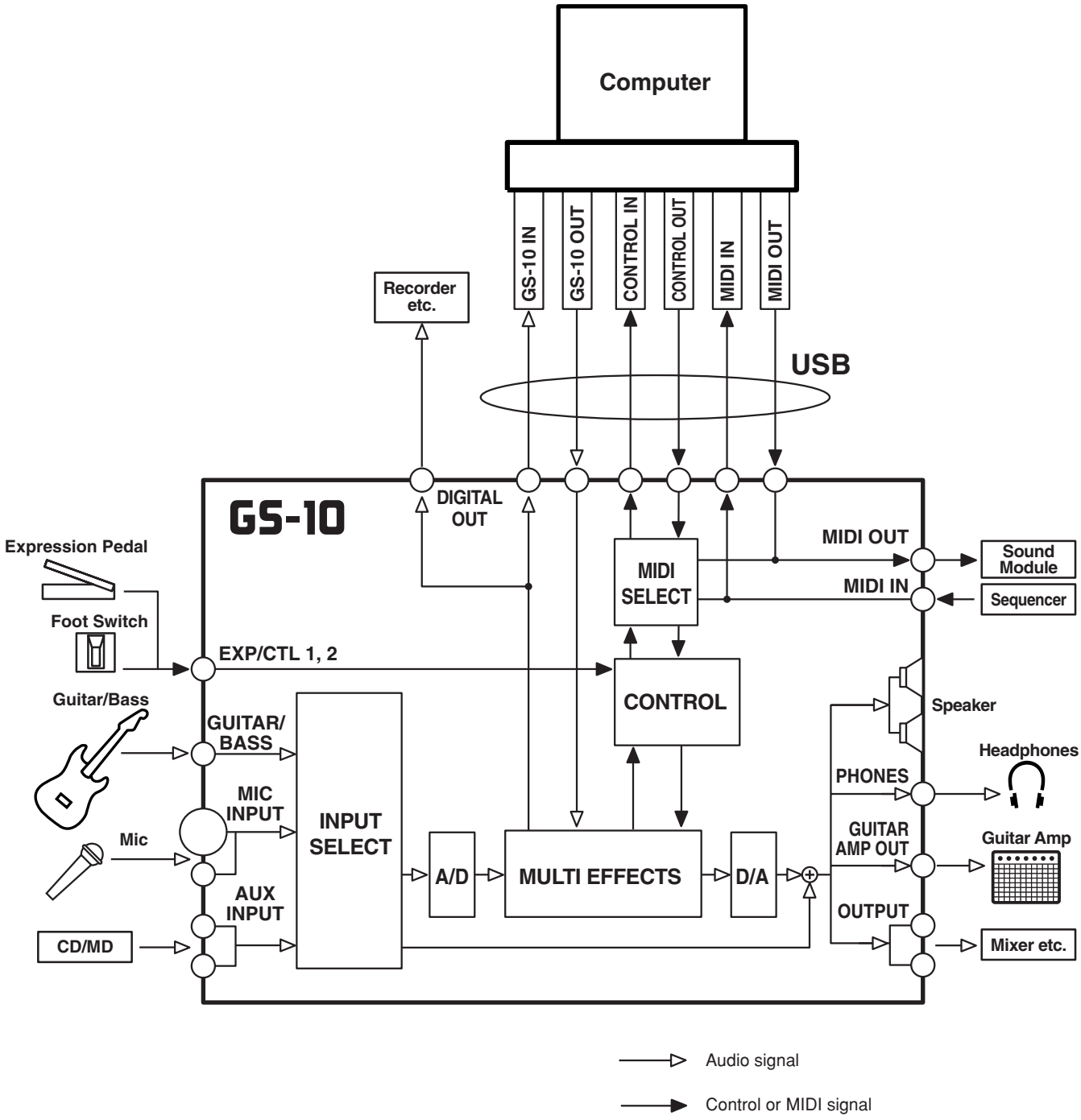
11. Cord Hook

Hook the AC adaptor cord here to prevent the adaptor plug from being disconnected.

12. Security Slot ( )

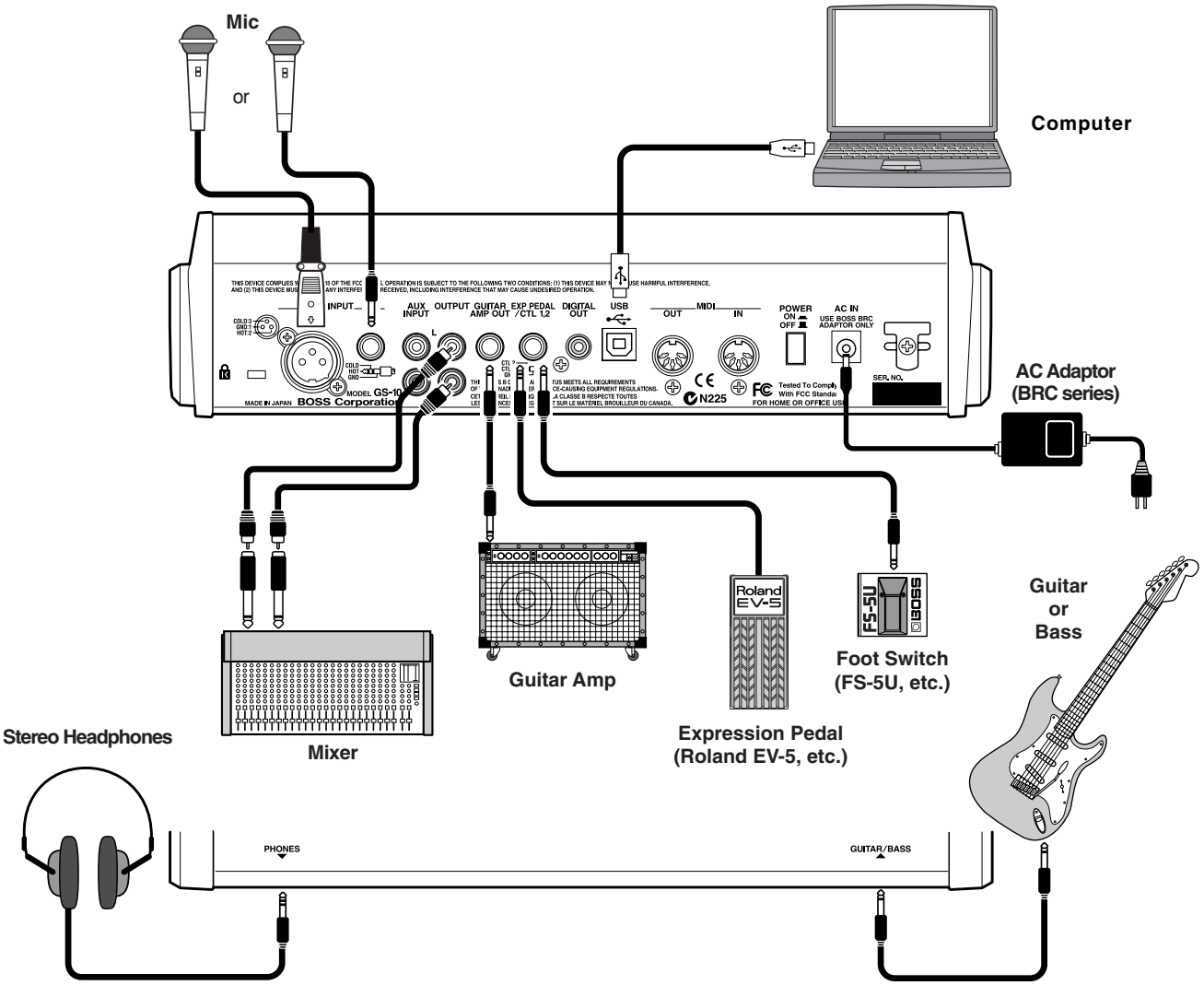
http://www.kensington.com/

Signal Flow



Chapter 1 Playing Sounds

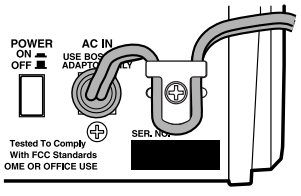
Making the Connections



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

* *Turn up guitar amp and audio amp volume levels and the GS-10's OUTPUT LEVEL only after turning on the power to all connected devices.*

- To prevent the inadvertent disruption of power to your unit (should the plug be pulled out accidentally), and to avoid applying undue stress to the AC adaptor jack, anchor the power cord using the cord hook, as shown in the illustration.

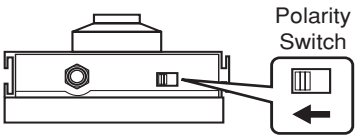


- This instrument is equipped with balanced (XLR/TRS) type MIC INPUT jacks. Wiring diagrams for these jacks are shown below. Make connections after first checking the wiring diagrams of other mic you intend to connect.

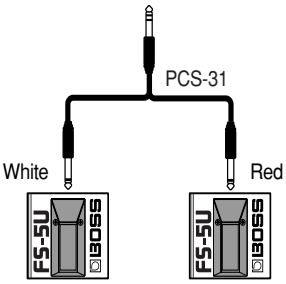
* *Not compatible with phantom power.*

- Howling could be produced depending on the location of mics relative to speakers. This can be remedied by:
  1. Changing the orientation of the mic(s).
  2. Relocating mic(s) at a greater distance from speakers.
  3. Lowering volume levels.

- When using the unit with an expression pedal connected to the EXP PEDAL/CTL 1,2 jack, set Minimum Volume to the "MIN" position.
- Use only the specified expression pedal (Roland EV-5; optional). By connecting any other expression pedals, you risk causing malfunction and/or damage to the unit.
- When using the unit with a foot switch (FS-5U; optional) connected to the EXP PEDAL/CTL 1,2 jack, set the polarity switch as shown below.



* *You can use the special (optional Roland) PCS-31 connector cord to connect two foot switches.*



When using the unit with a foot switch (the optional FS-5U) connected to the EXP PEDAL/CTL 1,2 jack, make the settings given on p. 59.

Turning On the Power

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

1. **Before turning on the power, confirm the following.**
   - Are all external devices properly connected?
   - Is the volume on the GS-10, your amp, and all other connected devices turned down to the minimum level?
2. **Switch ON the POWER switch on the GS-10's rear panel.**
   A few seconds later, the unit enters the ordinary performance mode. The screen that appears at this point is called the "**Play screen**."

* *Upon power-up, the patch most recently selected when the power was last turned off is selected.*

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

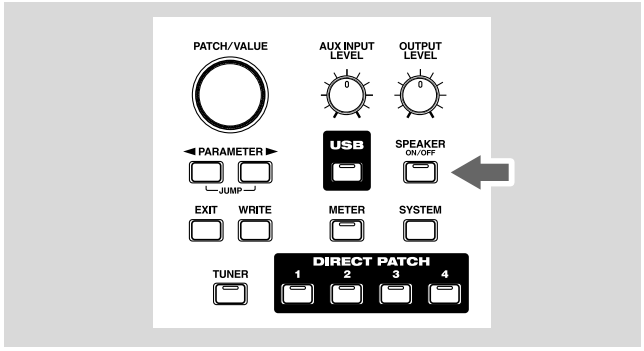
3. **Next, turn on the power to guitar amp and audio devices.**

Turning Off the Power

1. **Before turning off the power, confirm the following.**
   - Is the volume on the GS-10, your amp, and all other connected devices turned down to the minimum level?
2. **Turn off the power to guitar amp and audio devices.**
3. **Turn the GS-10's power off.**

Using the GS-10's Speakers

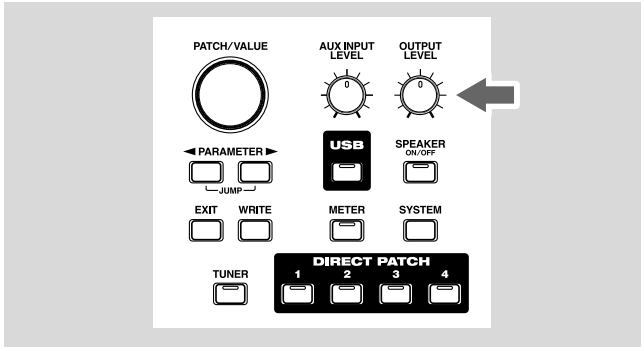
Press [SPEAKER ON/OFF], causing the indicator to light.



* *When not using the GS-10's speakers, press [SPEAKER ON/OFF], so the indicator is off.*

Adjusting the Output Level

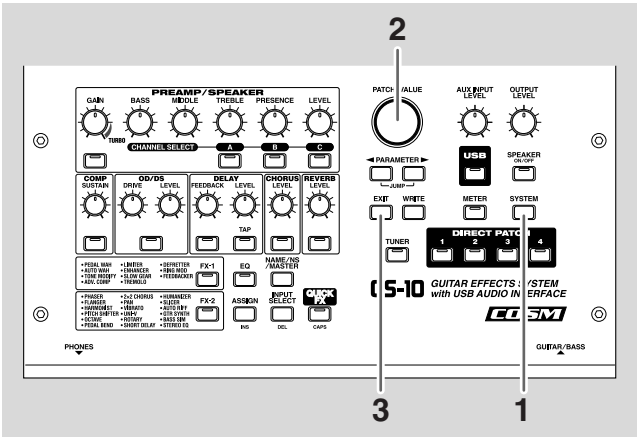
Adjust the GS-10's output level and speaker volume with the OUTPUT LEVEL knob.



Setting Output Device (Amps) (OUTPUT SELECT)

Select the type of output device connected to the OUTPUT jack or GUITAR AMP OUT jack.

To derive the maximum performance from the GS-10, be sure to make the correct setting for OUTPUT SELECT, the one that's most suitable for your setup.



1. Press [SYSTEM], causing the indicator to light.

The Output Select settings screen appears.

2. Turn the PATCH/VALUE dial to select the type of device connected to the OUTPUT jack or GUITAR AMP OUT jack.

Line/Phones

Set this when connecting the OUTPUT jack to an audio set or when connecting a recorder for recording.

Use this setting also when using the GS-10's speakers or headphones.

Combo AMP

Use this setting when connecting to the guitar input of a combo amp (where the amp and speaker or speakers are combined in a single unit).

Stack AMP

Use this setting when connecting to the guitar input of a stack-type guitar amp (where the amp and speaker or speakers are separated).

Combo Return

Use this setting when connecting to RETURN with a combo amp.

Stack Return

Use this setting when connecting to RETURN of a stack amp or rack mounted power amp.

3. Press [EXIT] to return to the Play screen.

* *Set OUTPUT SELECT as shown below, when the PREAMP/SPEAKER type (p. 29) is set to CONCERT 810, SESSION, BASS 360, T.E., B-MAN, FLIP TOP, Bass Clean, Bass Crunch, Bass HiGain, or Mic Preamp.*

When connecting to an audio amp or similar equipment:
Line/Phones

When connecting to a guitar amp:
Combo Amp or Combo Return

When connecting to a bass amp:
Stack Amp or Stack Return

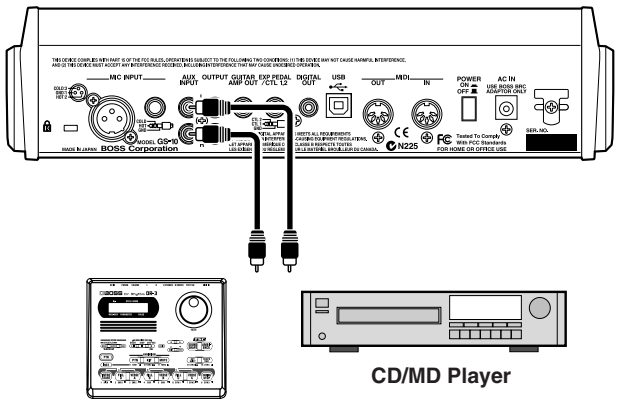
Guitar Tuning

You can use the GS-10's built-in "tuner function" to tune your guitar.

For instructions on using this function, refer to "Tuning the Guitar" (p. 64).

Connecting Audio Devices to the AUX INPUT Jack

When using a CD or MD player, rhythm machine, or similar device for practice, connect these device to the AUX INPUT jack on the rear panel.

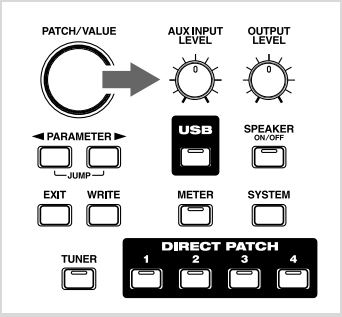


Rhythm Machine

CD/MD Player

Use the AUX INPUT knob on the front panel to adjust the input volume level for AUX INPUT.

* *Setting the input level too high may result in oscillation.*



The input sounds from the AUX INPUT jack are mixed with the guitar sounds within the GS-10, making this a convenient feature when using the GS-10's speakers or headphones.

* *The mixed sound is not output from DIGITAL OUT.*

AUX INPUT

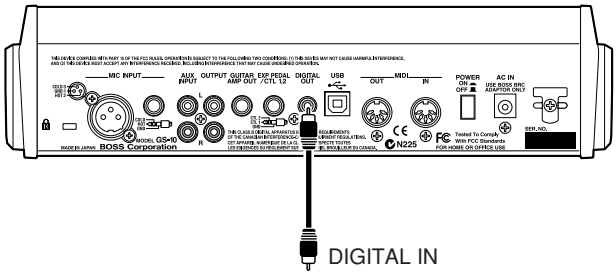
You can set INPUT SELECT and use USB to record the input sounds from the AUX INPUT jack to your computer, and record to a recorder using DIGITAL OUT.

You can also add effects to the sounds input from the AUX INPUT jack.

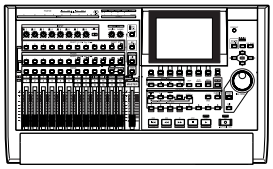
For instructions on setting INPUT SELECT, refer to "Selecting the Input (INPUT SELECT)" (p. 19).

Using the Digital Output

Digital signals are output from the DIGITAL OUT connector on the rear panel. You can connect this directly to the digital in connector of a digital recorder or other device and record with no degradation in sound quality.



DIGITAL IN

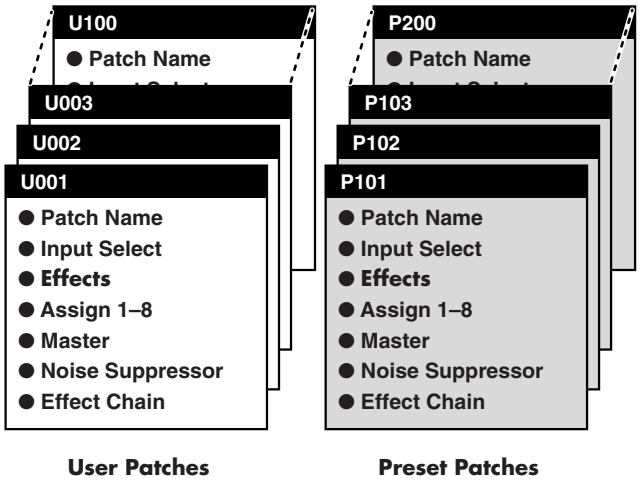


Digital Recorder

Chapter 2 Creating Your Own Favorite Tones (Patches)

What is a Patch?

The GS-10 can store 200 combinations (or "sets") of effects and parameter settings. Each of these sets is called a "patch." Patches include both User patches and Preset patches.



User Patches (U001–U100)

Newly created effects settings are saved in the User patches.

* *A "U" appears in the display when a User patch is being used.*

Preset Patches (P101–P200)

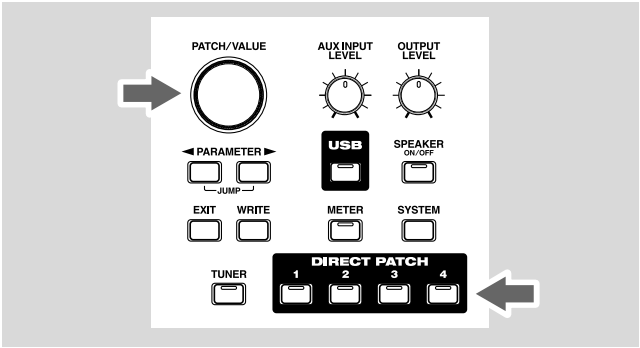
The Preset patches contain effect settings that really help bring out the special characteristics of the GS-10.

Although you cannot overwrite the Preset patches with your own settings, you can change (edit) a Preset patch's settings, then save the result as a User patch. (p. 25)

* *A "p" appears in the display when a Preset patch is being used.*

How to Select Patches (Patch Change)

When the Play screen is showing in the display, you can switch patches using the PATCH/VALUE dial or DIRECT PATCH [1]–[4] (p. 27).

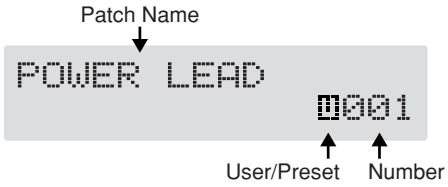


* *If you want to set a limit to the number of patches that can be selected with the PATCH/VALUE dial, change the system function settings (p. 65).*

* *Settings currently being edited are cleared when you switch patches. If you want to save the setting changes you've made, use the Write procedure (p. 25).*

About the Display Indication

The following information appears in the Play screen.



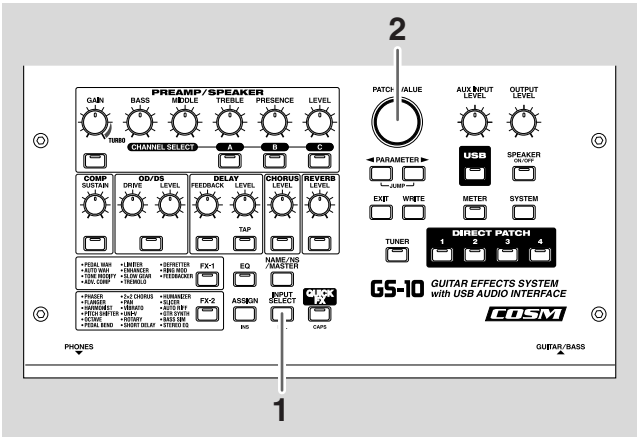
If the Patch Does Not Switch

On the GS-10, you cannot switch patches in any screen other than the Play screen. Press [EXIT] to return to the Play screen (p. 15).

Selecting the Input (INPUT SELECT)

This selects the input signal to which the effects are added. This is also used for setting the type of device connected to the input connector.

To derive the maximum performance from the GS-10, be sure to make the correct setting for INPUT SELECT, the one that's most suitable for your setup.
You may not be able to achieve the expected effect if this is not set correctly.



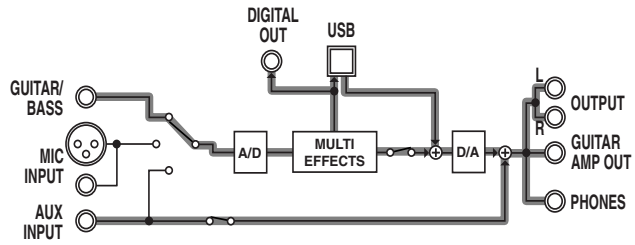
1. Press [INPUT SELECT].

The Input Select settings screen appears.

2. Turn the PATCH/VALUE dial to change the settings.

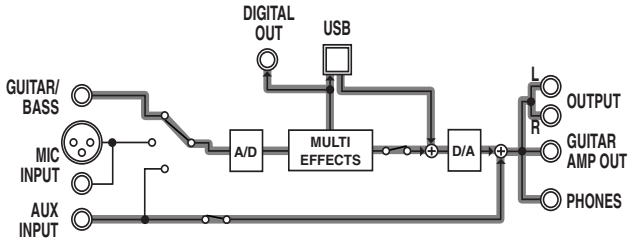
Guitar:

You can add effects to the signals input from the GUITAR/BASS INPUT connector (when a guitar is connected). Signals from MIC INPUT are disregarded, and the signals input to the GS-10 from the USB or AUX INPUT connectors are mixed with the effect output.



Bass:

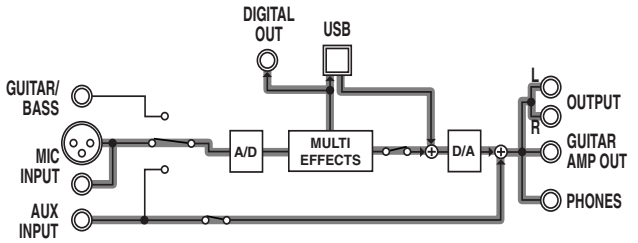
You can add effects to the signals input from the GUITAR/BASS jack (when a bass is connected). Signals from MIC INPUT are disregarded, and the signals input to the GS-10 from the USB or AUX INPUT connectors are mixed with the effect output.



* *Depending on the type of bass guitar you are using, you may not be able to achieve the intended effect if the input level to the GS-10 is excessively high.*
In such cases, lower the volume or tone of your bass guitar.

Microphone:

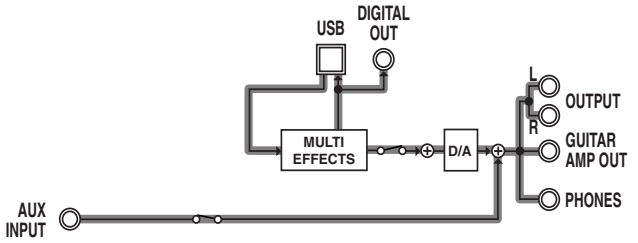
You can add effects to the signals input from the MIC INPUT connector. Signals from GUITAR/BASS jack are disregarded, and the signals input to the GS-10 from the USB or AUX INPUT connectors are mixed with the effect output.



* *After setting INPUT SELECT to Microphone, you can press PARAMETER [►] to set the mic gain (p. 20).*

USB (Gtr/Mic):

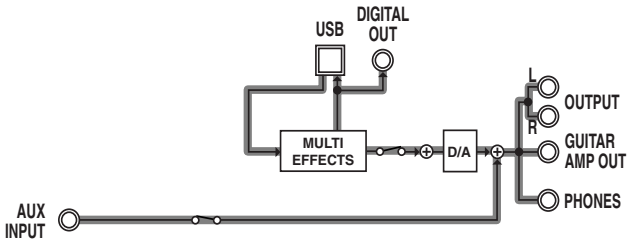
You can add effects to the signals input from the USB connector (for sounds in the guitar and vocal registers). Signals from GUITAR/BASS and MIC INPUT are disregarded, and the signals input to the GS-10 from the AUX INPUT connector are mixed with the effect output.



* *After setting INPUT SELECT to USB (Gtr/Mic), you can press PARAMETER [►] to set the USB input level (p. 78).*

USB (Bass):

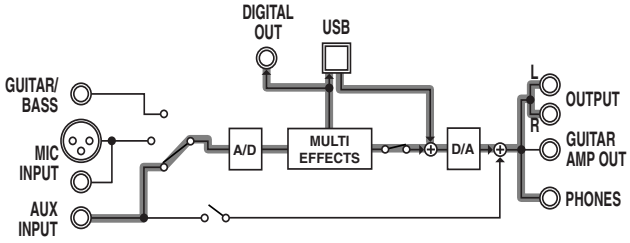
You can add effects to the signals input from the USB connector (for sounds in the bass and similar registers). Signals from GUITAR/BASS INPUT and MIC INPUT are disregarded, and the signals input to the GS-10 from the AUX INPUT connector are mixed with the effect output.



* *After setting INPUT SELECT to USB (Bass), you can press PARAMETER [►] to set the USB input level (p. 78).*

AUX:

This setting is used when selecting the input signal from the AUX INPUT connector. Signals input from the GUITAR/BASS INPUT and MIC INPUT are disregarded, and the signals input to the GS-10 via USB are mixed with the effect output.



Setting the Mic Input Level (MIC GAIN)

This sets the mic input level when INPUT SELECT is set to Microphone.

* *The mic gain setting is a global setting used by all patches.*

1. Press PARAMETER [►].

The MIC GAIN settings screen appears in the display.

2. Adjust the gain by turning the PATCH/VALUE dial while picking up sounds with the mic.

Adjust the level so that the level meter does not fluctuate beyond the maximum allowable level.

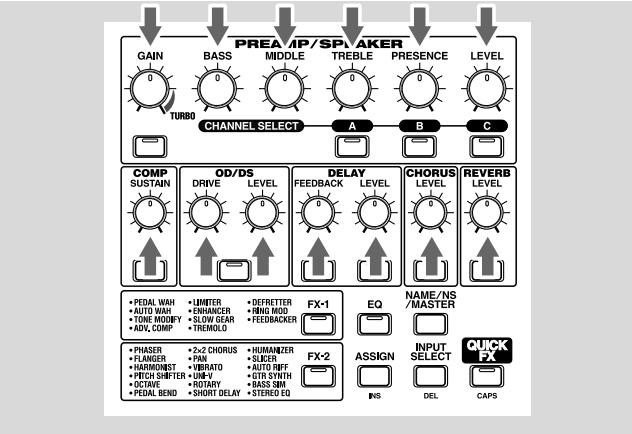
* *Set the volume for the sound being miked (acoustic guitar, vocals, etc.) to the level to be used in performance.*

* *Setting the mic gain too high may result in oscillation.*

3. Press [EXIT] to return to the Play screen.

Adjusting the Tones with the Knobs

The GS-10 panel features 13 knobs for adjusting effect tones. You can use these knobs to make slight adjustments to tones in the selected patch quickly and easily.



PREAMP GAIN:

Adjusts the degree of preamp distortion. The distortion gets stronger as the knob is turned to the right.

PREAMP BASS:

Adjusts the sound quality of the preamp's low-frequency range. The low frequencies are boosted as the knob is turned to the right.

PREAMP MIDDLE:

Adjusts the sound quality of the preamp's midrange. The midrange frequencies are boosted as the knob is turned to the right.

PREAMP TREBLE:

Adjusts the sound quality of the preamp's high-frequency range. The high frequencies are boosted as the knob is turned to the right.

PREAMP PRESENCE:

Adjusts the sound quality in the preamp's ultra-high-frequency range. The ultra-high frequencies are boosted as the knob is turned to the right.

PREAMP LEVEL:

Adjusts the preamp volume level. The volume increases as the knob is turned to the right.

COMP (Compressor) SUSTAIN:

Adjusts the compressor's sustain effect (an effect that keeps the sound playing). The effect is strengthened as the knob is turned to the right.

OD/DS (Overdrive/Distortion) DRIVE

Adjusts the degree of overdrive or distortion. The distortion appears stronger as the knob is turned to the right.

OD/DS (Overdrive/Distortion) LEVEL:

Adjusts the overdrive/distortion volume level. The volume increases as the knob is turned to the right.

DELAY FEEDBACK:

Adjusts the number of times the delay is repeated. The number of repeats increases as the knob is turned to the right.

DELAY LEVEL:

Adjusts the volume level of the delay sound. The delay sound increases as the knob is turned to the right.

CHORUS LEVEL:

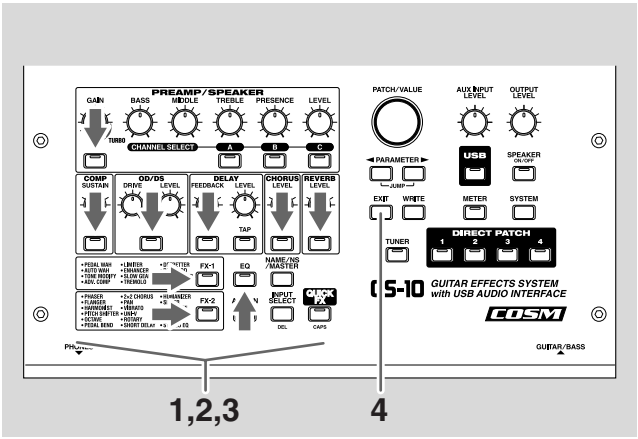
Adjusts the volume level of the chorus sound. The chorus sound increases as the knob is turned to the right.

REVERB LEVEL:

Adjusts the volume level of the reverb sound. The reverb sound increases as the knob is turned to the right.

Turning the Effect On and Off

The GS-10's internal effects are switched on and off with button controls. The indicator for an effect's ON/OFF button lights up when the effect is enabled.



1. **Press the ON/OFF button for the effect you want to be able to switch on and off.**

   The settings for the selected effect appear in the display.

* *With FX-1 and FX-2, the settings for the currently selected effect are shown.*

2. **Press the ON/OFF button again to switch the effect on or off.**

* *The effect name flashes in the display when that effect is disabled.*

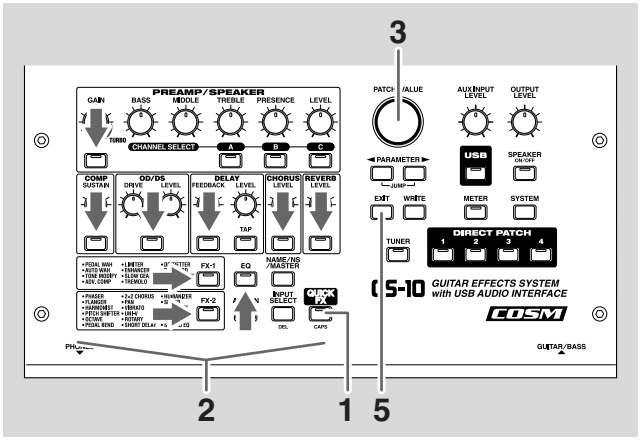
3. **To select another effect to be switched on and off, repeat Steps 1 and 2.**

4. **Press [EXIT] to return to the Play screen.**

* *If you want to save a tone with the settings you've made, use the Write procedure (p. 25) to save the tone to a User patch.*

Setting the Effects Simply (QUICK FX)

Each effect includes prepared sample settings called "Quick Settings." You can easily create new effect sounds just by selecting and combining these Quick Settings.



1. **Press [QUICK FX].**

   The effects selection screen appears in the display.

* *Performing Step 1 while editing an effect takes you to the status following Step 2.*

2. **Press the ON/OFF button for the effect you want to select for Quick Settings.**

   The name of the effect being set with Quick Settings appears in the upper row of the display, and the "Quick Settings Name" currently selected for that effect appears in the lower row of the display.

* *The following appears in the display immediately after patches are changed or when the settings in Quick settings are changed by editing the parameters.*

* *The upper row of the display flashes when the selected effect is switched off. Even when using the Quick Settings, you can switch effects on and off with the effect ON/OFF buttons.*

3. Rotate the VALUE dial to select the Quick Setting you want.

The tone switches to that of the selected sample settings.

* *You can select "—: User Setting" to return the settings to their condition prior to selecting the Quick Settings.*

4. To select Quick Settings for another effect, repeat Steps 2 and 3.

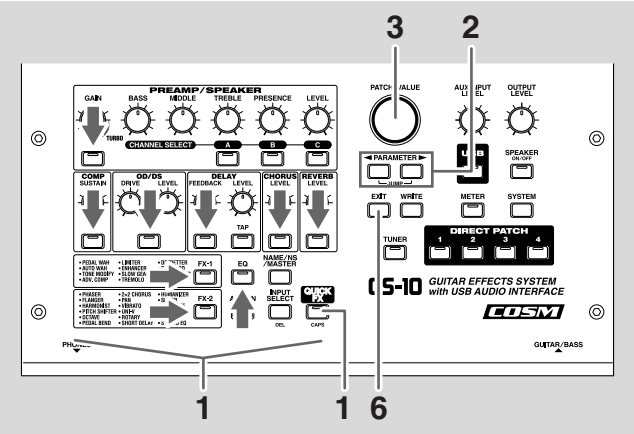
* *Even after performing this procedure, the settings selected in Step 3 are maintained as is and carried over to the Quick Settings for the next effect.*

5. Press [EXIT] to return to the Play screen.

* *If you want to save a tone with the settings you've made, use the Write procedure (p. 25) to save the tone to a User patch.*

Making More Precise Effect Settings

Each effect comprises several different kinds of parameters. You can more precisely create the sounds you want by editing each of these parameters individually.



1. Press the on/off button for the effect with the settings you want to change.

The parameters for the selected effect appear in the display.

2. Press PARAMETER [◄] [►] to select the parameter whose settings are to be changed.

When more than one parameter is shown in the display, press PARAMETER [◄] [►] to move the cursor to the parameter to be set.

MEMO

You can jump to the core parameters by pressing PARAMETER [◄] (or [►]) while holding down PARAMETER [►] (or [◄]). With items for which there aren't that many parameters, the GS-10 jumps to the last (or first) parameter.

3. Rotate the VALUE dial to change the value of a setting.

4. Repeat Steps 2 and 3 for any other parameter settings you want to change.

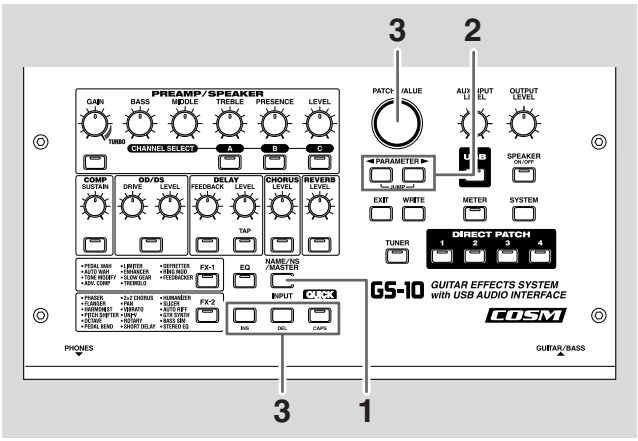
5. If you further want to change parameter settings in any other effects, repeat Steps 1 through 4.

6. Press [EXIT] to return to the Play screen.

* *If you want to save a tone with the settings you've made, use the Write procedure (p. 25) to save the tone to a User patch.*

Naming Patches

Each patch can be given a name (Patch Name) consisting of up to sixteen characters. You'll probably want to take advantage of this feature by assigning names that suggest the sound you'll obtain, or the song in which it'll be used.



1. **Press [NAME/NS/MASTER] so that the Name edit screen appears in the display.**

* *With each press of [NAME/NS/MASTER], you move to the next item that can be set, in this order:*
Name → Noise Suppressor → Master → Foot Volume → Effect Chain.

2. **Press PARAMETER [◄] [►] to move the cursor to the text area you want to edit.**

3. **Rotate the PATCH/VALUE dial to change the characters.**

* *You can use the following functions when changing text characters.*

CAPS: Switches the character at the cursor position between upper and lower case.

INS: Inserts a blank space at the cursor position.

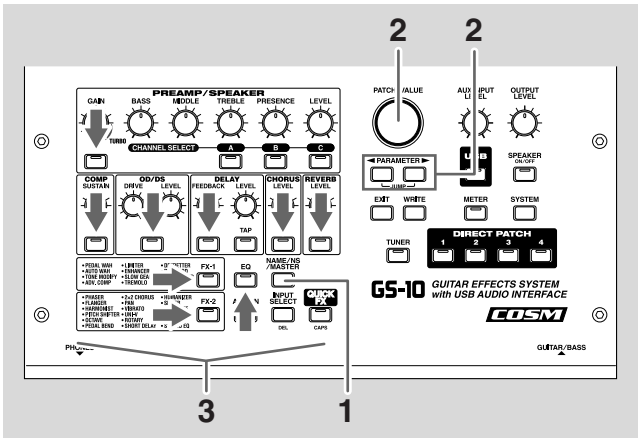
DEL: Deletes the character at the cursor position and shifts the characters following it to the left.

4. **If you want to edit names further, repeat Steps 2 and 3.**

5. **If you want to save the sequence you've set up, use the Write procedure (p. 25) to save it to a User patch.**
Press [EXIT] to return to the Play screen.

Changing the Connection Order of Effects (Effect Chain)

Here's how you can change the order in which the effects are connected.



1. **Press [NAME/NS/MASTER] until "Effect Chain" appears in the display.**

* *With each press of [NAME/NS/MASTER], you move to the next item that can be set, in this order:*
Name → Noise Suppressor → Master → Foot Volume → Effect Chain.

* *Effects are shown in lowercase letters when turned off.*

2. **Use the PATCH/VALUE dial or PARAMETER [◄] [►] to move the cursor to the point where you want to have an effect inserted.**

3. **Press the On/Off button for the effect you want to insert.**
The selected effect is inserted at the cursor position.

* *Use [ASSIGN] to assign Foot Volume.*

4. **If you want to change the sequence further, repeat Steps 2 and 3.**

5. **If you want to save the sequence you've set up, use the Write procedure (p. 25) to save it to a User patch.**
Press [EXIT] to return to the Play screen.

MEMO

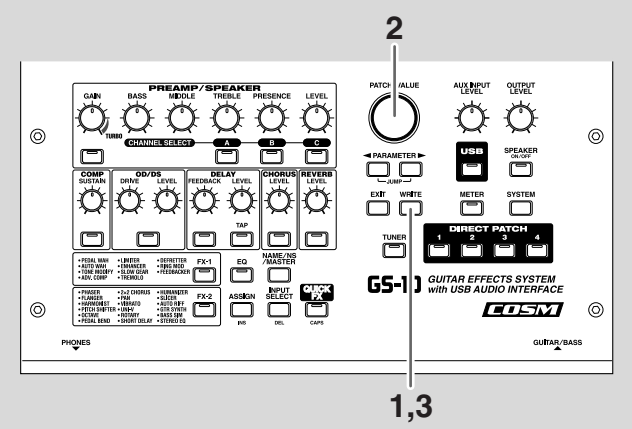
Effects can be switched on and off even while making the settings for the connection order (excluding FV, NS, and USB).
With effects appearing to the left and right of the cursor, the ON/OFF button corresponding to the effect can be pressed to turn them on/off.

Chapter 3 Saving the Tones You Have Created

Storing Patches (PATCH WRITE)

When you want to keep a tone created with the Quick Settings or a tone with altered parameter values, use the "Write procedure" to save it to a User patch.

* *If the power is turned off, or if the tone is switched (Patch Change; p. 18) before you've carried out the Write procedure, the newly created tone will be discarded.*



1. Press [WRITE].

The screen for specifying the save-destination User patch appears in the display.

Save-destination patch

2. Rotate the VALUE dial to select the save-destination User patch.

* *This step is unnecessary if the current User patch is acceptable.*

* *To cancel the Write procedure, press [EXIT]. The Play screen returns to the display.*

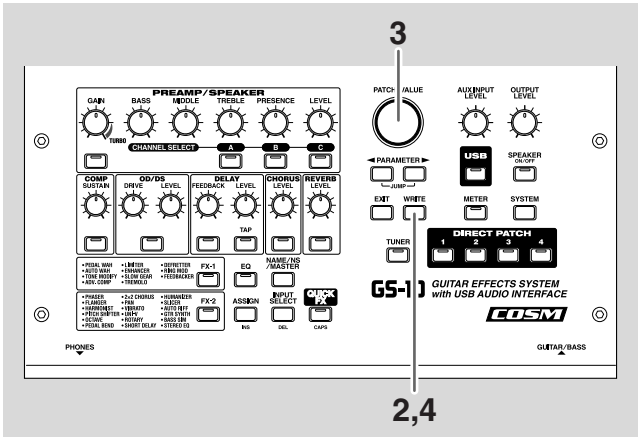
3. Press [WRITE].

The GS-10 switches to the write-destination patch, and you're returned to the Play screen.

* *The sound of the patch previously stored at the write destination will be lost once the write is executed.*

Copying Patches

You can copy a Preset or User patch to another User patch.



1. Select the copy-source patch (refer to "How to Switch Patches"; p. 18).

2. Press [WRITE].

The screen for specifying the copy-destination patch number appears in the display.

Copy-destination patch

3. Rotate the PATCH/VALUE dial to select the copy-destination User patch.

* *To cancel the copy, press [EXIT]. The Play screen returns to the display.*

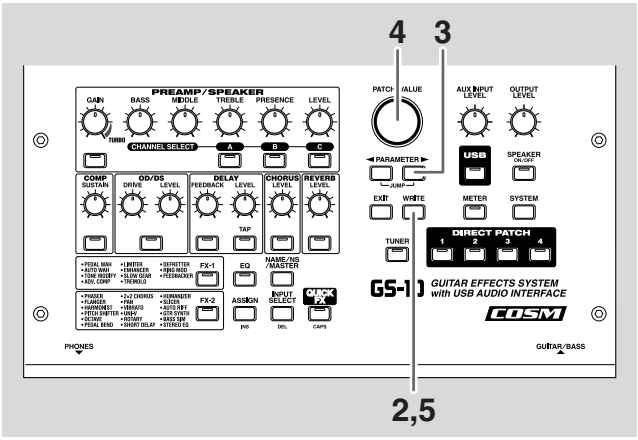
4. Press [WRITE].

The GS-10 switches to the copy-destination patch, and you're returned to the Play screen.

* *The sound of the patch previously stored at the copy destination will be lost once the copy is executed.*

Exchanging Patches

On the GS-10, you can "swap" or exchange the positions of two User patches. The following explains how this is done.



1. Select the exchange source patch.

* *Refer to "Patch Change" (p. 18).*

2. Press [WRITE].

3. Press PARAMETER [►].

The screen for specifying the exchange-destination patch number appears in the display.

4. Rotate the PATCH/VALUE dial to select the exchange destination User patch.

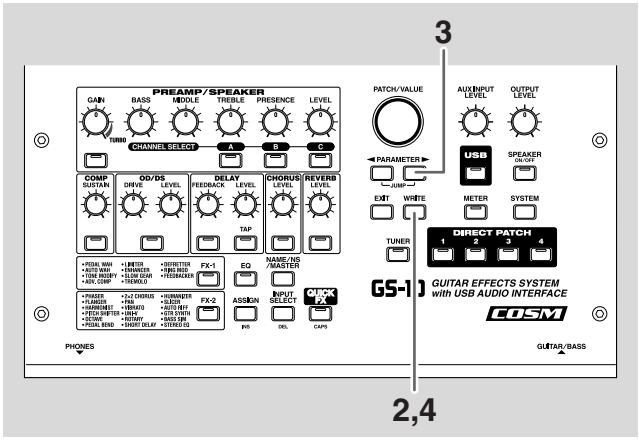
* *To cancel the exchange, press [EXIT]. The Play screen returns to the display.*

5. Press [WRITE].

The patch stored in the exchange source memory location and the patch stored in the exchange destination memory location are exchanged, and you're returned to the Play screen.

Initializing Patches

You can return (initialize) the User patches to their original standard settings.



1. Select the User patch you want to initialize.

* *Refer to "Patch Change" (p. 18).*

2. Press [WRITE].

3. Press PARAMETER [►] twice.

The screen for specifying the initialize-destination patch number appears in the display.

* *You can use the PATCH/VALUE dial to change the selection of the User patch to be initialized.*

* *To cancel the initialization, press [EXIT]. The Play screen returns to the display.*

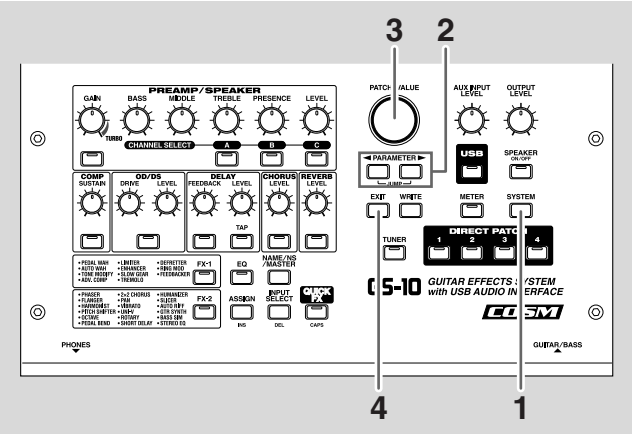
4. Press [WRITE].

The GS-10 switches to the initialized patch, and the Play screen returns to the display.

* *The tones stored in patches are lost once the initialization is executed.*

Registering Your Favorite Patches (DIRECT PATCH)

You can register preferred patches to DIRECT PATCH [1]–[4] and then press these buttons to call up the corresponding patches directly.



1. **Press [SYSTEM] a number of times until "DIRECT PATCH" is displayed.**

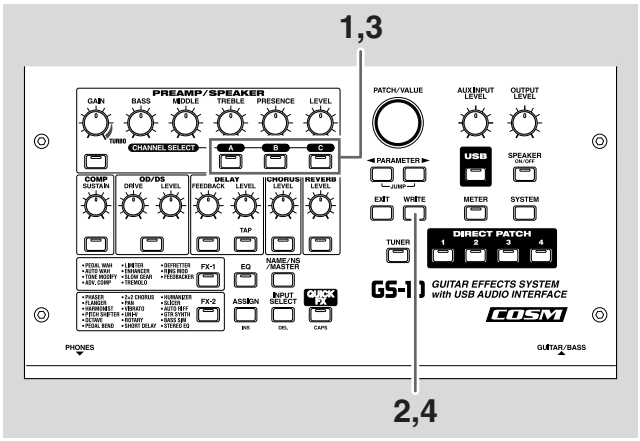
2. **Press PARAMETER [◄] [►] to select the number of the DIRECT PATCH button to which you want to register the patch.**
3. **Use the PATCH/VALUE dial to select the patch you want to register.**
4. **Press [EXIT] to return to the Play screen.**

You can also register patches by selecting the patch in the Play screen, then pressing one of the DIRECT PATCH [1]–[4] buttons after pressing the [WRITE] button. In this case, the patch appearing in the display is registered.

* *When a patch is registered using this method, the current settings are also saved along with the patch when it's registered. If you want to register only the patch, use the regular registration method.*

Copying the PREAMP/SPEAKER Settings to Another Channel

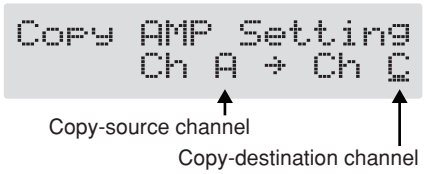
You can take the PREAMP/SPEAKER settings for one channel and copy them to another channel.



1. **Select the copy-source channel.**
2. **Press [WRITE].**
3. **Press CHANNEL SELECT [A]–[C] to select the copy-destination channel.**

   The channel copy screen appears in the display.

* *If you press the button for the same channel as the copy source, a channel other than the copy-source channel is selected for the copy destination.*



* *To change the copy-source or copy-destination channel, press PARAMETER [◄] [►] to move the cursor to the copy-source or copy-destination channel, then press CHANNEL SELECT [A]–[C].*
You can alternatively rotate the PATCH/VALUE dial to change the channel at the cursor position.

* *When the copy-source channel is changed, the tone is changed as well.*

* *To cancel the copy, press [EXIT]. The Play screen returns to the display.*

4. **Press [WRITE].**

   The settings are copied.

* *If you want to keep a tone for which you have made settings, use the "Write procedure" (p. 25) to save it to a User patch.*

Chapter 4 Introduction to Effects and Parameters

In this chapter you will find detailed descriptions for each of the GS-10's onboard effects, and the parameters used to control them.

MEMO

The sound being input to each effect is called the "direct sound," and the sound modified by the effect is called the "effect sound."

* *Setting values for gain– and volume–related parameters in the effects too high may result in oscillation.*

To derive the maximum performance from the GS-10, be sure to make the correct setting for INPUT SELECT (p. 19), the one that's most suitable for your setup.

You may not be able to achieve the expected effect if this is not set correctly.

* *Depending on the type of bass guitar you are using, you may not be able to achieve the intended effect if the input level to the GS-10 is excessively high. In such cases, lower the volume or tone of your bass guitar.*

PREAMP/SPEAKER (Preamp/ Speaker Simulator)

COSM technology plays an indispensable role in simulating the distinguishing characteristics of various guitar amps in the "Preamp" section, and is also used to simulate various speaker sizes and cabinet constructions in the "Speaker Simulator."

Parameter	Value
On/Off	Off, On
CH Select	A, B, C
Type	refer to p. 29
Gain	0–120
Bass	0–100
Middle	0–100
Treble	0–100
Presence	0–100
Level	0–100
Bright	Off, On
Gain SW	Low, Middle, High
SP Type (*)	Off, Original, 1x8", 1x10", 1X12", 1X15", 1X18", 2X12", 2X15", 4X10", 4X12", 8X10", 8X12", Custom 1, Custom 2
Mic Type (*)	DYN57, DYN421, CND451, CND87, FLAT
Mic Dis. (*)	Off Mic, On Mic
Mic Pos. (*)	Center, 1–10
Mic Level (*)	0–100
Direct Level (*)	0–100

(*) No effect when OUTPUT Select is set to "Line/Phones."

On/Off (Effect On/Off)

Turns the PREAMP/SPEAKER effect on/off.

CH Select (Channel Select)

Selects the preamp channel whose settings are to be changed.

Type

This sets the type of the guitar preamp.

JC-120	This is the sound of the Roland JC-120.
Jazz Combo	This is a sound suited to jazz.
Full Range	This is a sound with flat response. Good for acoustic guitar
Warm Clean	This gives a mellow, clean sound.
Clean TWIN	This models a Fender Twin Reverb.
Pro Crunch	This models a Fender Pro Reverb.
Tweed	This models a Fender Bassman 4 x 10" Combo.
Crunch	This is a crunch sound that can produce natural distortion.
Blues	This is a sound suited to blues.
Wild Crunch	This is a crunch sound with wild distortion.
VO Drive	This models the drive sound of a VOX AC-30TB.
VO Lead	This models the lead sound of the VOX AC-30TB.
MATCH Drive	This models the sound input to left input on a Matchless D/C-30.
Fat MATCH	This models the sound of a MATCHLESS with a modified high gain.
BG Lead	This models the lead sound of the MESA/Boogie combo amp.
BG Drive	This models a MESA/Boogie with TREBLE SHIFT SW on.
BG Rhythm	This models the rhythm channel of a MESA/Boogie.
Smooth Drive	This is a smooth drive sound.
MS1959 (I)	This models the sound input to Input I on a Marshall 1959.
MS1959 (II)	This models the sound input to Input II on a Marshall 1959.
MS1959 (I+II)	This models the sound of a Marshall 1959 with Inputs I and II connected in parallel.
MS HiGain	This models the sound of a Marshall with a modified midrange boost.
Power Stack	This provides the sound of a stack amp with active type tone circuitry.
R-FIER Red	This models the lead channel of a MESA/Boogie Dual Rectifier.
R-FIER Orng	This models the rhythm channel of a MESA/Boogie Dual Rectifier.
R-FIER Vint	This models a MESA/Boogie Rectifier with VINTAGE SW on.
T-AMP Clean	This models a Hughes & Kettner Triamp AMP1.
T-AMP Crunch	This models a Hughes & Kettner Triamp AMP2.
T-AMP Lead	This models a Hughes & Kettner Triamp AMP3.
SLDN	This models a Soldano SLO-100.
Drive Stack	This is a drive sound with high gain.
Lead Stack	This is a lead sound with high gain.
5150 Drive	This models the lead channel of a Peavey EVH 5150.
Metal Stack	This is a drive sound suited to metal.
Metal Lead	This is a lead sound suited to metal.
CONCERT 810	This models a Ampeg SVT.
SESSION	This models a SWR SM-400.
BASS 360	This models a acoustic 360.
T.E.	This models a Trace Elliot AH600SMX.
B-MAN	This models a Fender Bassman100.
FLIP TOP	This models a Ampeg B-15.
Bass Clean	This clean sound is great for use with bass guitars.
Bass Crunch	This is a crunch sound with natural distortion that sounds great with bass guitars.
Bass HiGain	This is a high-gain sound suitable for use with bass guitars.
Mic Preamp	Preamp suitable for vocals.
Custom 1	Custom amp 1
Custom 2	Custom amp 2
Custom 3	Custom amp 3

* *When the type is set to CONCERT 810, SESSION, BASS 360, T.E., B-MAN, FLIP TOP, Bass Clean, Bass Crunch, Bass HiGain, or Mic Preamp set OUTPUT SELECT (p. 16) as shown below to match the GS-10 to the type of amp to be connected.*

When connecting to an audio amp or similar equipment:

Line/Phones

When connecting to a guitar amp:

Combo Amp or Combo Return

When connecting to a bass amp:

Stack Amp or Stack Return

When CUSTOM 1–3 is selected for Type

You can set the following parameters when Type is set to CUSTOM.

☞ "Customizing the COSM Amps" (p. 55)

EDIT CUSTOM PRE 1–3

Parameter	Value
Type	JC Clean, TW Clean, Crunch, VO Lead, BG Lead, MS1959 Stk, Modern Stk
Bottom	-50–+50
Edge	-50–+50
Bass Freq	-50–+50
Treble Freq	-50–+50
Preamp Low	-50–+50
Preamp High	-50–+50

Gain

Adjusts the distortion of the amp.

Bass

Adjusts the tone for the low frequency range.

Middle

Adjusts the tone for the middle frequency range.

Treble

Adjusts the tone for the high frequency range.

Presence

Adjusts the tone for the ultra high frequency range.

Level

Adjusts the volume of the entire preamp.

* *Be careful not to raise the Level setting too high.*

Bright

Turns the bright setting on/off.

Off:

Bright is not used.

On:

Bright is switched on to create a lighter and crisper tone.

* *Depending on the "Type" setting, this may not be displayed.*

Gain SW

Provides for selection from three levels of distortion: Low, Middle, and High. Distortion will successively increase for settings of "Low," "Middle" and "High."

* *The sound of each Type is created on the basis that the Gain is set to "Middle." So, normally set it to "Middle."*

SP Type (Speaker Type)

Off	This turns off the speaker simulation.
Original	This is the built-in speaker of the amp you selected with "Type."
1x8″	This is a compact open-back speaker cabinet with one 8-inch speaker.
1x10″	This is a compact open-back speaker cabinet with one 10-inch speaker.
1x12″	This is a compact open-back speaker cabinet with one 12-inch speaker.
1x15″	This is a compact open-back speaker cabinet with one 15-inch speaker.
1x18″	This is a compact open-back speaker cabinet with one 18-inch speaker.
2x12″	This is a general open-back speaker cabinet with two 12-inch speakers.
2x15″	This is a general open-back speaker cabinet with two 15-inch speakers.
4x10″	This is an optimal speaker cabinet for a large enclosed amp with four 10-inch speakers.
4x12″	This is an optimal speaker cabinet for a large enclosed amp with four 12-inch speakers.
8x10″	This is a double stack of two cabinets, each with four 10-inch speakers.
8x12″	This is a double stack of two cabinets, each with four 12-inch speakers.
Custom 1	Custom speaker 1
Custom 2	Custom speaker 2

When Custom 1–2 is selected for SP Type

You can set the following parameters when SP Type is set to Custom 1–2.

☞ "Customizing the Speakers" (p. 56)

EDIT CUSTOM SP 1 –2

Parameter	Value
Speaker Size	5”–15”
Color Low	-10–+10
Color High	-10–+10
Speaker Num	x1, x2, x4, x8
Cabinet	Open, Close

Mic Type

This setting selects the simulated mic type.

DYN57	General dynamic mic used for instruments and vocals. Optimal for use in miking guitar amps.
DYN421	Dynamic mic with extended low end.
CND451	Small condenser mic for use with instruments.
CND87	Condenser mic with flat response.
FLAT	Simulates a mic with perfectly flat response. Produces a sonic image close to that of listening to the sound directly from the speakers (on site).

Mic Dis. (Mic Distance)

Simulates the distance between the mic and speaker.

Off Mic:

This setting points the mic away from the speaker.

On Mic:

Provides conditions whereby the mic is directed more towards the speaker.

Mic Pos. (Mic Position)

This simulates the microphone position. “Center” simulates the condition that the microphone is set in the middle of the speaker cone. “1-10” means that the microphone is moved away from the center of the speaker cone.

Mic Level

Adjusts the volume of the microphone.

Direct Level

Adjusts the volume of the direct sound.

COMP (Compressor)

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

Parameter	Value
On/Off	Off, On
Sustain	0–100
Level	0–100

On/Off (Effect On/Off)

Turns the COMP effect on/off.

Sustain

Adjusts the range (time) over which low-level signals are boosted. Larger values will result in longer sustain.

Level

Adjusts the volume.

OD/DS (Overdrive/Distortion)

This effect distorts the sound to create long sustain.
It provides 22 types of distortion and three different custom settings.

Parameter	Value
On/Off	Off, On
Type	refer to below
Drive	0–100
Bass	-50–+50
Treble	-50–+50
Effect Level	0–100
Direct Level	0–100

On/Off (Effect On/Off)

Turns the OD/DS effect on/off.

Type

Selects the type of distortion.

Blues OD	This is a crunch sound of the BOSS BD-2.
Turbo OD	This is the high-gain overdrive sound of the BOSS OD-2.
Booster	This is a booster that works very well with COSM amps.
OD-1	This is the sound of the BOSS OD-1.
T-Scream	This models an Ibanez TS-808.
Natural OD	This is an overdrive sound that provides a natural-sounding distortion.
Bass OD	This is an overdrive sound that works well with bass guitars.
Distortion	This gives a basic, traditional distortion sound.
RAT	This models a Proco RAT.
GUV DS	This models an Marshall GUV' NOR.
Mild DS	This is a distortion sound that provides a mild distortion.
Solid DS	This is a distortion sound featuring an edge effect.
DST+	This models an MXR DISTORTION+.
Metal Zone	This is the sound of the BOSS MT-2.
R-MAN	This models a ROCKMAN.
Heavy Metal	This creates a heavier distortion sound.
Loud	This is a distortion sound with a boosted low end.
Sharp	This is a distortion sound with a boosted high end.
Mechanical	This distortion sound boosts the low and high ends, yielding a mechanical-sounding distortion.
'60s FUZZ	This models a FUZZFACE.
Oct FUZZ	This models an ACETONE FUZZ.
MUFF FUZZ	This models an Electro-Harmonix Big Muff π.
Custom 1	Custom OD/DS 1
Custom 2	Custom OD/DS 2
Custom 3	Custom OD/DS 3

When CUSTOM 1–3 is selected for Type

You can set the following parameters when TYPE is set to Custom 1–3.

☞ "Customizing Overdrive and Distortion" (p. 56)

EDIT CUSTOM DS 1–3

Parameter	Value
Type	OD-1, OD-2, CRUNCH, DS-1, DS-2, METAL-1, METAL-2, FUZZ
Bottom	-50–+50
Top	-50–+50
Low	-50–+50
High	-50–+50

Drive

Adjusts the depth of distortion.

Bass

Adjusts the tone for the low frequency range.

Treble

Adjusts the tone for the high frequency range.

Effect Level

Adjusts the volume of the overdrive/distortion sound.

Direct Level

Adjusts the volume of the direct sound.

DELAY

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

Parameter	Value
On/Off	Off, On
Type	Single, Pan, Stereo
DlyTime	0 ms–1800 ms, BPM ♪ –BPM 𝅗𝅥
Delay Time.F	0 msec–20 msec
Tap Time	0%–100% (Type = Pan)
Feedback	0–100
High Cut	700 Hz–11.0 kHz, Flat
Effect Level	0–120

On/Off (Effect On/Off)

Turns the DELAY Effect on/off.

Type

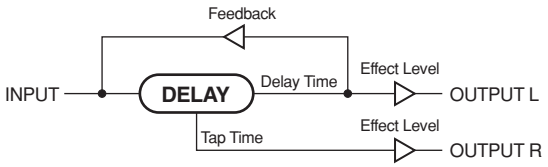
This selects which type of delay.

Single:

By adjusting the delay time and feedback, you can obtain a normal delay effect.

Pan:

This delay is specifically for stereo output. This allows you to obtain the tap delay effect that divides the delay time, then deliver them to L and R channels.



Stereo:

The direct sound is output from the left channel, and the effect sound is output from the right channel.

DlyTime (Delay Time)

This determines the delay time.

* *When set to BPM, the value of each parameter will be set according to the value of the Master BPM (p. 54) specified for each patch. This makes it easier to achieve effect sound settings that match the tempo of the song (synchronizing the time to twice or four times the time length of the BPM when the set time is increased).*
When setting to BPM, press PARAMETER [►] to display the Master BPM settings screen.

DlyTime.F (Delay Time Fine)

Make fine adjustments to the delay time.

Tap Time

Adjusts the delay time of the right channel delay. This setting adjusts the R channel delay time relative to the L channel delay time (considered as 100%).

Feedback

"Feedback" is returning a delay signal to the input. This parameter determines the amount of feedback. A higher value will increase the number of the delay repeats.

High Cut (High Cut Filter)

This sets the frequency at which the high cut filter begins to take effect. This allows you to get a mild effect sound by cutting the high-end component above the set frequency.

When it is set to "Flat," the high cut filter is off or has no effect.

Effect Level

This adjusts the volume of the delay sound.

MEMO

After [TAP] is pressed several times, the interval between presses of the button is then used as the delay time setting.

You can change the Master BPM by setting the delay time to the BPM and pressing [TAP] several times.

CHORUS

In this effect, a slightly detuned sound is added to the original sound to add depth and breadth.

Parameter	Value
On/Off	Off, On
Mode	Mono, Stereo1, Stereo2
Rate	0–100, BPM 𝅗𝅥 –BPM ♪
Depth	0–100
Pre Delay	0.0 msec–40.0 msec
Low Cut	Flat, 55 Hz –800 Hz
High Cut	700 Hz –11.0 kHz, Flat
Effect Level	0–100

On/Off (Effect On/Off)

Turns the CHORUS effect on/off.

Mode

Selection for the chorus mode.

Mono:

This chorus effect outputs the same sound from both L and R.

Stereo1:

This is a stereo chorus effect that adds different chorus sounds to L and R.

Stereo2:

This is a stereo chorus effect produced by synthesizing the spatial characteristics of the direct sound and the effect sound.

Rate

Adjusts the rate of the chorus effect.

* *When set to BPM, the value of each parameter will be set according to the value of the Master BPM (p. 54) specified for each patch. This makes it easier to achieve effect sound settings that match the tempo of the song (synchronizing the cycle to one-half or one-fourth of the BPM when the set cycle rate is increased).*
When setting to BPM, press PARAMETER [►] to display the Master BPM settings screen.

Depth

Adjusts the depth of the chorus effect. To use it for doubling effect, set the value to "0."

Pre Delay

Adjusts the time needed for the effect sound to be output after the direct sound has been output. By setting a longer pre delay time, you can obtain an effect that sounds like more than one sound is being played at the same time (doubling effect).

Low Cut (Low Cut Filter)

This sets the frequency at which the low cut filter begins to take effect. This lets you cut the low-end component below the set frequency to create a clear, distinct low end, thereby bringing out the high end of the effect.

When "Flat" is selected, the low cut filter will have no effect.

High Cut (High Cut Filter)

This sets the frequency at which the high cut filter begins to take effect. This allows you to get a mild effect sound by cutting the high-end component above the set frequency.

When "Flat" is selected, the high cut filter will have no effect.

Effect Level

Adjusts the volume of the effect sound.

REVERB

This effect adds reverberation to the sound.

Parameter	Value
On/Off	Off, On
Type	Ambience, Room, Hall 1, Hall 2, Plate
Rev Time	0.1 sec–10.0 sec
Pre Delay	0 msec–100 msec
Low Cut	Flat, 55.0 Hz–800 Hz
High Cut	700 Hz–11.0 kHz, Flat
Density	0–10
Effect Level	0–100

On/Off (Effect On/Off)

Turns the REVERB effect on/off.

Type

This selects the reverb type. Various different simulations of space are offered.

Ambience	Simulates an ambience mic (off-mic, placed at a distance from the sound source) used in recording and other applications. Rather than emphasizing the reverberation, this reverb is used to produce a sense of openness and depth.
Room	Simulates the reverberation in a small room. Provides warm reverberations.
Hall 1	Simulates the reverberation in a concert hall. Provides clear and spacious reverberations.
Hall 2	Simulates the reverberation in a concert hall. Provides warm reverberations.
Plate	Simulates plate reverberation (a reverb unit that uses the vibration of a metallic plate). Provides a metallic sound with a distinct upper range.

Rev Time (Reverb Time)
Adjusts the length (time) of reverberation.

Pre Delay
Adjusts the time until the reverb sound appears.

Low Cut (Low Cut Filter)
This sets the frequency at which the low cut filter begins to take effect. This lets you cut the low-end component below the set frequency to create a clear, distinct low end, thereby bringing out the high end of the effect.

When "Flat" is selected, the low cut filter will have no effect.

High Cut (High Cut Filter)
This sets the frequency at which the high cut filter begins to take effect. This allows you to get a mild effect sound by cutting the high-end component above the set frequency.

When "Flat" is selected, the high cut filter will have no effect.

Density
This adjusts the density of the reverb sound.

Effect Level
Adjusts the volume of the reverb sound.

EQ (Equalizer)

Adjusts the tone. Parametric control is provided for the high-mid range and low-mid range.

Parameter	Value
On/Off	Off, On
Low EQ	-20 dB–+20 dB
Lo-Mid f	20.0 Hz–10.0 kHz
Lo-Mid Q	0.5–16
Lo-Mid EQ	-20 dB–+20 dB
Hi-Mid f	20.0 Hz–10.0 kHz
Hi-Mid Q	0.5–16
Hi-Mid EQ	-20 dB–+20 dB
High EQ	-20 dB–+20 dB
Level	-20 dB–+20 dB

On/Off (Effect On/Off)
Switches the EQ effect on/off.

Low EQ (Low Equalizer)
Adjusts the low frequency range tone.

Lo-Mid f (Low-Middle Frequency)
Specify the center of the frequency range that will be adjusted by the "Lo-Mid EQ."

Lo-Mid Q (Low-Middle Q)
Adjusts the width of the area affected by the EQ centered at the "Lo-Mid f." Higher values will narrow the area.

Lo-Mid EQ (Low-Middle Equalizer)
Adjusts the low-middle frequency range tone.

Hi-Mid f (High-Middle Frequency)
Specify the center of the frequency range that will be adjusted by the "Hi-Mid EQ."

Hi-Mid Q (High-Middle Q)
Adjusts the width of the area affected by the EQ centered at the "Hi-Mid f." Higher values will narrow the area.

Hi-Mid EQ (High-Middle Equalizer)
Adjusts the high-middle frequency range tone.

High EQ (High Equalizer)
Adjusts the high frequency range tone.

Level
Adjusts the volume after the equalizer.

FX-1

With FX-1, you can select the effect to be used from the following.

- **PEDAL WAH**
- **AUTO WAH**
- **TONE MODIFY**
- **ADV. COMP (Advanced Compressor)**
- **LIMITER**
- **ENHANCER**
- **SLOW GEAR**
- **TREMOLO**
- **DEFRETTER**
- **RING MOD (Ring Modulator)**
- **FEEDBACKER**

Parameter	Value
On/Off	Off, On
FX Select	PW, AW, TM, ACS, LM, ENH, SG, TR, DF, RM, FB

On/Off (Effect On/Off)

Switches the FX-1 effect on/off.

FX Select (Effect Select)

This selects the effect to be used.

PW (Pedal Wah)

This provides an effect that works like a wah pedal.

With PW selected, the expression pedal connected to the GS-10 can be automatically set to function as a wah pedal.

☞ "Setting the External Expression Pedal Functions (Expression Pedal Function)" (p. 58)

Parameter	Value
Type	CRY Wah, VO Wah, Fat Wah, Light Wah, 7String Wah, Reso Wah, Bass Wah, Custom 1, Custom 2, Custom 3
Pdl Position	0–100
Level	0–100

Type

This selects the wah type.

CRY Wah	This models the sound of the CRY BABY wah pedal popular in the `70s.
VO Wah	This models the sound of the VOX V846.
Fat Wah	This is a wah sound featuring a bold tone.
Light Wah	This wah has a refined sound with no unusual characteristics.
7String Wah	Wah featuring a broader range of variations for the seven-string guitar.
Reso Wah	This completely original effect offers enhancements on the characteristic resonances produced by analog synth filters.
Bass Wah	This is a wah suitable for use with bass guitars.
Custom 1	Custom wah 1
Custom 2	Custom wah 2
Custom 3	Custom wah 3

When Type Is Set to Custom1–3

You can select the following parameters when type is set to Custom1–3.

☞ "Customizing Pedal Wah" (p. 57)

EDIT CUSTOM WAH1–3

Parameter	Value
Type	CRY WAH, VO WAH, Fat WAH, Light WAH, 7String WAH
Q	-50–+50
Range Low	-50–+50
Range High	-50–+50
Presence	-50–+50

Pdl Position (Pedal Position)

This adjusts the position of the wah pedal.

Level

Adjusts the volume.

AW (Auto Wah)

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

Parameter	Value
Mode	LPF, BPF
Polarity	Down, Up
Sens	0–100
Freq	0–100
Peak	0–100
Rate	0–100, BPM 𝅗𝅥 –BPM ♪
Depth	0–100
Level	0–100

Mode

Selection for the wah mode.

LPF (Low Pass Filter):

This creates a wah effect over a wide frequency range.

BPF (Band Pass Filter):

This creates a wah effect in a narrow frequency range.

Polarity

Selection for the direction in which the filter will change in response to the input.

Up:

The frequency of the filter will rise.

Down:

The frequency of the filter will fall.

Sens (Sensitivity)

This adjusts the sensitivity at which the filter will change in the direction determined by the polarity setting. Higher values will result in a stronger response. With a setting of "0," the strength of picking will have no effect.

Frequency

This adjusts the center frequency of the Wah effect.

Peak

Adjusts the way in which the wah effect applies to the area around the center frequency. Lower values will produce a wah effect over a wide area around the center frequency. Higher values will produce a wah effect in a narrow area around the center frequency.

* *With a value of "50" a standard wah sound will be produced.*

Rate

Adjusts the frequency of the auto wah.

* *When set to BPM, the value of each parameter will be set according to the value of the Master BPM (p. 54) specified for each patch. This makes it easier to achieve effect sound settings that match the tempo of the song (synchronizing the cycle to one-half or one-fourth of the BPM when the set cycle rate is increased).*
When setting to BPM, press PARAMETER [►] to display the Master BPM settings screen.

Depth

Adjusts the depth of the auto wah effect.

Level

Adjusts the volume.

TM (Tone Modify)

This changes the characteristics of the connected guitar.

Parameter	Value
Type	Fat, Presence, Mild, Tight, Enhance, 'S' → 'H', 'H' → 'S', 'H' → 'HF', 'S' → Hollow, 'H' → Hollow, 'S' → AC, 'H' → AC, 'P' → AC
Low	-50–+50
High	-50–+50
Level	0–100

Type

This selects the type of tone modification.

Fat	Fat tone with boosted mid range.
Presence	Bright tone with boosted high-mid range.
Mild	Mild tone with the high end cut back.
Tight	Tone with the low frequencies cut.
Enhance	Tone with the high frequencies boosted.
'S' → 'H'	Changes from a single-coil pickup tone to a humbucking pickup tone.
'H' → 'S'	Changes from a humbucking pickup tone to a mixed tone of two single-coil pickups.
'H' → 'HF'	Changes from a humbucking pickup tone to a single-coil pickup half tone.
'S' → Hollow	Changes a single-coil pickup tone to a full-acoustic tone with the body resonance added.
'H' → Hollow	Changes a humbucking pickup tone to a full-acoustic tone with the body resonance added.
'S' → AC	Changes a single-coil pickup tone to an acoustic guitar tone.
'H' → AC	Changes a humbucking pickup tone to an acoustic guitar tone.
'P' → AC	Changes a piezo pickup tone to an acoustic guitar tone.

Low

Adjusts the tone for the low frequency range.

High

Adjusts the tone for the High frequency range

Level

Adjusts the volume.

ACS (Advanced Compressor)

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

Parameter	Value
Type	Stereo Comp, BOSS Comp, D-Comp
Sustain	0–100
Attack	0–100
Tone	-50–+50
Level	0–100

Type

Selects the compressor type.

Stereo Comp	This selects a stereo compressor.
BOSS Comp	This models a BOSS CS-3.
D-Comp	This models a MXR DynaComp.

Sustain

Adjusts the range (time) over which low-level signals are boosted. Larger values will result in longer sustain.

Attack

Adjusts the strength of the picking attack. Larger values will result in a sharper attack, creating a more clearly defined sound.

Tone

Adjusts the tone.

Level

Adjusts the volume.

LM (Limiter)

The limiter attenuates loud input levels to prevent distortion.

Parameter	Value
Type	Stereo LM, Rack 160D, Vtg Rack U
Attack	0–100
Threshold	0–100
Ratio	1:1 –∞:1
Release	0–100
Level	0–100

Type

Selects the limiter type.

Stereo LM	This selects a stereo limiter.
Rack 160D	This models a dbx 160X.
Vtg Rack U	This models a UREI 1178.

Attack

Adjusts the strength of the picking attack when the strings are played. Higher values result in s sharper attack, creating a more clearly defined sound.

Threshold

Adjust this as appropriate for the input signal from your guitar. When the input signal level exceeds this threshold level, limiting will be applied.

Ratio

This selects the compression ratio used with signals in excess of the threshold level.

Release

This adjusts the time from when the signal level drops below the threshold until when limiting is removed.

Tone

Adjusts the tone.

Level

Adjusts the volume.

ENH (Enhancer)

By adding sounds which are out-of-phase with the direct sound, this effect enhances the definition of the sound, and pushes it to the forefront.

Parameter	Value
Sens	0–100
Freq	800 Hz–10.0 kHz
Mix Level	0–100

Sens (Sensitivity)

Adjusts the manner in which the enhancer will be applied relative to the input signals.

Freq (Frequency)

Adjusts the frequency at which the enhancer effect will begin to be applied. The effect will be made apparent in the frequencies above the frequency set here.

Mix Level

Adjusts the amount of phase-shifted sound of the range set by "Frequency" that is to be mixed with the input.

SG (Slow Gear)

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

Parameter	Value
Sens	0–100
Rise Time	0–100

Sens (Sensitivity)

This adjusts the sensitivity of the slow gear. When it is set to a lower value, the effect of the slow gear can be obtained only with a stronger picking, while no effect is obtained with a weaker picking. When the value is set higher, the effect is obtained even with a weak picking.

Rise Time

This adjusts the time needed for the volume to reach its maximum from the moment you begin picking.

TR (Tremolo)

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

Parameter	Value
Wave Shape	0–100
Rate	0–100, BPM 𝅗𝅥 –BPM ♪
Depth	0–100

Wave Shape

This adjusts changes in volume level.

Rate

Adjusts the frequency (speed) of the change.

* *When set to BPM, the value of each parameter will be set according to the value of the Master BPM (p. 54) specified for each patch. This makes it easier to achieve effect sound settings that match the tempo of the song (synchronizing the cycle to one-half or one-fourth of the BPM when the set cycle rate is increased).*
When setting to BPM, press PARAMETER [►] to display the Master BPM settings screen.

Depth

Adjusts the depth of the effect.

DF (Defretter)

This simulates a fretless guitar.

Parameter	Value
Tone	-50–+50
Sens	0–100
Attack	0–100
Depth	0–100
Resonance	0–100
Effect Level	0–100
Direct Level	0–100

Tone
Adjusts the amount of blurring between the notes.

Sens (Sensitivity)
This controls the input sensitivity of the defretter.

Attack
Adjusts the attack of the picking sound.

Depth
This controls the rate of the harmonics.

Resonance
Adds a characteristically resonant quality to the sound.

Effect Level
Adjust the volume of the defretter sound.

Direct Level
Adjust the volume of the direct sound.

RM (Ring Modulator)

This creates a bell-like sound by ring-modulating the guitar sound with the signal from the internal oscillator. The sound will be unmusical and lack distinctive pitches.

Parameter	Value
Mode	Normal, Intelligent
Freq	0–100
Effect Level	0–100
Direct Level	0–100

Mode
This selects the mode for the ring modulator.

Normal:
This is a normal ring modulator.

Intelligent:
By ring-modulating the input signal, a bell like sound is created. The intelligent ring modulator changes the oscillation frequency according to the pitch of the input sound and therefore produces a sound with the sense of pitch, which is quite different from "Normal." This effect does not give a satisfactory result if the pitch of the guitar sound is not correctly detected. So, you must use single notes, not chords.

Freq (Frequency)
This adjusts the frequency of the internal oscillator.

Effect Level
This adjusts the volume of the effect sound.

Direct Level
This adjusts the volume of the direct sound.

FB (Feedbacker)

This allows you to use feedback playing techniques.

* *Note that the notes you want to apply feedback to must be played singly and cleanly.*
* *You can use the foot switch to switch the effect on and off. For more details, refer to "Setting the External Pedal Function for Individual Patches (Assign)" (p. 60).*

Parameter	Value	
Mode	OSC, Natural	
Rise Time	0–100	Mode= OSC
Rise Time (▲)	0–100	Mode= OSC
F.B.Level	0–100	
F.B.Level (▲)	0–100	Mode= OSC
Vib Rate	0–100, BPM 𝅗𝅥 –BPM ♪	Mode= OSC
Vib Depth	0–100	Mode= OSC

Mode
Select either oscillator "OSC" or natural "Natural."

OSC (Oscillator):
An artificial feedback sound will be created internally.

* *When OSC is selected, the effect is activated after a single note is played and the note stabilizes. A feedback effect is created when the effect switches on; the feedback disappears when the OSC effect switches off.*

Natural:
Analyzes the pitch of the guitar sound being input, and then creates a feedback sound.

Rise Time
This determines the time needed for the volume of the feedback sound to reach its maximum from the moment the effect is turned on.

Rise Time (▲)
This determines the time needed for the volume of the one octave higher feedback sound to reach its maximum from the moment the effect is turned on.

F.B.Level (Feedback Level)
Adjusts the volume of the feedback sound.

F.B.Level (▲)
This adjusts the volume of the one octave higher feedback sound.

Vib Rate (Vibrato Rate)
This adjusts the rate of the vibrato when the feedbacker is on.

* *When set to BPM, the value of each parameter will be set according to the value of the Master BPM (p. 54) specified for each patch. This makes it easier to achieve effect sound settings that match the tempo of the song (synchronizing the cycle to one-half or one-fourth of the BPM when the set cycle rate is increased).*
When setting to BPM, press PARAMETER [►] to display the Master BPM settings screen.

Vib Depth (Vibrato Depth)
This adjusts the depth of the vibrato when the feedbacker is on.

FX-2
With FX-2, you can select the effect to be used from the following.

- **PHASER**
- **FLANGER**
- **HARMONIST**
- **PITCH SHIFT (Pitch Shifter)**
- **OCTAVE**
- **PEDAL BEND**
- **2x2 CHORUS**
- **PAN**
- **VIBRATO**
- **UNI-V**
- **ROTARY**
- **SHORT DELAY**
- **HUMANIZER**
- **SLICER**
- **AUTO RIFF**
- **GUITAR SYNTH**
- **BASS SIM. (Bass Simulator)**
- **STEREO EQ (Stereo Equalizer)**

Parameter	Value
On/Off	Off, On
FX Select	PH, FL, HR, PS, OC, PB, 2CE, PAN, VB, UV, RT, SDD, HU, SL, AR, SYN, BS, SEQ

On/Off (Effect On/Off)
Switches the FX-2 effect on/off.

FX Select (Effect select)
This selects the effect to be used.

PH (Phaser)

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

Parameter	Value
Type	4 Stage, 8 Stage, 12 Stage, Bi-Phase
Rate	0–100, BPM 𝅗𝅥 –BPM ♪
Depth	0–100
Manual	0–100
Resonance	0–100
Step Rate	Off, 0–100, BPM 𝅗𝅥 –BPM ♪
Effect Level	0–100
Direct Level	0–100

Type

Selects the number of stages that the phaser effect will use.

4 Stage	This is a four-phase effect. A light phaser effect is obtained.
8 Stage	This is an eight-phase effect. It is a popular phaser effect.
12 Stage	This is a twelve-phase effect. A deep phase effect is obtained.
Bi-Phase	This is the phaser with two phase shift circuits connected in series.

Rate

This sets the rate of the phaser effect.

* *When set to BPM, the value of each parameter will be set according to the value of the Master BPM (p. 54) specified for each patch. This makes it easier to achieve effect sound settings that match the tempo of the song (synchronizing the cycle to one-half or one-fourth of the BPM when the set cycle rate is increased).*
When setting to BPM, press PARAMETER [►] to display the Master BPM settings screen.

Depth

Determines the depth of the phaser effect.

Manual

Adjusts the center frequency of the phaser effect.

Resonance

Determines the amount of resonance (feedback). Increasing the value will emphasize the effect, creating a more unusual sound.

Step Rate

This sets the cycle of the step function that changes the rate and depth. When it is set to a higher value, the change will be finer.

Set this to "Off" when not using the Step function.

* *When set to BPM, the value of each parameter will be set according to the value of the Master BPM (p. 54) specified for each patch. This makes it easier to achieve effect sound settings that match the tempo of the song (synchronizing the cycle to one-half or one-fourth of the BPM when the set cycle rate is increased).*
When setting to BPM, press PARAMETER [►] to display the Master BPM settings screen.

Effect Level

This adjusts the volume of the phaser.

Direct Level

This adjusts the volume of the direct sound.

FL (Flanger)

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

Parameter	Value
Rate	0–100, BPM 𝅗𝅥 –BPM ♪
Depth	0–100
Manual	0–100
Resonance	0–100
Separation	0–100
Low Cut	Flat, 55.0 Hz–800 Hz
Effect Level	0–100
Direct Level	0–100

Rate

This sets the rate of the flanging effect.

* *When set to BPM, the value of each parameter will be set according to the value of the Master BPM (p. 54) specified for each patch. This makes it easier to achieve effect sound settings that match the tempo of the song (synchronizing the cycle to one-half or one-fourth of the BPM when the set cycle rate is increased).*
When setting to BPM, press PARAMETER [►] to display the Master BPM settings screen.

Depth

Determines the depth of the flanging effect.

Manual

Adjusts the center frequency at which to apply the effect.

Resonance
Determines the amount of resonance (feedback). Increasing the value will emphasize the effect, creating a more unusual sound.

Separation
Adjusts the diffusion. The diffusion increases as the value increases.

Low Cut (Low Cut Filter)
This sets the frequency at which the low cut filter begins to take effect. This lets you cut the low-end component below the set frequency to create a clear, distinct low end, thereby bringing out the high end of the effect.

When "Flat" is selected, the low cut filter will have no effect.

Effect Level
This adjusts the volume of the flanger.

Direct Level
This adjusts the volume of the direct sound.

HR (Harmonist)

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

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

Parameter	Value
Voice	1-Voice, 2-Mono, 2-Stereo
Harm	-2oct–+2oct, Scale1–Scale29
PreDly	0 ms–300 ms, BPM ♪ –BPM ♩
Feedback	0–100
Level	0–100
Key	C (Am)–B (G#m)
Direct Level	0–100
(User Scale)	
User	1–29
DIR	C–B
EFF	C–B (±2 octave)

Voice
This selects the number of voices for the pitch shift sound (harmony).

1-Voice:
One-voice pitch-shifted sound output in monaural.

2-Mono:
Two-voice pitch-shifted sound (HR1, HR2) output in monaural.

2-Stereo:
Two-voice pitch-shifted sound (HR1, HR2) output through left and right channels.

Harm (Harmony)
This determines the pitch of the sound added to the input sound, when you are making a harmony. It allows you to set it by up to 2 octaves higher or lower than the input sound. When the scale is set to "Scale 1–Scale29," this parameter sets the user scale number to be used.

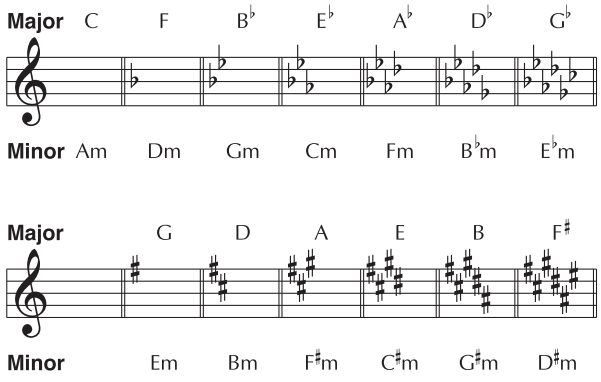
PreDly (Pre Delay)
Adjusts the time from when the direct sound is heard until the harmonist sounds are heard. Normally you can leave this set at "0ms."

* *When set to BPM, the value of each parameter will be set according to the value of the Master BPM (p. 54) specified for each patch. This makes it easier to achieve effect sound settings that match the tempo of the song (synchronizing the time to twice or four times the time length of the BPM when the set time is increased).*
When setting to BPM, press PARAMETER [►] to display the Master BPM settings screen.

Feedback
This adjusts the feedback amount of the harmonist sound.

Level
This adjusts the volume.

Key
Specify the key of the song you are playing. By specifying the key, you can create harmonies that fit the key of the song. The key setting corresponds to the key of the song (♯, ♭) as follows.



Direct Level
This adjusts the volume of the direct sound.

Creating Harmonist Scales (User Scale)

When "Harmony" is set to any value from -2oct to +2oct, and the harmony does not sound the way you intend, use a "User scale."

You can set any of 29 different "User scales."

1. **Press [FX-2], then press PARAMETER [◄] [►] so that "FX Select" is displayed.**
2. **Rotate the PATCH/VALUE dial to select "HR."**
3. **Press PARAMETER [◄] [►] to select "HR1 Harm" (or "HR2 Harm"), then rotate the PATCH/VALUE dial to select a setting from "Scale 1–29."**
4. **Press PARAMETER [►] a number of times so that the User scale settings screen is displayed.**

5. **Press PARAMETER [◄] [►] to move the cursor, then rotate the PATCH/VALUE dial to set the User scale.**

User:

You can change the number of the user scale.

DIR (Direct):

Sets the note name of the input sound. You can also play individual notes on the guitar and let the GS-10 interpret the note name.

EFF (Effect):

Sets the note name of the output sound.

The triangle next to the note name indicates the octave.

One downward-pointing triangle indicates a note one octave below the note displayed; two triangles indicates a two-octave drop.

One upward-pointing triangle indicates a note one octave above the note displayed; two triangles indicates a two-octave rise.

PS (Pitch Shifter)

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

Parameter	Value
Voice	1-Voice, 2-Mono, 2-Stereo
Mode	Fast, Medium, Slow, Mono
Pitch	-24 –+24
Fine	-50–+50
PreDly	0 ms–300 ms, BPM ♪ –BPM ♩
Feedback	0–100
Level	0–100
Direct Level	0–100

Voice

This selects the number of voices for the pitch shift sound.

1-Voice:

One-voice pitch-shifted sound output in monaural.

2-Mono:

Two-voice pitch-shifted sound (PS1, PS2) output in monaural.

2-Stereo:

Two-voice pitch-shifted sound (PS1, PS2) output through left and right channels.

Mode

Selection for the pitch shifter mode.

Fast, Medium, Slow:

A chord can be input with a normal pitch shifter. The response is slower in the order of Fast, Medium and Slow, but the modulation is lessened in the same order.

Mono:

This mode is used for inputting single notes.

Use this setting when you want to achieve a pedal bend effect with an external expression pedal.

Pitch

Adjusts the amount of pitch shift (the amount of pitch change) in semitone steps.

Fine

Make fine adjustments to the pitch shift.

* *The amount of the change in the Fine "100" is equivalent to that of the Pitch "1."*

PreDly (Pre Delay)

Adjusts the time from when the direct sound is heard until the pitch shifted sounds are heard. Normally you can leave this set at "0ms."

* *When set to BPM, the value of each parameter will be set according to the value of the Master BPM (p. 54) specified for each patch. This makes it easier to achieve effect sound settings that match the tempo of the song (synchronizing the time to twice or four times the time length of the BPM when the set time is increased).*
When setting to BPM, press PARAMETER [►] to display the Master BPM settings screen.

Feedback
This adjusts the feedback amount of the pitch shift sound.

Level
Adjusts the volume.

Direct Level
This adjusts the volume of the direct sound.

OC (Octave)

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

Parameter	Value
Range	Range 1–Range 4
Octave Level	0–100
Direct Level	0–100

Range
This selects the pitch range for the input sound to which you want to add the effects.

The range to which the affect is applied changes with the Input Select (p. 19) value.

Input Select	Guitar Microphone USB (Gtr/Mic) AUX	Bass USB
Range 1	7th string, open (B) to 1st string, 24th fret (E)	Low B, open (B) to High C, 24th fret (C)
Range 2	7th string, open (B) to 1st string, 12th fret (E)	Low B, open (B) to 1st string, 19th fret (C)
Range 3	7th string, open (B) to 1st string, open (E)	Low B, open (B) to 1st string, 9th fret (E)
Range 4	7th string, open (B) to 4th string, 2nd fret (E)	Low B, open (B) to 2nd string, 2nd fret (E)

Octave Level
This adjusts the volume of the sound one octave below.

Direct Level
Adjusts the volume of the direct sound.

PB (Pedal Bend)

This lets you use the pedal to get a pitch bend effect.
The expression pedal automatically switches to the pedal bend function when PB is selected.

☞ "Setting the External Expression Pedal Functions (Expression Pedal Function)" (p. 58).

Parameter	Value
Pitch Min	-24–+24
Pitch Max	-24–+24
Pdl Position	0–100
Effect Level	0–100
Direct Level	0–100

Pitch Min
This sets the pitch at the point where the expression pedal is fully lifted.

Pitch Max
This sets the pitch at the point where the expression pedal is all the way down.

Pdl Position (Pedal Position)
This adjusts the pedal position for pedal bend.

Effect Level
This adjusts the volume of the pitch bend sound.

Direct Level
Adjusts the volume of the direct sound.

2CE (2x2 Chorus)

Two separate stereo chorus units are used for the low-frequency and high-frequency ranges in order to create a more natural chorus sound.

Parameter	Value
Xover f	100 Hz–4.00 kHz
Lo Rate	0–100, BPM 𝅗𝅥 –BPM ♪
Lo Depth	0–100
Lo PreDly	0.0 msec–40.0 msec
Lo Level	0–100
Hi Rate	0–100, BPM 𝅗𝅥 –BPM ♪
Hi Depth	0–100
Hi PreDly	0.0 msec–40.0 msec
Hi Level	0–100

Xover f (Crossover Frequency)
This parameter sets the frequency at which the frequency components of the direct sound are divided into bass and treble bands.

Lo Rate (Low Rate)
Adjust the speed of the chorus effect for the low frequency range.

* *When set to BPM, the value of each parameter will be set according to the value of the Master BPM (p. 54) specified for each patch. This makes it easier to achieve effect sound settings that match the tempo of the song (synchronizing the cycle to one-half or one-fourth of the BPM when the set cycle rate is increased).*
When setting to BPM, press PARAMETER [►] to display the Master BPM settings screen.

Lo Depth (Low Depth)
Adjust the depth of the chorus effect for the low frequency range. If you wish to use this as a doubling effect, use a setting of "0."

Lo PreDly (Low Pre Delay)
Adjust the time from when the low frequency range direct sound is output until the effect sound is output. Extending the pre-delay will produce the sensation of multiple sounds (doubling effect).

Lo Level (Low Level)
Adjust the volume of the low frequency range.

Hi Rate (High Rate)
Adjust the speed of the chorus effect for the high frequency range.

* *When set to BPM, the value of each parameter will be set according to the value of the Master BPM (p. 54) specified for each patch. This makes it easier to achieve effect sound settings that match the tempo of the song (synchronizing the cycle to one-half or one-fourth of the BPM when the set cycle rate is increased).*
When setting to BPM, press PARAMETER [►] to display the Master BPM settings screen.

Hi Depth (High Depth)
Adjust the depth of the chorus effect for the high frequency range. If you wish to use this as a doubling effect, use a setting of "0."

Hi PreDly (High Pre Delay)
Adjust the time from when the high frequency range direct sound is output until the effect sound is output. Extending the pre-delay will produce the sensation of multiple sounds (doubling effect).

Hi Level (High Level)
Adjust the volume of the high frequency range.

PAN
With the volume level of the left and right sides alternately changing, when playing sound in stereo, you can get an effect that makes the guitar sound appear to fly back and forth between the speakers.

Parameter	Value
Wave Shape	0–100
Rate	0–100, BPM 𝅗𝅥 –BPM ♪
Depth	0–100

Wave Shape
This adjusts changes in volume level.

Rate
Adjusts the frequency (speed) of the change.

* *When set to BPM, the value of each parameter will be set according to the value of the Master BPM (p. 54) specified for each patch. This makes it easier to achieve effect sound settings that match the tempo of the song (synchronizing the cycle to one-half or one-fourth of the BPM when the set cycle rate is increased).*
When setting to BPM, press PARAMETER [►] to display the Master BPM settings screen.

Depth
Adjusts the depth of the effect.

VB (Vibrato)
This effect creates vibrato by slightly modulating the pitch.

Parameter	Value
Rate	0–100, BPM 𝅗𝅥 –BPM ♪
Depth	0–100
Trigger	Off, On
Rise Time	0–100

Rate
This adjusts the rate of the vibrato.

* *When set to BPM, the value of each parameter will be set according to the value of the Master BPM (p. 54) specified for each patch. This makes it easier to achieve effect sound settings that match the tempo of the song (synchronizing the cycle to one-half or one-fourth of the BPM when the set cycle rate is increased).*
When setting to BPM, press PARAMETER [►] to display the Master BPM settings screen.

Depth
This adjusts the depth of the vibrato.

Trigger
This selects on/off of the vibrato.

* *It is assumed that this parameter will be assigned (p. 60) to the foot switch.*

Rise Time
This sets the time passing from the moment the trigger is turned on until the set vibrato is obtained.

UV (Uni-V)

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

Parameter	Value
Rate	0–100, BPM 𝅗𝅥 –BPM ♪
Depth	0–100
Level	0–100

Rate
Adjusts the rate of the Uni-V effect.

* *When set to BPM, the value of each parameter will be set according to the value of the Master BPM (p. 54) specified for each patch. This makes it easier to achieve effect sound settings that match the tempo of the song (synchronizing the cycle to one-half or one-fourth of the BPM when the set cycle rate is increased).*
When setting to BPM, press PARAMETER [►] to display the Master BPM settings screen.

Depth
Adjusts the depth of the Uni-V effect.

Level
Adjusts the volume.

RT (Rotary)

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

Parameter	Value
Speed Sel	Slow, Fast
Rate (Slow)	0–100, BPM 𝅗𝅥 –BPM ♪
Rate (Fast)	0–100, BPM 𝅗𝅥 –BPM ♪
Rise Time	0–100
Fall Time	0–100
Depth	0–100

Speed Sel (Speed Select)
This parameter changes the simulated speaker's rotating speed (Slow or Fast).

Rate (Slow)
This parameter adjusts the speed of rotation when set to "Slow."

Rate (Fast)
This parameter adjusts the speed of rotation when set to "Fast."

* *When the Rate (Slow) or Rate (Fast) set to BPM, the value of each parameter will be set according to the value of the Master BPM (p. 54) specified for each patch. This makes it easier to achieve effect sound settings that match the tempo of the song (synchronizing the cycle to one-half or one-fourth of the BPM when the set cycle rate is increased).*
When setting to BPM, press PARAMETER [►] to display the Master BPM settings screen.

Rise Time
This parameter adjusts the time it takes for the rotation speed to change when switched from "Slow" to "Fast."

Fall Time
This parameter adjusts the time it takes for the rotation speed to change when switched from "Fast" to "Slow."

Depth
This parameter adjusts the amount of depth in the rotary effect.

SDD (Short Delay)

This is a delay with the maximum delay time of 400 ms. This effect is useful for making the sound fatter.

Parameter	Value
DlyTime	0 ms–400 ms, BPM ♪ –BPM ♩
Feedback	0–100
Effect Level	0–120

DlyTime (Delay Time)

Adjusts the delay time.

* *When set to BPM, the value of each parameter will be set according to the value of the Master BPM (p. 54) specified for each patch. This makes it easier to achieve effect sound settings that match the tempo of the song (synchronizing the time to twice or four times the time length of the BPM when the set time is increased).*
When setting to BPM, press PARAMETER [►] to display the Master BPM settings screen.

Feedback

Feedback refers to returning the delayed signal back into the input of the delay. This parameter adjusts the volume that is returned to the input. Higher settings will result in more delay repeats.

Effect Level

Adjusts the volume of delay sound.

HU (Humanizer)

This can create human vowel-like sounds.

Parameter	Value	
Mode	Picking, Auto, Random	
Vowel 1	a, e, i, o, u	Mode= Picking, Auto
Vowel 2	a, e, i, o, u	Mode= Picking, Auto
Sens	0–100	Mode= Picking
Rate	0–100, BPM 𝅗𝅥 –BPM ♪	
Depth	0–100	
Manual	0–100	Mode= Auto
Level	0–100	

Mode

This sets the mode that switches the vowels.

Picking:

It changes from vowel 1 to vowel 2 along with the picking. The time spent for the change is adjusted with the rate.

Auto:

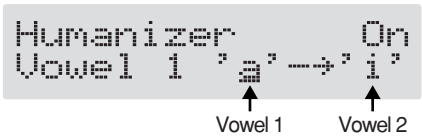
By adjusting the rate and depth, two vowels (Vowel 1 and Vowel 2) can be switched automatically.

Random:

Five vowels (a, e, i, o, u) are called out at random by adjusting the rate and depth.

Vowel 1

This selects the first vowel.



Vowel 2

This selects the second vowel.

Sens (Sensitivity)

This adjusts the sensitivity of the humanizer. When it is set to a lower value, no effect of the humanizer is obtained with weaker picking, while stronger picking produces the effect. When it is set to a higher value, the effect of the humanizer can be obtained whether the picking is weak or strong.

Rate

This adjusts the cycle for changing the two vowels.

* *When set to BPM, the value of each parameter will be set according to the value of the Master BPM (p. 54) specified for each patch. This makes it easier to achieve effect sound settings that match the tempo of the song (synchronizing the cycle to one-half or one-fourth of the BPM when the set cycle rate is increased).*
When setting to BPM, press PARAMETER [►] to display the Master BPM settings screen.

Depth

This adjusts the depth of the effect.

Manual

This determines the point where the two vowels are switched. When it is set to "50," vowel 1 and vowel 2 are switched in the same length of time. When it is set to lower than "50," the time for vowel 1 is shorter. When it is set to higher than "50," the time for vowel 1 is longer.

Level

Adjusts the volume.

SL (Slicer)

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

Parameter	Value
Pattern	P1–P20
Rate	0–100, BPM 𝅗𝅥 –BPM ♪
Trigger Sens	0–100

Pattern

Select the slice pattern that will be used to cut the sound.

Rate

Adjust the rate at which the sound will be cut.

* *When set to BPM, the value of each parameter will be set according to the value of the Master BPM (p. 54) specified for each patch. This makes it easier to achieve effect sound settings that match the tempo of the song (synchronizing the cycle to one-half or one-fourth of the BPM when the set cycle rate is increased).*
When setting to BPM, press PARAMETER [►] to display the Master BPM settings screen.

Trigger Sens (Trigger Sensitivity)

Adjust the sensitivity of triggering. With low settings of this parameter, softly picked notes will not retrigger the phrase (i.e., the phrase will continue playing), but strongly picked notes will retrigger the phrase so that it will playback from the beginning. With high settings of this parameter, the phrase will be retriggered even by softly picked notes.

AR (Auto Riff)

This allows you to automatically produce a phrase simply by picking a single note. This can be used to easily play extremely rapid phrases.

* *Reception of large amounts of MIDI data while Auto Riff is playing may result in disturbances in the sound.*

Parameter	Value
Phrase	Preset1–Preset30, User1–User10
Loop	Off, On
Tempo	0–100, BPM 𝅗𝅥 –BPM ♪
Sens	0–100
Key	C (Am)–B (G#m) Phrase = Preset
Attack	0–100
Hold	Off, On
Effect Level	0–100
Direct Level	0–100
(User Phrase)	
User	1–10
IN	C–B
STEP	1–16
OUT	C–B (±2 octave), -, end

Phrase

Select the phrase. User-programmed phrases are used when User 1–10 is selected.

Loop

If "Loop" is turned "On," the phrase will be played back continuously.

Tempo

Adjust the speed of the phrase.

* *When set to BPM, the value of each parameter will be set according to the value of the Master BPM (p. 54) specified for each patch. This makes it easier to achieve effect sound settings that match the tempo of the song (synchronizing the cycle to one-half or one-fourth of the BPM when the set cycle rate is increased). When setting to BPM, press PARAMETER [►] to display the Master BPM settings screen.*

Sens (Sensitivity)

Adjust the sensitivity of triggering. With low settings of this parameter, softly picked notes will not retrigger the phrase (i.e., the phrase will continue playing), but strongly picked notes will retrigger the phrase so that it will playback from the beginning. With high settings of this parameter, the phrase will be retriggered even by softly picked notes.
No retriggering occurs when the value is set to "0."

Key
Select the key of the song that you wish to play.

Attack
Adjust the strength of the attack. By adding an attack to each note of the phrase you can produce a sensation as though the notes were being picked.

Hold
If you turn hold "On" after you pick a note, the effect sound will continue even after there is no input signal.

Effect Level
Adjust the volume of the phrase.

Direct Level
Adjust the volume of the direct sound.

Creating Original Phrases (User Phrase)
In addition to the 30 different prepared phrases, you can also create up to ten of your own original phrases (User phrases).

1. **Press [FX-2], then press PARAMETER [◄] [►] so that "FX Select" is displayed.**
2. **Rotate the PATCH/VALUE dial to select "AR."**
3. **Press [FX-2] a number of times to select "Phrase," then rotate the PATCH/VALUE dial to select "User 1–10."**
4. **Press PARAMETER [►] a number of times until you have the User Phrase settings screen displayed.**

5. **Press PARAMETER [◄] [►] to move the cursor, then rotate the PATCH/VALUE dial to set the User phrase.**

   User:
   specify the user phrase number.

   IN:
   Sets the note name of the input sound. You can also play individual notes on the guitar and let the GS-10 judge the note name.

   STEP:
   Sets the step of the phrase.
   You can also play on the guitar and put the step forward.

   OUT:
   Specify the note name of the output sound.
   The triangle next to the note name indicates the octave.
   One downward-pointing triangle indicates a note one octave below the note displayed; two triangles indicates a two-octave drop.
   One upward-pointing triangle indicates a note one octave above the note displayed; two triangles indicates a two-octave rise.

SYN (Guitar Synth)

This detects the pitch of an electric guitar and outputs a synthesizer sound.

* *When you use a guitar synthesizer, observe the following points.*

- It does not work properly when a chord is played. Be sure to mute all the other strings and play in a single note.
- When you are to play the next string while a certain sound is still playing, perfectly mute the previous sound then play the next one with a clear attack.
- If the unit cannot detect the attack, it may not sound correctly.

Parameter	Value	
Sens	0–100	
Wave	Square, Saw, Brass, Bow	
Chromatic	Off, On	Wave= Square, Saw
Octave Shift	0, -1, -2	Wave= Square, Saw
PWM Rate	0–100	Wave= Square
PWM Depth	0–100	Wave= Square
Cutoff Freq	0–100	
Resonance	0–100	
FLT.Sens	0–100	
FLT.Decay	0–100	
FLT.Depth	-100 –100	
Attack	Decay, 0–100	
Release	0–100	
Velocity	0–100	
Hold	Off, On	Wave= Square, Saw
Synth Level	0–100	
Direct Level	0–100	

Sens (Sensitivity)
This adjusts the input sensitivity. The response of the internal sound source is better with a higher sensitivity value, but the malfunctions will be increased on the other hand. So, try to set it as high as possible without causing malfunction.

Wave

This selects a wave type that is the source of the guitar synthesizer.

Square:

The unit detects the pitch and attack information from the input guitar sound, then send the square waveform (⊓⊔⊓⊔) from the internal sound generator.

Saw:

The unit detects the pitch and attack information from the input guitar sound, then send the saw waveform (⟋⟋) from the internal sound generator.

Brass:

The unit directly processes the input guitar sound and creates a guitar synthesizer sound. It gives a quick sound rise and send the sound with a sharp edge.

Bow:

The unit directly processes the input guitar sound and creates a guitar synthesizer sound. It outputs a soft sound without attack.

Chromatic

This switches on or off the chromatic function. When it is on, the pitch change of the synthesizer sound is in semitone steps. This does not respond to pitch changes less than a semitone, such as what might be obtained with bending or vibrato. Thus, this is effectively used for realistically playing musical instruments whose pitch will change in steps greater than a semitone, such as a keyboard.

* *Use this parameter when "Square" or "Saw" is selected for wave.*

Octave Shift

This allows you to shift the pitch of the internal sound module in an octave step from the guitar sound.

* *This parameter should be set when "Square" or "Saw" is selected for the wave.*

PWM Rate (Pulse Wise Modulation Rate)

This gives breadth or fatness to the sound by applying modulation to the waveform (only to Square) in the internal sound module. A higher value will quicken the rate of the modulation.

* *This parameter should be set only when "Square" is selected for the wave.*

PWM Depth (Pulse Wise Modulation Depth)

This adjusts the depth of the PWM. When it is set to "0," no PWM effect is obtained.

* *This parameter should be set only when "Square" is selected for the wave.*

Cutoff Freq (Cutoff Frequency)

This adjusts the frequency where the harmonics contents of the sound are cut off.

Resonance

This adjusts how much of the harmonics contents around the cutoff frequency should be emphasized.

FLT.Sens (Filter Sensitivity)

This adjusts the sensitivity of the filter. When it is set to a lower value, the filter is affected only with stronger picking. When it is set higher, the filter changes even with weaker picking. When it is set to "0," the depth of the filter will be the same no matter how the picking strength may be.

FLT.Decay (Filter Decay)

This sets the time needed for the filter to finish its sweep.

FLT.Depth (Filter Depth)

This adjusts the depth of the filter. When the value is higher, the filter will change more drastically. The polarity of the filter will be opposite with "+" and "-."

Attack

This adjusts the time needed for a synthesizer sound to reach its maximum. When it is set to a lower value, the sound will rise quickly. When it is set higher, the sound will rise slowly. When it is set to "Decay," the sound will rise quickly and turn to a Release status regardless of the input of the guitar sound.

* *When "Brass" or "Bow" is selected for the wave, the attack time will not be quicker from a certain level even if the attack is set to "Decay" or "0."*

Release

This determines the time needed for the synthesizer sound to reach zero from the moment the input of the guitar sound is completed.

* *When "Brass" or "Bow" is selected for the wave, the guitar signal itself is processed. That is, the synthesizer sound will go down when the guitar signal goes down no matter how long the release may be set.*

Velocity
This adjusts the amount of the volume change of the synthesizer sound. When it is set to high, the volume change will be greater depending on the picking strength. When it is set to "0," no volume change is caused even by changing the picking manner.

Hold
The hold function can sustain the output of the synthesizer sound. If you turn on the hold while a synthesizer sound is being output, the synthesizer sound will be held until you turn it off.

* *It is assumed that this parameter will be assigned (p. 60) to the foot switch.*
* *This parameter is used when "Square" or "Saw" is selected for the wave.*

Synth Level
Adjusts the volume of the synthesizer sound.

Direct Level
Adjusts the volume of the direct sound.

BS (Bass Simulator)

Simulates the sound of a bass guitar. Obtain the sound of a bass guitar while playing an electric guitar.

* *You should avoid playing chords when using the Bass Simulator.*

Parameter	Value
Character	Loose, Tight
Level	0–100

Character
Bass tone characteristic is set. When "Loose" is selected, the sound becomes as if the string gauge was getting thicker.

Level
This adjusts the volume of the bass simulator.

SEQ (Stereo Equalizer)

This adjusts the tone as a stereo equalizer. A parametric type is adopted for the high-middle and low-middle range.

Parameter	Value
Low EQ	-20 dB–+20 dB
Lo-Mid f	20.0 Hz–10.0 kHz
Lo-Mid Q	0.5–16
Lo-Mid EQ	-20 dB–+20 dB
Hi-Mid f	20.0 Hz–10.0 kHz
Hi-Mid Q	0.5–16
Hi-Mid EQ	-20 dB–+20 dB
Hi EQ	-20 dB–+20 dB
Level	-20 dB–+20 dB

Low EQ (Low Equalizer)
Adjusts the low frequency range tone.

Lo-Mid f (Low-Middle Frequency)
Specify the center of the frequency range that will be adjusted by the "Lo-Mid EQ."

Lo-Mid Q (Low-Middle Q)
Adjusts the width of the area affected by the EQ centered at the "Lo-Mid f." Higher values will narrow the area.

Lo-Mid EQ (Low-Middle Equalizer)
Adjusts the "Lo-Mid f" range tone.

Hi-Mid f (High-Middle Frequency)
Specify the center of the frequency range that will be adjusted by the "Hi-Mid EQ."

Hi-Mid Q (High-Middle Q)
Adjusts the width of the area affected by the EQ centered at the "Hi-Mid f." Higher values will narrow the area.

Hi-Mid EQ (High-Middle Equalizer)
Adjusts the "Hi-Mid f" range tone.

High EQ (High Equalizer)
Adjusts the high frequency range tone.

Level
Adjusts the volume after the equalizer.

NAME/NS/MASTER

You can select the following items in NAME/NS/MASTER.

- **Name (Patch Name)**
- **Noise Suppressor**
- **Master**
- **Foot Volume**
- **Effect Chain**

* *With each press of [NAME/NS/MASTER], you move to the next item that can be set, in this order:*
Name → Noise Suppressor → Master → Foot Volume → Effect Chain.

Name (Patch Name)

Each patch can be given a name (Patch Name) consisting of up to sixteen characters. You'll probably want to take advantage of this feature by assigning names that suggest the sound you'll obtain, or the song in which it'll be used.

1. **Press [NAME/NS/MASTER] so that the Name edit screen appears in the display.**

2. **Press PARAMETER [◄] [►] to move the cursor to the text area you want to edit.**
3. **Rotate the PATCH/VALUE dial to change the characters.**

* *You can use the following functions when changing text characters.*

CAPS: Switches the character at the cursor position between upper and lower case.

INS: Inserts a blank space at the cursor position.

DEL: Deletes the character at the cursor position and shifts the characters following it to the left.

4. **If you want to edit names further, repeat Steps 2 and 3.**
5. **If you want to save the sequence you've set up, use the Write procedure (p. 25) to save it to a User patch.**
   Press [EXIT] to return to the Play screen.

Noise Suppressor

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

* *Please connect the noise suppressor in the signal path prior to the reverberation type effect. This setup will prevent an natural break of the reverberation type effect.*

Parameter	Value
On/Off	Off, On
Threshold	0–100
Release	0–100

On/Off (Effect On/Off)

Turns the noise suppressor effect on/off.

This parameter can be set with the PATCH/VALUE dial.

* *Even if [NAME/NS/MASTER] is pressed, you cannot switch the noise suppressor on and off.*

Threshold

Adjust this parameter as appropriate for the volume of the noise. If the noise level is high, a higher setting is appropriate. If the noise level is low, a lower setting is appropriate. Adjust this value until the decay of the guitar sound is as natural as possible.

* *High settings for the threshold parameter may result in there being no sound when you play with your guitar volume turned down.*

Release

Adjusts the time from when the noise suppressor begins to function until the noise level reaches "0."

Master

Parameter	Value
Patch Level	0–200
Master BPM	40–250

Patch Level

This adjusts the output volume of the GS-10.

Master BPM

Adjust the BPM value for each patch.

* *BPM (beats per minute) indicates the number of quarter note beats that occur each minute.*

* *When you have an external MIDI device connected, the Master BPM synchronizes to the external MIDI device's tempo, making it impossible to set the Master BPM. To enable setting of the Master BPM, set "MIDI Sync Clock" (p. 69) to Internal.*

Control with the Master BPM

To input the Master BPM with the foot switch, set "Assign" as follows.

Quick Setting (p. 60)

P11: MSTR BPM TAP

Manual Settings (p. 61)

Set ASSIGN to ON and set the following as shown.

Target:	Master BPM (Tap)
Target Min:	Off
Target Max:	On
Source:	CTL 1 (or CTL 2)
Source Mode:	Normal
Act.Range Lo:	0
Act.Range Hi:	127

* *When controlling the Assigns with the foot switch, the system parameter CTL 1 Func (or CTL 2 Func) must be set to "Assign 1-8" (p. 58, p. 59).*

Foot Volume

This is a volume control effect.

Usually, this is controlled to the expression pedal.

Parameter	Value
Level	0–100

Level

Adjusts the volume.

Effect Chain

Here's how you can change the order in which the effects are connected.

1. Press [NAME/NS/MASTER] until "Effect Chain" appears in the display.

* *With each press of [NAME/NS/MASTER], you move to the next item that can be set, in this order:*
Name → Noise Suppressor → Master → Foot Volume → Effect Chain.

* *Effects are shown in lowercase letters when turned off.*

2. Use the PATCH/VALUE dial or PARAMETER [◄] [►] to move the cursor to the point where you want to have an effect inserted.

3. Press the On/Off button for the effect you want to insert.

The selected effect is inserted at the cursor position.

* *Use [ASSIGN] to assign Foot Volume.*

4. If you want to change the sequence further, repeat Steps 2 and 3.

5. If you want to save the sequence you've set up, use the Write procedure (p. 25) to save it to a User patch.

Press [EXIT] to return to the Play screen.

MEMO

Effects can be switched on and off even while making the settings for the connection order. With effects appearing to the left and right of the cursor, the ON/OFF button corresponding to the effect can be pressed to turn them on/off.

Chapter 5 Creating Original Effects Types (Customize)

With the GS-10's Customize function, you can rely on your own sensibilities and create a totally new effect by tweaking the settings for the "Preamp/Speaker Simulator," "Overdrive/Distortion," and "Pedal Wah." The result can then be saved on the GS-10 as "Custom" settings.

You can also use these custom settings in other patches.

Customizing the COSM Amps

You can make three different sets of settings, Custom 1, Custom 2, and Custom 3.

* *The sound of any patch that uses Custom 1, 2, or 3 will be altered if the custom settings are edited.*

1. **Press the PREAMP/SPEAKER On/Off switch to display the PREAMP/SPEAKER effect screen.**
2. **Press PARAMETER [◄] [►] to call up the Type parameter.**
3. **Rotate the PATCH/VALUE dial to call up "Custom 1," "Custom 2," or "Custom 3."**

4. **Press PARAMETER [◄] [►] to show the custom parameters.**

5. **Rotate the PATCH/VALUE dial to change the setting's value.**
6. **Repeat Steps 4 and 5 as needed.**
7. **Press [EXIT] to return to the Play screen.**

Parameter	Value
Type	JC Clean, TW Clean, Crunch, VO Lead, BG Lead, MS1959 Stk, Modern Stk
Bottom	-50–+50
Edge	-50–+50
Bass Freq	-50–+50
Treble Freq	-50–+50
Preamp Low	-50–+50
Preamp High	-50–+50

Type

Selects the basic type of preamp.

JC Clean	This is the sound of the Roland JC-120.
TW Clean	This models a Fender Twin Reverb.
Crunch	This is a crunch sound that can produce natural distortion.
VO Lead	This models the drive sound of a VOX AC-30TB.
BG Lead	This models the lead sound of the MESA/Boogie combo amp.
MS1959 Stk	This models the sound input to Input I on a Marshall 1959.
Modern Stk	This models the rhythm channel of a MESA/Boogie Dual Rectifier.

Bottom

Adjusts the amount of distortion in the low frequencies.

Edge

Adjusts the amount of distortion in the high frequencies.

Bass Freq (Bass Frequency)

Adjusts the frequency affected by the BASS knob.

Treble Freq (Treble Frequency)

Adjusts the frequency affected by the TREBLE knob.

Preamp Low

Adjusts the preamp section's low-frequency tone.

Preamp High

Adjusts the preamp section's high-frequency tone.

Customizing the Speakers

You can make three different sets of settings, Custom 1 and Custom 2.

* *The sound of any patch that uses Custom 1 or 2 will be altered if the custom settings are edited.*

1. **Press the PREAMP/SPEAKER On/Off switch to display the PREAMP/SPEAKER effect screen.**
2. **Press PARAMETER [◄] [►] to call up the SP Type parameter.**
3. **Rotate the PATCH/VALUE dial to call up "Custom 1" or "Custom 2."**

4. **Press PARAMETER [◄] [►] to show the custom parameters.**

5. **Rotate the PATCH/VALUE dial to change the setting's value.**
6. **Repeat Steps 4 and 5 as needed.**
7. **Press [EXIT] to return to the Play screen.**

Parameter	Value
Speaker Size	5"–15"
Color Low	-10–+10
Color High	-10–+10
Speaker Num	x1, x2, x4, x8
Cabinet	Open, Close

Speaker Size

Selects the size of speaker.

Color Low

Adjusts the speaker section's low-frequency tone.

Color High

Adjusts the speaker section's high-frequency tone.

Speaker Num (Speaker Number)

Sets the number of speakers.

Cabinet

Selects the speaker cabinet type.

Open:

This is an open-backed cabinet.

Close:

This type of cabinet features an enclosed rear panel.

Customizing Overdrive and Distortion

You can make three different sets of settings, Custom 1, Custom 2, and Custom 3.

* *The sound of any patch that uses Custom 1, 2, or 3 will be altered if the custom settings are edited.*

1. **Press the OD/DS On/Off switch to display the OD/DS effect screen.**
2. **Press PARAMETER [◄] [►] to call up the Type parameter.**
3. **Rotate the PATCH/VALUE dial to call up "Custom 1," "Custom 2," or "Custom 3."**

4. **Press PARAMETER [◄] [►] to show the custom parameters.**

5. **Rotate the PATCH/VALUE dial to change the setting's value.**
6. **Repeat Steps 4 and 5 as needed.**
7. **Press [EXIT] to return to the Play screen.**

Parameter	Value
Type	OD-1, OD-2, CRUNCH, DS-1, DS-2, METAL-1, METAL-2, FUZZ
Bottom	-50–+50
Top	-50–+50
Low	-50–+50
High	-50–+50

Type
Selects the basic type of overdrive/distortion.

OD-1	This is the sound of the BOSS OD-1.
OD-2	This is the sound of the BOSS OD-2.
CRUNCH	This is a crunch sound of the BOSS BD-2.
DS-1	This gives a basic, traditional distortion sound.
DS-2	This creates a heavier distortion sound.
METAL-1	This is the sound of the BOSS MT-2.
METAL-2	This gives a heavy metal sound.
FUZZ	This models a FUZZFACE.

Bottom
Adjusts the amount of distortion in the low frequencies.

Top
Adjusts the amount of distortion in the high frequencies.

Low
Adjusts low-frequency tone.

High
Adjusts the high-frequency tone.

Customizing Pedal Wah

You can make three different sets of settings, Custom 1, Custom 2, and Custom 3.

* *The sound of any patch that uses Custom 1, 2, or 3 will be altered if the custom settings are edited.*

1. **Press the FX-1 On/Off switch to display the FX-1 effect screen.**
2. **Press PARAMETER [◄] [►] to call up the "FX Select" parameter, then select "PW" with the PATCH/VALUE dial.**
3. **Press PARAMETER [◄] [►] to call up the "Type" parameter.**
4. **Rotate the PATCH/VALUE dial to call up "Custom 1," "Custom 2," or "Custom 3."**

5. **Press PARAMETER [◄] [►] to show the custom parameters.**

6. **Rotate the PATCH/VALUE dial to change the setting's value.**
7. **Repeat Steps 4 and 5 as needed.**
8. **Press [EXIT] to return to the Play screen.**

Parameter	value
Type	CRY WAH, VO WAH, Fat WAH, Light WAH, 7String WAH
Q	-50–+50
Range Low	-50–+50
Range High	-50–+50
Presence	-50–+50

Type
Selects the basic type of wah.

CRY WAH	This models the sound of the CRY BABY wah pedal popular in the `70s.
VO WAH	This models the sound of the VOX V846.
Fat WAH	This a wah sound featuring a bold tone.
Light WAH	This wah has a refined smooth sound.
7String WAH	Wah featuring a broader range of variations for the seven-string guitar.

Q
Adjusts the amount of characteristic effect applied to the wah tone.

Range Low
Selects the tone produced when the pedal is back.

Range High
Selects the tone produced when the pedal is forward.

Presence
Adjusts the tonal quality of the wah effect.

Chapter 6 Setting the External Pedal Functions

This section describes the settings required to use an expression pedal or foot switch connected to the EXP PEDAL/CTL1,2 jack on the rear panel.

If you want the external pedal to have the same function at all times

In situations such as when you want to use the expression pedal only as a volume pedal, you can set the external pedal function as a global setting common to the GS-10 overall.

☞
"Expression Pedal Function" (refer to right)
"Control 1, 2 Function" (p. 59)

If you want the external pedal function to change with the patch

If you want the external pedal to function differently depending on the patch, perhaps using the expression pedal to change the volume in one patch, but using it to adjust the amount of overdrive distortion in another patch, then use the "Assign" settings.

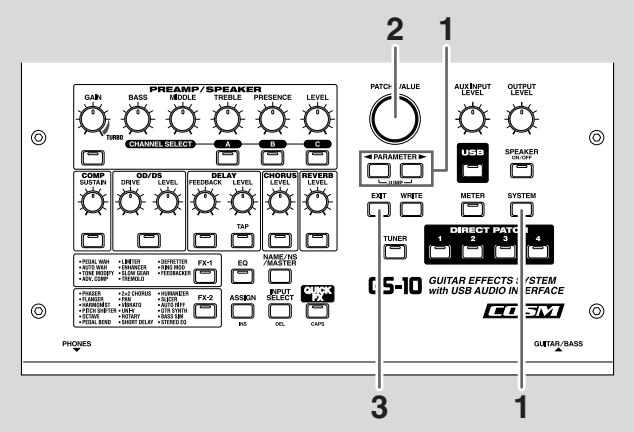
In each patch you can set up to eight different types (Assign numbers) determining which parameter is to be controlled by a particular controller.

In addition, you can use the "Assign" function to set controllers using Control Change messages from external MIDI devices.

☞
"Assign" (p. 60)

When using an expression pedal or foot switch with the "Assign" settings, set the Expression pedal Function or Control 1 or 2 Function setting to "Assign 1-8."

Setting the External Expression Pedal Functions (Expression Pedal Function)



1. Press [SYSTEM], then press PARAMETER [◄] [►] so that "EXP PDL Func" is displayed.

2. Rotate the PATCH/VALUE dial to set the expression pedal function.

Auto:

Normally used as a "foot volume" pedal. When Pedal Wah (p. 36) or Pedal Bend (p. 45) is switched on, the expression pedal automatically switches to the "pedal wah" or "pedal bend" function.

When Pedal Wah and Pedal Bend are switched off, the pedal automatically operates as a "foot volume" pedal.

Assign 1-8:

Used as the controller set in the Assign (p. 60) for each patch.

Foot Volume:

Used as a "foot volume" pedal.

Patch Level:

Used as a patch level controller.

Pedal Wah:

Used as a "pedal wah" when Pedal Wah is on.

Pedal Bend:

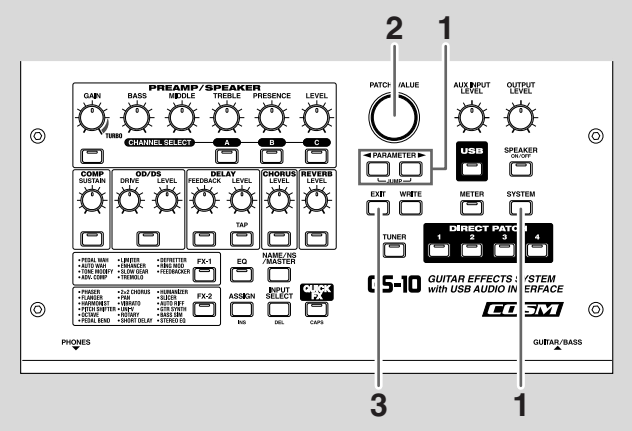
Used as a "pedal bend" when Pedal Bend is on.

3. Press [EXIT] to return to the Play screen.

Setting the External Foot Switch Functions (Control 1, 2 Function)

* *When connecting two foot switches using the special optional Roland PCS-31 connector cord, the foot switch connected with the white-banded plug functions according to the Control 1 function settings, and the foot switch connected with the red-banded plug functions according to the Control 2 function settings.*

* *When you have only one foot switch connected, the Control 1 function settings are used.*



1. Press [SYSTEM], then press PARAMETER [◄] [►] so that "CTL 1 Func" or "CTL 2 Func" is displayed.

2. Rotate the PATCH/VALUE dial to set the foot switch function.

Assign 1-8:

The controller set in each patch's Assign (p. 60) is used.

Tuner On/Off:

The foot switch is used as a tuner On/Off switch.

Use a momentary-type foot switch (such as the optional FS-5U).

Remote Strt/Stop:

Used as a foot switch for use in starting and stopping a computer or a recorder, sequencer, or other MIDI-connected device.

For more on the settings for the device being run, refer to "Controlling Recorders and Sequencers Remotely from the GS-10 (Remote Control)" (p. 75).

Direct Patch Up:

The direct patch (p. 18) number increases by 1 each time the foot switch is pressed.

Direct Patch Down:

The direct patch (p. 18) number decreases by 1 each time the foot switch is pressed.

Patch Up:

The patch (p. 18) number increases by 1 each time the foot switch is pressed.

Patch Down:

The patch (p. 18) number decreases by 1 each time the foot switch is pressed.

Patch Level Inc1:

The patch level (p. 54) value increases by 10 each time the foot switch is pressed.

Patch Level Inc2:

The patch level (p. 54) value increases by 20 each time the foot switch is pressed.

Patch Level Dec1:

The patch level (p. 54) value decreases by 10 each time the foot switch is pressed.

Patch Level Dec2:

The patch level (p. 54) value decreases by 20 each time the foot switch is pressed.

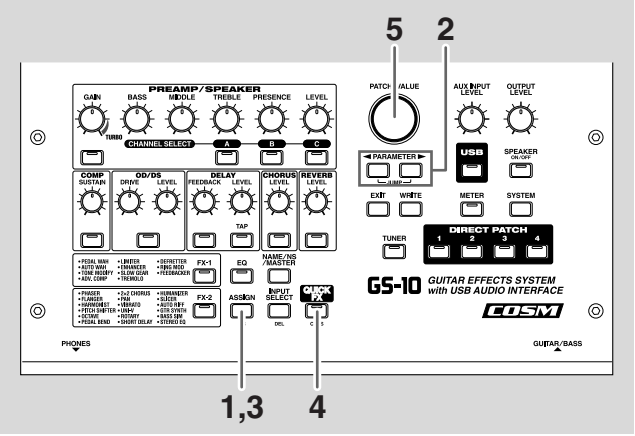
3. Press [EXIT] to return to the Play screen.

Setting the External Pedal Function for Individual Patches (Assign)

There are two ways to set the assignments, "Quick Settings," which allows you to use [QUICK FX] to complete the settings quickly and easily, and "Manual Settings," where each parameter is set one at a time.

Quick Settings

When you use [QUICK FX] to select prepared settings (Preset settings), the relevant parameters are then instantly set to their optimal values. This lets you finish making the settings simply, instead of setting each individual parameter separately.



1. **Press [ASSIGN].**
2. **Press PARAMETER [◄] [►] to select one of the Assigns from Assign 1–8.**
3. **Press [ASSIGN] to set the selected Assign to "On."**
   Each time [ASSIGN] is pressed it alternately switches this on and off. "ASSIGN" flashes in the display when the Assign is switched off.

   * *Always set any Assign to "Off" when it is not being used.*
4. **Press [QUICK FX].**
   The Preset settings selection screen appears in the display.

* *The following appears when the Quick Settings are changed through editing of parameters immediately after the patches are changed.*

5. **Turn the PATCH/VALUE dial to select the Preset settings.**
6. **To use the Quick Settings with other Assigns, repeat Steps 2–5.**
   Even when using this procedure, the settings selected in Step 5 are maintained as is and carried over to the Quick Settings for the next effect.
7. **To save the settings, use the Write procedure (p. 25).**
   Press [EXIT] to return to the Play screen.

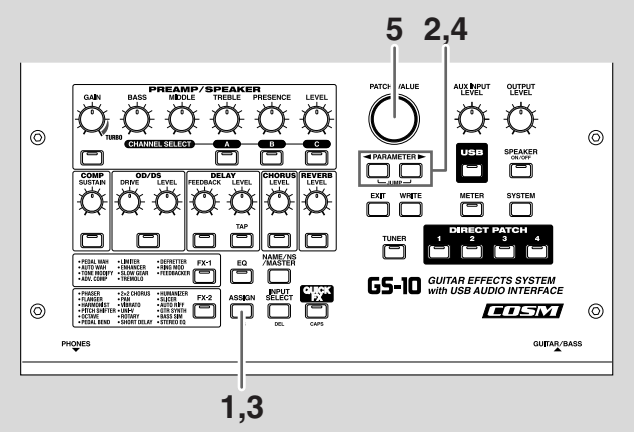
Preset Settings

P01	**PEDAL WAH**	The expression pedal functions as a wah pedal.
P02	**PEDAL BEND**	The expression pedal is used for pedal bend.
P03	**FOOT VOLUME**	The expression pedal functions as a volume pedal.
P04	**COMP ON/OFF**	The compressor is switched on and off with the foot switch.
P05	**OD/DS ON/OFF**	The overdrive/distortion is switched on and off with the foot switch.
P06	**DELAY ON/OFF**	The delay is switched on and off with the foot switch.
P07	**CHRUS ON/OFF**	The chorus is switched on and off with the foot switch.
P08	**FX-1 ON/OFF**	FX-1 is switched on and off with the foot switch.
P09	**FX-2 ON/OFF**	FX-2 is switched on and off with the foot switch.
P10	**DLY TIME TAP**	The foot switch is used for tap input of the delay time.
P11	**MSTR BPM TAP**	The foot switch is used for tap input of the Master BPM.
P12	**CH SEL INC**	The foot switch is used for switching the preamp/speaker channel select (A → B → C → A → ...).

* *The foot switch function is enabled for the foot switch connected to CTL 1.*

Manual Settings

Here, you can individually determine which controller is to control which parameter.



1. **Press [ASSIGN].**
2. **Press PARAMETER [◄] [►] to select one of the Assigns from Assign 1–8.**
3. **Press [ASSIGN] to set the selected Assign to "On."**
   Each time [ASSIGN] is pressed it alternately switches this on and off. "ASSIGN" flashes in the display when the Assign is switched on.

   * *Always set any Assign that is not going to be used to "Off."*
4. **Press PARAMETER [◄] [►] to display the following screens.**

Target	ASSIGN 1 Target FV :Level
Target value range: Min	ASSIGN 1 Target Min: 0
Target value range: Max	ASSIGN 1 Target Max: 100
Source	ASSIGN 1 Source EXP PEDAL
Source Mode	ASSIGN 1 Source Mode: Normal
Active Range Low	ASSIGN 1 Source Act.Range Lo: 0
Active Range High	ASSIGN 1 Source Act.Range Hi:127

5. **Rotate the PATCH/VALUE dial to change the setting's value.**
6. **Repeat Steps 4 and 5 as needed.**
7. **To use other Assigns, repeat Steps 2–6.**
   Even when using this procedure, the settings selected in Step 6 are maintained as is and carried over to the Quick Settings for the next effect.
8. **To save the settings, use the Write procedure (p. 25).**
   Press [EXIT] to return to the Play screen.

Target

This sets the parameter to be affected. The parameters that you can select as the target are shown below.

Effect On/Off
Effect's Parameters
Switches on/off the effect indicated in the screen and controls the effect's parameters.

MST: Patch Level
Controls the patch volume.

MST: Master BPM
Controls the Master BPM.

TUNER On/Off
Turns the tuner on and off.

Master BPM(Tap)
Controls the Master BPM using tap input.

Delay Time(Tap)
Controls the delay time using tap input.

Remote Strt/Stop
Starts and stops the recorder, sequencer, or other such device connected to the GS-10.

Patch Level Inc1
Increases the patch volume level in increments of 10 units.

Patch Level Inc2
Increases the patch volume level in increments of 20 units.

Patch Level Dec1
Decreases the patch volume level in increments of 10 units.

Patch Level Dec2
Decreases the patch volume level in increments of 20 units.

CH Select Inc
Switches the preamp channel in the following order: A → B → C → A...

CH Select Dec
Switches the preamp channel in the following order: C → B → A → C...

* *Although you can set this so that the same target is controlled by more than one controller, in such cases, make sure not to have different sources changing the parameter at the same time. Changing the parameter simultaneously using different sources may result in noise being generated.*

Target Range

```
ASSIGN 1   Target
Min:            0
```

```
ASSIGN 1   Target
Max:          100
```

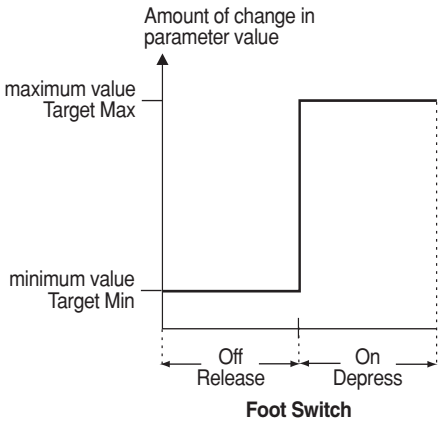
The value of the parameter selected as the target changes within the range defined by "Min" and "Max," as set on the GS-10.

When using an external foot switch, or other controller that acts as an on/off switch, "Min" is selected with Off (CLOSED), and "Max" is selected with On (OPEN).

When using an external expression pedal or other controller that generates a consecutive change in the value, the value of the setting changes accordingly, within the range set by the minimum and maximum values.

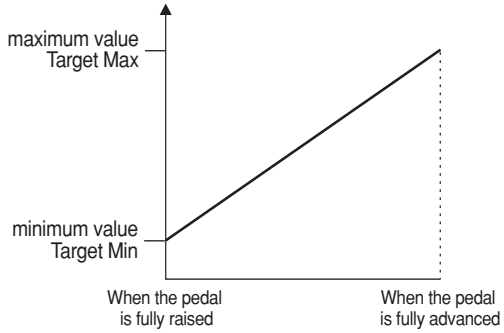
Also, when the target is of an on/off type, the median value of the received data is used as the dividing line in determining whether to switch it on or off.

When using the foot switch:



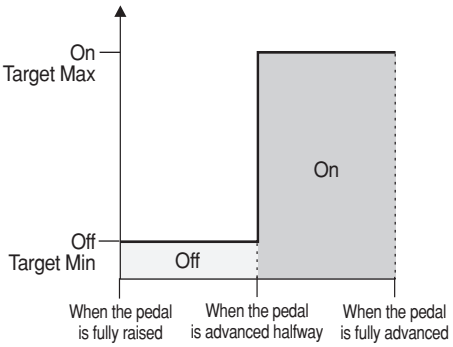
Foot Switch

When using the expression pedal:



Expression Pedal

When controlling the On/Off target with the expression pedal:



Expression Pedal

* *The range that can be selected changes according to the target setting.*

* *When the "minimum" is set to a higher value than the "maximum," the change in the parameter is reversed.*

* *The values of settings can change if the target is changed after the "minimum" and "maximum" settings have been made. If you've changed the target, be sure to recheck the "minimum" and "maximum" settings.*

Source

This sets the controller (source) that affects the target parameter.

Controllers that can be selected as the source are shown below.

EXP PEDAL

Expression pedal connected to the EXP PEDAL/CTL 1, 2 jack.

CTL 1, CTL 2

Foot switch connected to the EXP PEDAL/CTL 1, 2 jack.

MIDI CC# 1–31, 64–95

Control Change messages from an external MIDI device (1–31, 64–95)

Source Mode

This determines whether the control pedal will function as a momentary type switch (such as the optional FS-5U).

Normal

The normal state is Off (minimum value), with the switch On (maximum value) only while the foot switch is depressed.

Toggle

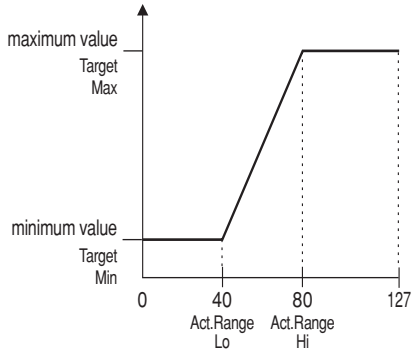
The setting is toggled On (maximum value) or Off (minimum value) with each press of the foot switch.

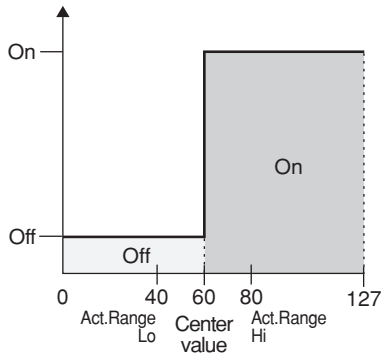
* *Set this to "Normal" when a latch-type foot switch (such as the optional FS-5L) is connected, or when selecting something other than a foot switch as the controller.*

Active Range

This sets the operational range within which the value of the setting changes when an expression pedal or other controller that changes the value consecutively is used as the source. If the controller is moved outside the operational range, the value does not change, it stops at "minimum" or "maximum."

(Example)
With Act. Range Lo: 40, Act. Range Hi: 80





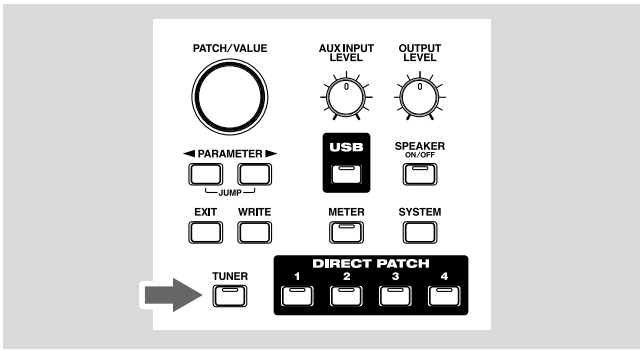
* *When using a foot switch or other on/off switching controller as the source, leave these at "Lo: 0" and "Hi: 127." With certain settings, the value may not change.*

Chapter 7 Convenient Functions and System Settings

Tuning the Guitar

When the Tuner is turned on, sounds input to the GS-10 are output directly as is (bypassed), and the tuner is activated. Under these conditions you can then tune your guitar.

Turning the Tuner Function On

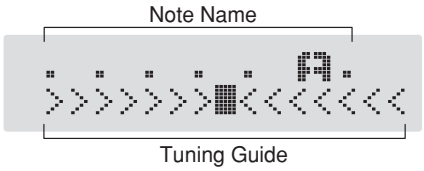


Each time [TUNER] is pressed, the Tuner is switched on or off.

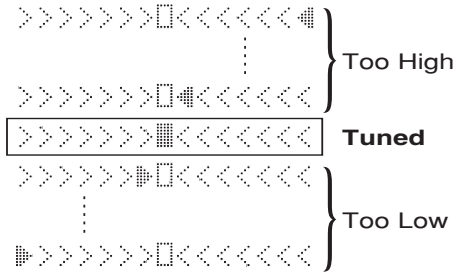
The [TUNER] button's indicator lights when the function is on.

About the Display During Tuning

With the GS-10's internal tuner, the note name is indicated in the upper row of the display and the Tuning Guide is shown in the lower row, indicating the difference between the input sound and the sound in the display.



When the difference from the correct pitch falls within 50 cents, the Tuning Guide then indicates the size of that difference. As you watch the Tuning Guide, tune the guitar so that the "■" appears in the center.



How to Tune

1. **Play a single open note on the string being tuned.**

   The name of the note closest to the pitch of the string that was played appears in the display.

   * *Only play a single note on the one string being tuned.*

2. **Tune the string until the string name appears in the display.**

	7th	6th	5th	4th	3rd	2nd	1st
Regular	B	E	A	D	G	B	E
1/2 Step Down	A#	D#	G#	C#	F#	A#	D#
1 Step Down	A	D	G	C	F	A	D

3. **As you watch the Tuning Guide, adjust the guitar's tuning until "■" appears in the center.**

4. **Repeat Steps 1–3 until all of the strings are tuned.**

   * *When tuning guitars equipped with a tremolo bar, when one string is tuned, the others may end up being out of tune. In this case, tune to the pitch indicated by the initial note name, then tune the other strings again, repeatedly fine-tuning each string.*

Changing the Tuner Settings

You can change the following tuner-related settings.

Changing the Reference Pitch (435–445 Hz)

The frequency of A4 (the middle A on a piano keyboard) played by an instrument (such as a piano) that provides the pitch to which the other instruments refer in tuning before a performance begins is called the reference pitch. You can set the reference pitch on the GS-10 from 435 to 445 Hz.

* *This is set to 440 Hz when shipped from the factory.*

Setting the Output Used During Tuning

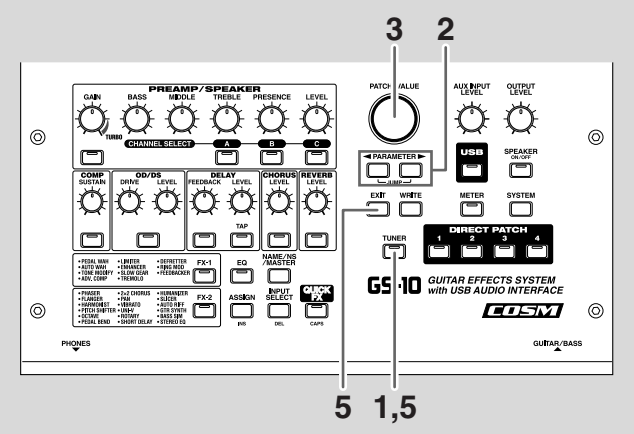
This selects the output while Tuner is on.

Mute:

Sounds are muted, and no sound is output.

Bypass:
Sounds input to the GS-10 bypass the processing and are output directly as is.

* *This is set to "Bypass" when shipped from the factory.*



1. **Press [TUNER], causing the indicator to light.**
2. **Press PARAMETER [◄] [►] until you have either "Tuner Pitch" or "Tuner Output" displayed.**
3. **Rotate the VALUE dial to change the settings.**
4. **Repeat Steps 2 and 3 to change each parameter's settings.**
5. **Press [TUNER] or [EXIT] to return to the Play screen.**

HINT

Switching Tuner On and Off with the External Pedal

You can use an external pedal (such as the FS-5U) connected to the EXP PEDAL CTL 1,2 jack to switch the tuner on and off.

Use the Assign (p. 60) settings to set the following to one of the Assigns in ASSIGN 1–8.

Target:	TUNER On/Off
Target Min:	On
Target Max:	Off
Source:	CTL1 (or CTL2)
Mode:	Toggle
Act. Range Lo:	0
Act. Range Hi:	1–127

Adjusting the Display Contrast (LCD Contrast)

Depending on where the GS-10 is placed, the display may become difficult to read. If this occurs, adjust the display contrast.

1. **Press [SYSTEM] a number of times until "LCD Contrast" is displayed.**

* *You can also select this by pressing [SYSTEM], and then pressing PARAMETER [◄] [►].*

2. **Rotate the PATCH/VALUE dial to adjust the contrast.**
   Valid Settings: 1–16
3. **Press [EXIT] to return to the Play screen.**

Limiting the Patches That Can Be Switched (Patch Extent)

By setting an upper limit to the patches, thus limiting the range of patches that can be switched, you can set the GS-10 so that only the patches you need can be selected.

1. **Press [SYSTEM], then press PARAMETER [◄] [►] so that "Patch Extent" is displayed.**

2. **Rotate the PATCH/VALUE dial to set the upper limit for the patches.**
   Valid Settings: U001–U100, P101–P200
3. **Press [EXIT] to return to the Play screen.**

Section 7

Keeping the Same Pedal Operations When Switching Patches (Assign Hold)

This setting determines whether or not the Assign's (p. 60) operational status is carried over to the next patch when patches are switched.

* *Assign Hold does not function if the Assign Source mode is set to Toggle (whereby the value is toggled between Min and Max each time the pedal is pressed).*

1. Press [SYSTEM], then press PARAMETER [◄] [►] so that "Assign Hold" is displayed.

2. Rotate the PATCH/VALUE dial to set Expression Pedal Hold.

On: The Assign status is carried over.

(Example)

If a patch is switched while the volume is being controlled with the expression pedal, the volume of the subsequent patch will take on the value determined by the current pedal position (angle).

If the patch switched to has the expression pedal controlling the wah effect, then the volume assumes the value set in the patch, and the patch's wah effect is given the value derived from the current pedal position (angle).

Off: The Assign status is not carried over.

(Example)

If a patch is switched while the volume is being controlled with an expression pedal, the volume of the subsequent patch is set to the value set in that patch.

If the expression pedal is operated, and that information is transmitted to the GS-10, the volume will change in accord with the pedal's movement.

3. Press [EXIT] to return to the Play screen.

Setting the Knob Functions (Knob Mode)

This sets the way the values of settings are changed when the control knobs are turned.

1. Press [SYSTEM], then press PARAMETER [◄] [►] so that "Knob Mode" is displayed.

2. Rotate the PATCH/VALUE dial to set the Knob mode.

Immediate:

Turning the knobs immediately changes the values.

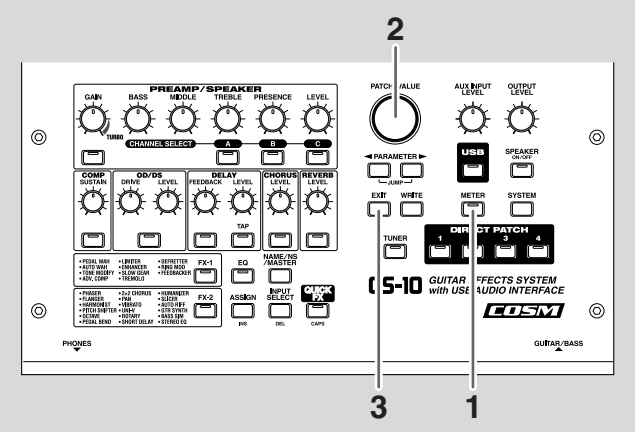
Current Setting:

Values begin to change only once the knob position reaches the values set in the patch.

3. Press [EXIT] to return to the Play screen.

Checking the Effect Output Level with the Level Meter

You can meter the output level of each effect. This is handy for checking the effects' output levels.



1. Press [METER].

2. Rotate the PATCH/VALUE dial to select the effect whose level you want to check.

* *Effects are shown in lowercase letters when turned off.*

* *You can check the level of signals being input to the INPUT jack by selecting "Input." Selecting "Output" allows you to check the level of signals output from the GS-10.*

* *You may not be able to achieve the effects you envision if your output levels are set too high. Adjust the output level of each of your effects to the optimum value while checking the meter and making sure the needle doesn't swing too far to the right.*

3. Press [EXIT] to return to the Play screen.

Chapter 8 Using the GS-10 with External MIDI Devices Connected

The GS-10's MIDI operations are altered when the GS-10 and the computer are connected via USB.

Also refer to "Chapter 9 Using USB to Connect a Computer" (p. 78) when making these connections.

Operations Using MIDI

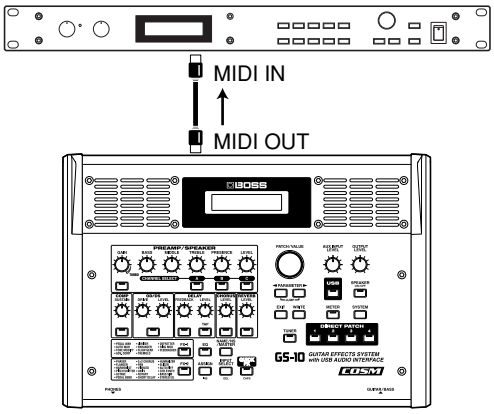
You can perform the following operations using MIDI with the GS-10.

* *The use of MIDI requires that the MIDI channels of the connected devices match. If the MIDI channel settings are not correct, the GS-10 will be unable to exchange data with other MIDI devices.*

Operating From the GS-10

Outputting Program Change Messages

When a patch is selected on the GS-10, a Program Change message corresponding to the patch number is transmitted simultaneously. The external MIDI device then switches its settings according to the Program Change message it receives.



Outputting Control Change Messages

Data describing the actions of the external devices connected to the EXP PEDAL/CTL 1,2 jack are output as Control Change messages. Such messages can be used to (among other things) manipulate the parameters of an external MIDI device.

Transmitting Data

You can use Exclusive messages to transmit the settings for effect sounds and other content stored in the GS-10 to other MIDI devices. For example, you can provide another GS-10 with the same settings, and save effect sound settings to a sequencer or other device.

Remotely Controlling the GS-10 Using an External MIDI Device

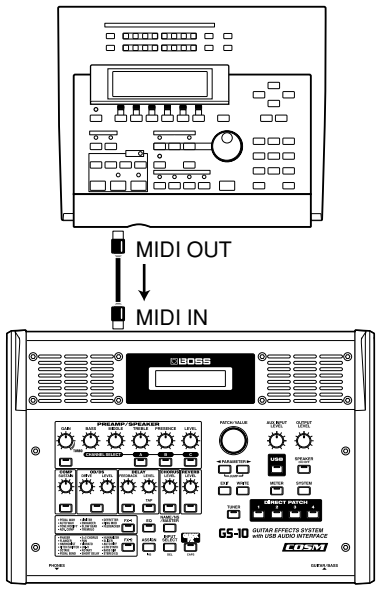
Switching Patch Numbers

When the GS-10 receive Program Change messages from the external MIDI device, its patches are simultaneously switched.

MEMO

You can set up the correspondence between MIDI Program Change messages and the GS-10's patches using the Program Change Map (p. 73). You may need to work on these correspondences when you want to line up some effects in combination with other MIDI devices.

The connections shown in the figure below are for a sequencer automatically performing the backing as a guitar is being played. The patches are switched automatically when the program numbers corresponding to the patches are input along with the performance data at the points where you have determined the GS-10 patches are to be switched.



Receiving Control Change Messages

You can control specified parameters during a performance by having the GS-10 receive Control Change messages.

MEMO

Parameters to be controlled are set with Assign (p. 60).

Receiving Data

The GS-10 can receive data transmitted from another GS-10, as well as data that's been stored on a sequencer.

Making the Settings for MIDI Functions

Here is a description of the GS-10's MIDI functions. Set them as needed, depending on the intended use.

1. **Press [SYSTEM] a number of times until the following screen appears.**

2. **Press PARAMETER [◄] [►] so that the parameter that you want to set appears in the display.**
3. **Rotate the PATCH/VALUE dial to change the setting's value.**
4. **Repeat Steps 2 and 3 as needed.**
5. **Press [EXIT] to return to the Play screen.**

RX Channel (Receive Channel)

Valid Settings: 1–16

This sets the MIDI channel used for receiving MIDI messages.

* *This is set to "1" when shipped from the factory.*

Omni Mode

Valid Settings: Omni Off, Omni On

When set to "Omni On," messages are received on all channels, regardless of the MIDI channel settings.

* *Even when Omni Mode is set to ON, the only Exclusive messages received are for Device ID data set with "Device ID."*

* *This is set to "Omni On" when shipped from the factory.*

TX Channel (Transmit Channel)

Valid Settings: 1–16, Rx

This sets the MIDI Transmit channel used for transmitting MIDI messages. When set to "Rx," this MIDI channel is same as the MIDI Receive channel.

* *This is set to "Rx" when shipped from the factory.*

Device ID

Valid Settings: 1–32

This sets the Device ID used for transmitting and receiving Exclusive messages.

* *This is set to "17" when shipped from the factory.*

Sync Clock

Valid Settings: Auto, Internal

You can synchronize the performance of a sequencer or other external MIDI device.

Auto:

When the MIDI Clock of the external MIDI device is not being received, the performance is synchronized to the tempo set in MASTER BPM; when the external MIDI device's MIDI Clock is being received, the performance is synchronized to that.

Internal:

The performance is synchronized to the tempo set in Master BPM.

* *This is set to "Auto" when shipped from the factory.*

* *When you have an external MIDI device connected, the Master BPM is then synchronized to the external MIDI device's tempo, thus disabling the Master BPM setting. To enable setting of the Master BPM, set to "Internal."*

* *When synchronizing performances to the MIDI Clock signal from an external MIDI device, timing problems in the performance may occur due to errors in the MIDI Clock.*

Remote Ctrl (Remote Control)

Valid Settings: Standard, Advanced, MMC

This setting determines the MIDI messages transmitted when a MIDI sequencer or other external MIDI device is controlled with a foot switch or other controller connected to the GS-10.

Standard:

System Realtime messages are transmitted.

Advanced:

System Realtime messages and Note messages are transmitted.

MMC:

MIDI Machine Control is transmitted.

* *For more details, refer to "Controlling Recorders and Sequencers Remotely from the GS-10 (Remote Control)" (p. 75).*

* *This is set to "Advanced" when shipped from the factory.*

KnobCtl Out (Knob Control Out)

Valid Settings: Off, On

This setting determines whether or not the information describing the knob adjustments is output as System Exclusive messages.

Off:

Knob operations are not output as System Exclusive messages.

On:

Knob operations are output as System Exclusive messages.

* *This is set to "On" when shipped from the factory.*

PC Out (Program Change Out)

Valid Settings: Off, On

This setting determines whether or not Program Change messages are output when patches are switched on the GS-10.

Off:

Program Change messages are not output, even when patches are switched.

On:

Program Change messages are simultaneously output when patches are switched.

* *This is set to "On" when shipped from the factory.*

EXP PDL Out (Expression Pedal Out)

Valid Settings: Off, 1–31, 33–95

This sets the controller number when expression pedal operation data is output as Control Change messages. When set to "Off, "Control Change messages are not output.

* *This is set to "CC# 7" when shipped from the factory.*

CTL1 Out (Control 1 Out)

Valid Settings: Off, 1–31, 33–95

This sets the controller number when operation data from the external pedal connected to the CTL 1 jack is output as Control Change messages. When set to "Off, "Control Change messages are not output.

* *This is set to "Off" when shipped from the factory.*

CTL2 Out (Control 2 Out)

Valid Settings: Off, 1–31, 33–95

This sets the controller number when operation data from the external pedal connected to the CTL 2 jack is output as Control Change messages. When set to "Off, "Control Change messages are not output.

* *This is set to "Off" when shipped from the factory.*

Transmitting and Receiving Settings Data

On the GS-10, you can use Exclusive messages to provide another GS-10 with identical settings, and save effect settings on a sequencer or other device.

Transmitting data this way is called "**Bulk Dump**," while receiving such data is referred to as "**Bulk Load**."

Transmitting Data to an External MIDI Device (Bulk Dump)

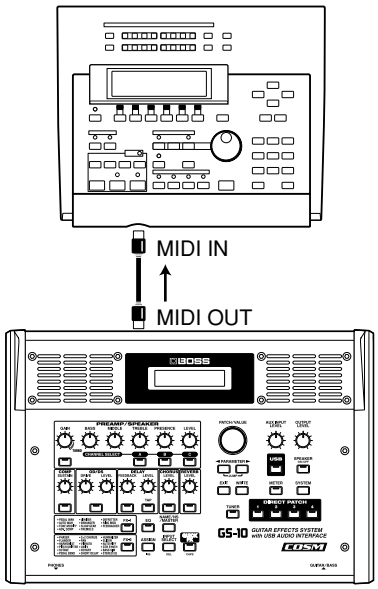
The following types of data can be transmitted. You can transmit data by specifying the range from the start to the end of transmission.

Displayed	Data Transmitted
System	System Parameters, Harmonist scales, Auto Riff phrases, and Preamp, Overdrive/Distortion, and Wah Custom Edit parameter settings
U001–U100	Settings for Patch Number U001 through U100
Temp	Settings for the patch the is currently called up

Making the Connections

When Saving to a MIDI Sequencer

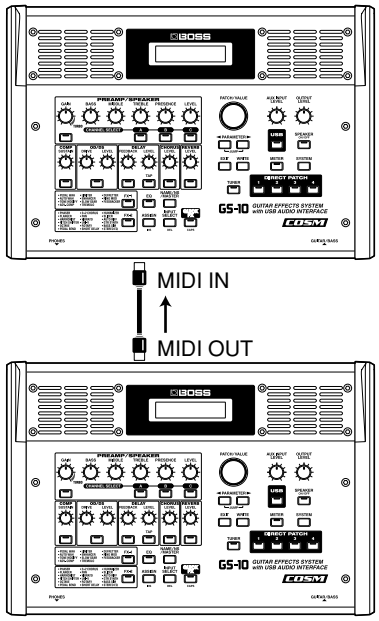
Connect as shown in the figure below, and put the sequencer in the state where it is ready to receive Exclusive messages.



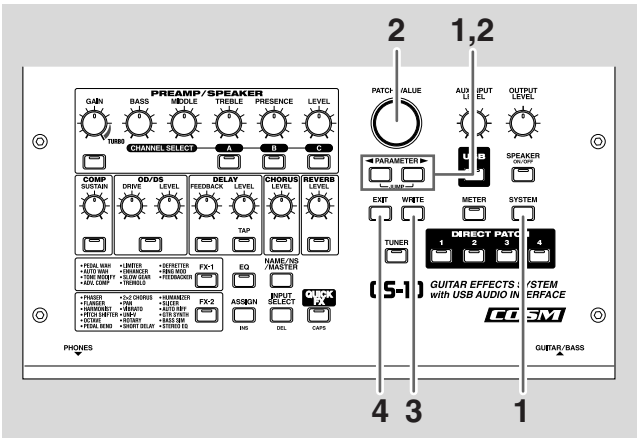
* *For instructions on operating the sequencer, refer to the owner's manual for the sequencer you are using.*

When Transmitting Data to Another GS-10

Connect as shown in the figure below, and match the Device ID for the transmitting and receiving devices.



Transmitting



1. **Press [SYSTEM], then press PARAMETER [◄] [►] so that "MIDI:Bulk Dump" is displayed.**

2. **Press PARAMETER [◄] [►] to move the cursor, and rotate the PATCH/VALUE dial to select the start and end of the data to be transmitted.**

3. **When the data to be sent has been determined, press [WRITE].**

   The data is transmitted.

```
MIDI:Bulk Dump
 Data Dumping...
```

When the transmission is completed, the screen prior to transmission returns to the display.

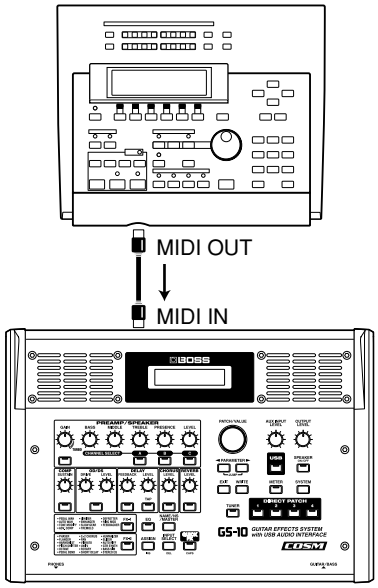
4. Press [EXIT] to return to the Play screen.

Receiving Data from an External MIDI Device (Bulk Load)

Making the Connections

When Receiving Data Saved on a MIDI Sequencer

Connect as shown below. Set the GS-10's Device ID to the same number that was used when the data was transmitted to the MIDI sequencer.



* *For instructions on operating the sequencer, refer to the owner's manual for the sequencer you are using.*

Receiving

1. Press [SYSTEM], then press PARAMETER [◄] [►] so that "MIDI:Bulk Load" is displayed.

```
MIDI:Bulk Load
      Waiting...
```

2. Transmit the data from the external MIDI device.

The following appears in the display when the GS-10 receives the data.

```
MIDI:Bulk Load
    Receiving...
```

The following appears in the display when the GS-10 finishes receiving the data.

```
MIDI:Bulk Load
       Idling...
```

At this stage, even more data can be received.

3. Press [EXIT] to quit Bulk Load.

After you press [EXIT], the Play screen returns to the display.

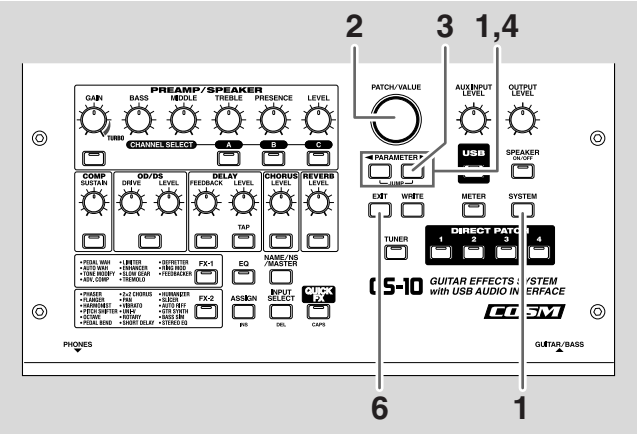
Setting the Program Change Map

When switching patches using Program Change messages transmitted by an external MIDI device, you can freely set the correspondence between Program Change messages received by the GS-10 and the patches to be switched to in the "Program Change Map."

Initial Program Change Map Settings

The Program Change Map set at the factory is shown below.

Program Change		Patch Number
Bank Select	Program Number	
0	1	U001
	2	U002
	3	U003
	:	:
	:	:
	98	U098
	99	U099
	100	U100
	101	U100
	102	U100
	:	:
	128	U100
1	1	P101
	2	P102
	3	P103
	:	:
	:	:
	98	P198
	99	P199
	100	P200
	101	P200
	102	P200
	:	:
	128	P200



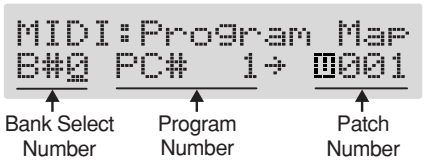
1. Press [SYSTEM], then press PARAMETER [◄] [►] so that "MIDI:Map Select" is displayed.

2. Rotate the PATCH/VALUE dial to select "Program."

* *You cannot set the Program Change Map when "Fix" is selected (it is not displayed).*

* *See below for more on "MID Map Select."*

3. Press PARAMETER [►] until "MIDI:Program Map" appears in the display.



4. Press PARAMETER [◄] [►] to move the cursor, and rotate the PATCH/VALUE dial to set the received Program number and the corresponding patch number.

* *Use this same procedure to select Bank Select Numbers.*

* *When using only Program Change messages to make program changes, without using Bank Select messages, set the Program number (1-128) when the Bank Select number is "0."*

5. Repeat Step 4 as needed, setting patch numbers to their corresponding Program numbers, until the Program Change Map is completed.

6. Press [EXIT] to return to the Play screen.

Enabling/Disabling the Program Change Map Settings (MIDI Map Select)

This setting determines whether patches are switched according to the Program Change Map settings, or to the default settings.

1. **Press [SYSTEM], then press PARAMETER [◄] [►] so that "MIDI:Map Select" is displayed.**

2. **Rotate the PATCH/VALUE dial to select "Fix" or "Prog."**

   Fix:

   Switches to the patches according to the default settings.

   For more on the default settings, refer to "Initial Program Change Map settings" (p. 73).

   Prog:

   Switches to the patches according to the Program Change Map.

3. **Press [EXIT] to return to the Play screen.**

Changing Patch Numbers on an External MIDI Device From the GS-10

When patches are switched with the GS-10, a Program Change message is transmitted. The correspondence between the GS-10's initial bank and patch numbers and the transmitted Program Change messages is shown in the table below.

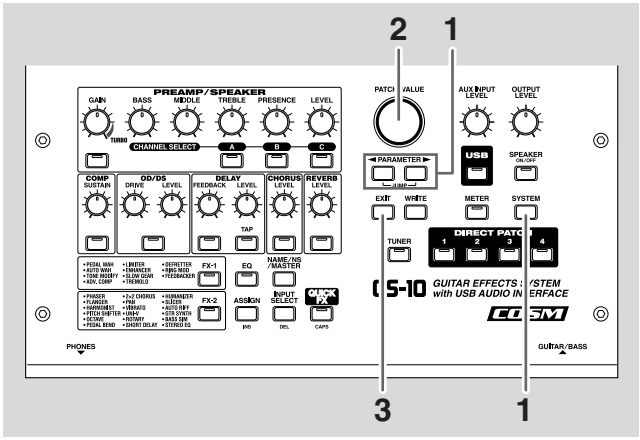
Patch Number	Program Change	
	Bank Select	Program Number
U001	0	1
U002		2
U003		3
:		:
:		:
U098		98
U099		99
U100		100
P101	1	1
P102		2
P103		3
:		:
:		:
P198		98
P199		99
P200		100

Controlling Recorders and Sequencers Remotely from the GS-10 (Remote Control)

If you have a MIDI-controllable recorder, sequencer, or other such external MIDI device connected to the GS-10, you can connect a foot switch to the EXP PEDAL CTL 1,2 jack and use it for remote control of the external MIDI device.

Setting the Messages Used for Controlling Devices

The GS-10 features three kinds of messages (MIDI messages) that are used for controlling external MIDI devices, and you can select messages in accordance with the connected device.



1. **Press [SYSTEM] a number of times, then press PARAMETER [◄] [►] so that "MIDI:Remote Ctrl" is displayed.**

2. **Use the PATCH/VALUE dial to select the message according to the connected external MIDI device.**

When set to Standard

MIDI System messages are transmitted.

STOP	FC
START	FA

When set to Advanced

Some computer applications allow recording and playback functions such as Start and Stop to be assigned to specified MIDI messages.

When this setting is selected, Note messages used in sending commands for remote control to the application and Note messages for assigning various functions are transmitted together with the Standard messages.

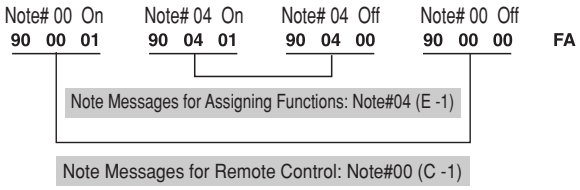
Use the software to set the operations to be performed by means of these Note messages.

* *Settings examples are given on p. 76 and p. 77. Please refer to these examples.*

STOP	90 00 00 90 02 01 90 02 00 90 00 00 FC
START	90 00 00 90 04 01 90 04 00 90 00 00 FA

About Note Messages

When START is activated, the following messages are output.



Messages are similarly output for Reset/Stop/Play/Rec.

The following shows the correspondence between the functions and the Note messages used in assigning them.

	Note#	Note Name (Key)
Reset	05	F -1
Stop	02	D -1
Play	04	E -1
Rec	07	G -1

* *The note name (Key) may differ depending on the application used and the settings; you may wish to refer to the relevant manual for details.*

* *Note messages are transmitted over the selected transmission channel (p. 69).*

When set to MMC

MIDI Machine Control is transmitted.

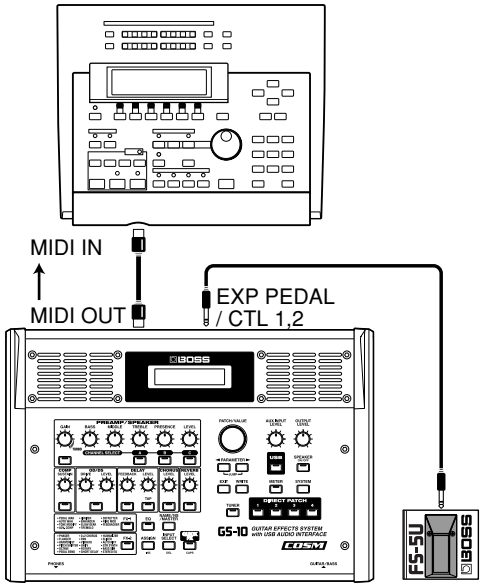
STOP	F0 7F 7F 06 01 F7
START	F0 7F 7F 06 02 F7

3. **Press [EXIT] to return to the Play screen.**

Controlling the Device Remotely

Making the Connections

Make the connections as shown below.



* *For more on the operation of the connected device, refer to the owner's manual for the device you are using.*

Setting

1. **Follow the instructions in "Setting the Messages Used for Controlling Devices" (p. 75) to set the messages that are to be used for remote control.**

2. **Press [SYSTEM] a number of times, then press PARAMETER [◄] [►] so that "SYS:CTL1 Func" (or "SYS:CTL2 Func") is displayed.**

* *If connecting only one foot switch, set the GS-10 so that "SYS:CTL1 Func" is indicated; if connecting two foot switches, set the GS-10 so that "SYS:CTL1 Func" or "SYS:CTL2 Func" is indicated for the corresponding foot switch.*

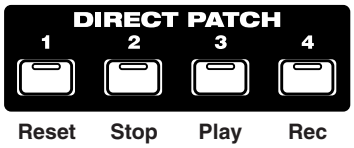
3. **Rotate the PATCH/VALUE dial to select "Remote Strt/Stop."**

* *For more on "SYS:CTL1 Func" (or "SYS:CTL2 Func"), refer to p. 59.*

4. **Press [EXIT] to return to the Play screen.**

   Each time the foot switch is pressed, it alternately sends Start and Stop.

With the GS-10, you can control external MIDI devices by combining [EXIT] and DIRECT PATCH [1]–[4].



The Reset, Stop, Play, and Rec functions are assigned to DIRECT PATCH [1]–[4]. When you press these buttons while holding down [EXIT], the messages corresponding to the MIDI: Remote Ctrl setting are transmitted.

When MIDI: Remote Ctrl is set to Standard

MIDI System messages are transmitted.

Reset	No function
Stop	FC
Play	FA
Rec	No function

* *Neither FA nor FC can be transmitted consecutively.*

When MIDI: Remote Ctrl is set to Advanced

Some computer applications allow recording and playback functions such as Start and Stop to be assigned to specified MIDI messages.

When set to this setting, Note messages used in assigning functions are transmitted in addition to the Standard messages.

Use the software to set the operations to be performed by means of these Note messages.

Reset	90 00 01 90 05 01 90 05 00 90 00 00
Stop	90 00 01 90 02 01 90 02 00 90 00 00 FC
Play	90 00 01 90 04 01 90 04 00 90 00 00 FA
Rec	90 00 01 90 07 01 90 07 00 90 00 00

* *Neither FA nor FC can be transmitted consecutively.*

* *Note messages are transmitted over the selected transmission channel (p. 69).*

When set to MMC

MIDI Machine Control is transmitted.

Reset	F0 7F 7F 06 44 06 01 00 00 00 00 00 F7
Stop	F0 7F 7F 06 01 F7
Play	F0 7F 7F 06 02 F7
Rec	F0 7F 7F 06 06 F7

Settings Example: When Using SONAR 2.0

The following settings allow you to control the sequencer Play/Stop, Reset, and Record functions from the GS-10.
(With SONAR 2.0, these are set according to note names (Keys) rather than Note messages.)

1. **From the Options menu, choose "MIDI Devices."**
2. **In the "MIDI Devices" dialog box, select [BOSS GS-10 Control] as both the Inputs and Outputs.**
3. **From the Options menu, choose "Key Bindings."**
4. **Make the following settings in the "Key Bindings" dialog box.**

   [Type of Keys]
   Check "MIDI" and "Enable"

   [MIDI 'Shift' Options]
   Check "Key", and input "C -1"
5. **In the [Bindings] area, set [Key] to [D -1].**
6. **In the [Function] area, select [Transport | Stop].**
7. **Click the [Bind] button.**
   The [Key] [D -1] will be connected to the [Function] area [Transport | Stop].
8. **In the [Bindings] area, set [Key] to [E -1].**
9. **In the [Function] area, select [Transport | Play].**
10. **Click the [Bind] button.**
    The [Key] [E -1] will be connected to the [Function] area [Transport | Play].
11. **In the [Bindings] area, set [Key] to [F -1].**
12. **In the [Function] area, select [Transport | Reset].**
13. **Click the [Bind] button.**
    The [Key] [F -1] will be connected to the [Function] area [Transport | Reset].
14. **In the [Bindings] area, set [Key] to [G -1].**
15. **In the [Function] area, select [Transport | Record].**
16. **Click the [Bind] button.**
    The [Key] [G -1] will be connected to the [Function] area [Transport | Record].

    Repeat Steps 5–16 so that the following settings are created.

	Note #	Key	Function
Reset	05	F-1	Transport | Reset
Stop	02	D-1	Transport | Stop
Play	04	E-1	Transport | Play
Rec	07	G-1	Transport | Record

17. **Click the [OK] button to finish making settings.**
    The "Key Bindings" dialog box will close, and the settings will be completed.

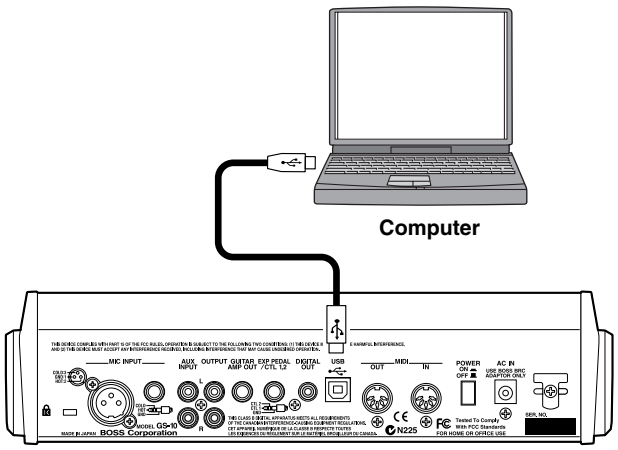
Chapter 9 Using the GS-10 Connected to a Computer Via USB

Before Connecting with USB

With the GS-10, you can use USB to transmit both digital audio signals and MIDI messages between the GS-10 and your computer.

This requires installation of a USB driver on your computer so that it can work with the GS-10's driver mode settings.

For instructions on installing the driver, please read "Installing & Setup the USB Driver" (p. 125).



Driver Mode

The GS-10 features two operational modes, one mode that uses the special driver on the CD-ROM included with the GS-10 and another mode that uses the operating system's (Windows/Mac OS) standard drivers.

The special driver provides high-quality sound and stable timing for audio recording, playback, and editing.

In addition, the driver enables you to control the GS-10 with MIDI messages and connect external MIDI devices to your computer.

Setting USB-Related Functions

Adjusting the Recording Level (Output Level)

This adjusts the volume level of the digital audio output to the USB and DIGITAL OUT connectors.

1. **Press [USB].**
2. **Press PARAMETER [◄] [►] so that "Out Levl" is displayed.**

3. **Rotate the PATCH/VALUE dial to set the output level.**
4. **Press [EXIT] to return to the Play screen.**

Adjusting the Playback Volume Level (Input Level)

This adjusts the volume level of the digital audio input from the USB connector.

1. **Press [USB].**
2. **Press PARAMETER [◄] [►] so that "Input Level" is displayed.**

3. **Rotate the PATCH/VALUE dial to set the input level.**
4. **Press [EXIT] to return to the Play screen.**

Enabling and Disabling the Direct Monitor Command

This setting determines whether or not the command (the Direct Monitor command) controlling the Direct Monitor (described later) setting is enabled.

1. **Press [USB].**
2. **Press PARAMETER [◄] [►] "Monitor Cmd" is displayed.fig.**

3. **Use the PATCH/VALUE dial to enable or disable the command.**

   Disable:
   The Direct Monitor command is disabled, maintaining the Direct Monitor mode set by the GS-10.

   Enable:
   The Direct Monitor command is enabled, allowing the Direct Monitor mode to be switched from an external device.

   * *This is set to "Disable" when shipped from the factory.*

4. **Press [EXIT] to return to the Play screen.**

Switching the Output Signals (Direct Monitor)

This setting determines whether or not the effect sound is output by the GS-10's speakers or at the PHONES, OUTPUT L/R, or GUITAR AMP OUT jacks.

1. **Press [USB].**
2. **Press PARAMETER [◄] [►] so that "Dir Monitor" is displayed.**

3. **Rotate the PATCH/VALUE dial to set On or Off.**

   On:
   The effect sound is output. Set this to On when using the GS-10 as a standalone device, without connecting to a computer (no sound will be output if this is set to Off).

   Off:
   Set this to Off if transmitting audio data internally through a computer (Thru).

   * *This is set to "On" when shipped from the factory.*

   * *If you are using the special driver, you can control Direct Monitor On/Off from ASIO 2.0-compatible application such as Cubase.*

4. **Press [EXIT] to return to the Play screen.**

Setting the Output Mode

This selects whether the output is in stereo or if the effect sound and direct sound are output separately.

1. **Press [USB].**
2. **Press PARAMETER [◄] [►] so that "Output Mode" is displayed.**

3. **Rotate the PATCH/VALUE dial to set the output mode.**

   Stereo (L/R):
   Sounds are output in stereo.

   Effect/Direct:
   The effect sound and direct sound are output separately and independently.

   * *This is set to "Stereo (L/R)" when shipped from the factory.*

4. **Press [EXIT] to return to the Play screen.**

Switching the Driver Mode

After first installing both the special and standard drivers and then switching the GS-10's driver mode, you can switch between the special driver and the standard driver to use the one you need.

For more on installing the drivers, refer to "Installing & Setup the USB Driver" (p. 125).

1. **Press [USB].**
2. **Press PARAMETER [◄] [►] so that "Driver Mode" is displayed.**

3. **Rotate the PATCH/VALUE dial to set the driver mode.**

   Standard:
   The standard OS USB driver is used in this mode.

   Advanced:
   The special driver on the included CD-ROM is used in this mode.

   * *This is set to "Advanced" when shipped from the factory.*

4. **Press [EXIT] to return to the Play screen.**

   * *If the driver for the set mode has not yet been installed, at this point you need to turn off the power to the GS-10 and install the driver.*

5. **Quit any sequencer software and any other computer applications used by the GS-10.**
6. **Switch off the GS-10, then turn it on again.**
   The corresponding driver is installed on the computer.

MIDI in Standard Driver Mode

Normally, it's better to use MIDI in the Advanced driver mode.

* *With the factory settings, the Standard driver mode is compatible only with audio.*

If "Standard" is selected as the driver mode with an OS standard driver that is compatible with both audio and MIDI data, you can use both audio and MIDI with the standard driver by making the following settings.

* *It has been confirmed that standard Windows XP/2000/Me/98 and Mac OS X/9/8 drivers are not supported or that problems may occur due to their use.*

1. **Press [USB].**
2. **Press PARAMETER [◄] [►] so that "Std.Drv Func" is displayed.**

3. **Rotate the PATCH/VALUE dial to set the standard driver function.**

   Audio:
   Only audio is used.

   Audio&MIDI:
   Both audio and MIDI are used.

4. **Press [EXIT] to return to the Play screen.**
5. **Quit any sequencer software and any other computer applications used by the GS-10.**
6. **Turn off the power to the GS-10, and then turn the unit on again.**

   * *For more on installing the drivers, refer to "Installing & Setup the USB Driver" (p. 125).*

Recording the GS-10's Output with a Computer

Set your application (such as a sequencer) so that the audio input port it uses is the GS-10.

You can freely set the point in the signal chain from which to extract the signal to be sent to the computer with Effect Chain (p. 24). For example, by setting this so that the computer records the signals as they are at the beginning of the chain, you can record the sounds without any effects added while you listen to the performance with the effects applied from the speakers.

If you are using the software to send the audio data through, set Direct Monitor (p. 79) to Off.

Applying Effects with the GS-10 to a Computer's Audio Playback

Set the audio output port used by applications to the GS-10.

You can use the GS-10 to add effects to audio data played back from the computer, and then record these sounds back to the computer.

Use this feature when you want to add effects to existing audio data.

1. Press [INPUT SELECT].

2. Use the PATCH/VALUE dial to select one of the following settings.

USB (Gtr/Mic):
Effects are applied to guitar and vocal sounds from the computer.

USB (Bass):
Effects are applied to bass sounds from the computer.

3. Press [EXIT] to return to the Play screen.
The flow of audio signals at this point is shown in the figure on p. 19, p. 20.

NOTE
In this mode, set the software so that audio is not transmitted through (not set to Thru).

Running the GS-10 from a Computer

You can use USB MIDI to run the GS-10 from your computer.

When you set the GS-10 to the Advanced driver mode (p. 126, p. 146), the MIDI connectors used for operation of the GS-10 switches from MIDI IN/OUT connectors to the USB driver's "GS-10 Control" MIDI ports. Set your editor and sequencer MIDI input and output ports to GS-10 Control.

For more on MIDI-related settings, refer to "Chapter 8 Using the GS-10 with External MIDI Devices Connected" (p. 68).

Using the GS-10 As a MIDI Interface

When the GS-10 is set to the Advanced driver mode (p. 126, p. 146) and connected via USB, you can use the GS-10's MIDI IN and OUT connectors to connect your computer to external MIDI devices.

Set the input and output ports used for the computer's MIDI applications to GS-10 MIDI In/Out.

Appendices

About MIDI

MIDI is an acronym for Musical Instrument Digital Interface, and is a world-wide standard for allowing electronic musical equipment to communicate by transmitting messages such as performance information and sound selections. Any MIDI equipped device is able to transmit applicable types of data to another MIDI equipped device, even if the two devices are different models or were made by different manufacturers.

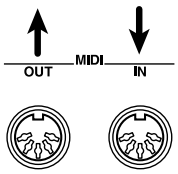
In MIDI, performance information such as playing a key or pressing a pedal are transmitted as MIDI Messages.

How MIDI messages are transmitted and received

First, we will explain briefly how MIDI messages are transmitted and received.

MIDI connectors

The following types of connector are used to convey MIDI messages. MIDI cables are connected to these connectors as needed.



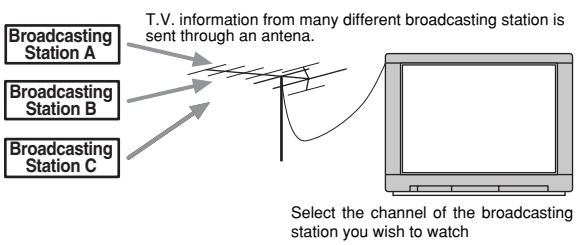
MIDI IN	This connector receives messages from another MIDI device.
MIDI OUT	This connector transmits messages from this device.
MIDI THRU	This connector re-transmits the messages that were received at MIDI IN.

* *The GS-10 features both "MIDI IN" and "MIDI OUT" connectors.*

MIDI channels

MIDI is able to independently control more than one MIDI device over a single MIDI cable. This is possible because of the concept of MIDI channels.

The idea of MIDI channels is somewhat similar to the idea of television channels. By changing channels on a television set, you can view a variety of programs. This is because the information of a particular channel is received when the channels of the transmitter and receiver match.



MIDI has sixteen channels 1–16, and MIDI messages will be received by the instrument (the receiving device) whose channel matches the channel of the transmitter.

* *If omni mode is on, data of all MIDI channels will be received regardless of the MIDI channel setting. If you do not need to control a specific MIDI channel, you may set Omni On.*

Main types of MIDI message used by the GS-10

MIDI includes many types of MIDI messages that can convey a variety of information. MIDI messages can be broadly divided into two types; messages that are handled separately by MIDI channel (channel messages), and messages that are handled without reference to a MIDI channel (system messages).

Channel messages

These messages are used to convey performance information. Normally these messages perform most of the control. The way in which a receiving device will react to each type of MIDI message will be determined by the settings of the receiving device.

Program change messages

These messages are generally used to select sounds, and include a program change number from 1 to 128 which specifies the desired sound. The GS-10 also allows you to select any of the 200 different patch numbers in conjunction with bank select messages; a type of control change message.

Control change messages

These messages are used to enhance the expressiveness of a performance. Each message includes a controller number, and the settings of the receiving device will determine what aspect of the sound will be affected by control change messages of a given controller number.

The specified parameters can be controlled with the GS-10.

System messages

System messages include exclusive messages, messages used for synchronization, and messages used to keep a MIDI system running correctly.

Exclusive messages

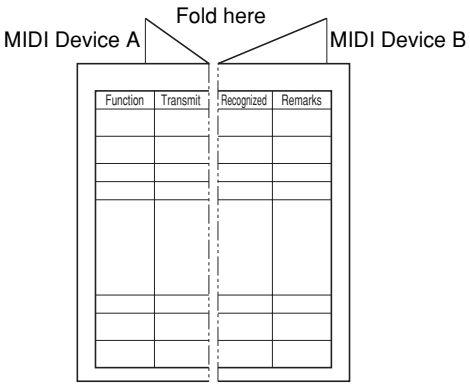
Exclusive messages handle information related to a unit's own unique sounds, or other device-specific information. Generally, such messages can only be exchanged between devices of the same model by the same manufacturer. Exclusive messages can be employed to save the settings for effects programs into a sequencer, or for transferring such data to another GS-10.

The two instruments must be set to the same device ID numbers when exchanging SysEx messages.

About the MIDI implementation

MIDI allows a variety of messages to be exchanged between instruments, but it is not necessarily the case that all types of message can be exchanged between any two MIDI devices. Two devices can communicate only if they both use the types of messages that they have in common.

Thus, every owner's manual for a MIDI device includes a "MIDI Implementation Chart." This chart shows the types of message that the device is able to transmit and receive. By comparing the MIDI implementation charts of two devices, you can tell at a glance which messages they will be able to exchange. Since the charts are always of a uniform size, you can simply place the two charts side by side.



About USB

USB, short for "Universal Serial Bus," is an interface for connecting peripheral equipment to computers. Using USB, you can connect a variety of peripherals using a single USB cable and transfer data rapidly. It also allows peripheral devices to be connected or disconnected while the power is left on, while the computer automatically recognizes when this occurs (some devices may require settings or other procedures).

With the GS-10, you can use MIDI to transfer MIDI messages and audio data.

Error Messages

If you attempt an incorrect operation or if an operation could not be executed, the display will indicate an error message. Refer to this list and take the appropriate action.

```
Battery Low !!
  Please Change
```

- The memory backup battery inside the GS-10 has run down. (This message will appear when the power is turned on.)

❍ Replace the battery as soon as possible. For battery replacement, please contact a nearby Roland service center or your dealer.

```
MIDI Off Line !
```

- There is a problem with the MIDI cable connection.

❍ Check to make sure the cable has not been pulled out or is not shorted.

```
MIDI Buffer Full
```

- More MIDI messages were received in a short time than could be processed correctly.

```
Not Available !
    Check OUTPUT
```

- You are attempting to change the following PREAMP/SPEAKER (p. 28) parameter settings with OUTPUT SELECT (p. 16) set to something other than Line/Phones:

  SP Type, Mic Type, Mic Dis., Mic Pos., Mic Level, Direct Level

❍ The settings may be changed, but they have no effect.

Patch List

No.	Patch Name	OD/DS	Ch. Select	ch-A	ch-B	ch-C
P101	POWER LEAD	-	A	MS1959(I)	Drive Stack	Metal Lead
P102	WARM CLEAN	-	A	Warm Clean	Warm Clean	JC-120
P103	BRIT VALVES	-	A	VO Drive	MS1959(I)	MS HiGain
P104	METAL MASTERS	-	A	T-Amp Lead	R-FIER Red	5150 Drive
P105	ATTIC AMPS	-	A	Pro Crunch	Clean TWIN	VO Lead
P106	WARM OVERDRIVE	T-Scream	A	Fat MATCH	Crunch	VO Drive
P107	1969 VIBE	'60s FUZZ	A	MS1959(I)	MS1959(I)	Power Stack
P108	CLASSICAL ROCK	T-Scream	A	Pro Crunch	MS1959(I)	MS HiGain
P109	5th TONE+SlwGEAR	-	A	Warm Clean	JC-120	SLDN
P110	CRYING	GUV DS	A	MS1959(I)	MS1959(II)	MS HiGain
P111	70's FUNK	-	A	Clean TWIN	Clean TWIN	Clean TWIN
P112	ALMOST HUMAN	-	A	Clean TWIN	Crunch	BG Lead
P113	80's ROCKABILLY	-	A	Warm Clean	Pro Crunch	Drive Stack
P114	H&K TRIPLE	-	A	T-Amp Clean	T-Amp Crunch	T-Amp Lead
P115	TEXAS TREM	Blues OD	A	Warm Clean	Clean TWIN	Pro Crunch
P116	JAZZ CATS	-	B	Jazz Combo	Pro Crunch	SLDN
P117	DRIVIN' BG	-	A	BG Rhythm	BG Drive	R-FIER Orng
P118	BIGGEST MUFF	MUFF FUZZ	A	JC-120	Full Range	Pro Crunch
P119	CLEAN + DRIVE	Turbo OD	A	Warm Clean	MATCH Drive	Smooth Drive
P120	SOLID STACK	Booster	A	Power Stack	Power Stack	Power Stack
P121	CRUNCH ROTARY	-	A	Crunch	Crunch	Crunch
P122	CLASSIC TRIO	-	A	Clean TWIN	MS1959(I+II)	R-FIER Red
P123	OC + FUZZ	MUFF FUZZ	A	MS1959(I)	BG Lead	Power Stack
P124	3 CHANNEL TWIN	-	A	Clean TWIN	Clean TWIN	Clean TWIN
P125	CREAMED MS1959	-	A	Wild Crunch	MS1959(I+II)	MS1959(II)
P126	CRUNCHY STRAT	Blues OD	A	Warm Clean	Clean TWIN	Pro Crunch
P127	FLANGE ME OUT!	-	A	Clean TWIN	Crunch	Smooth Drive
P128	DS-1 STANDARD	Distortion	A	MS1959(I)	Drive Stack	Drive Stack
P129	DOTTED 8th DELAY	-	A	Warm Clean	Tweed	Full Range
P130	FAT CRUNCH!!	-	A	Wild Crunch	Fat MATCH	SLDN
P131	FEEDBACK	-	A	Crunch	R-FIER Red	R-FIER Red
P132	FRETLESS SOLO	-	A	Mic Preamp	BASS 360	Warm Clean
P133	1968-80 for LP	-	A	VO Drive	MS1959(I)	MS1959(I)
P134	GS-PAD	-	C	Full Range	Clean TWIN	Warm Clean
P135	HARMONYMAN in Am	-	A	Warm Clean	Wild Crunch	MS1959(I+II)
P136	NATURAL CRUNCH	Natural OD	A	Blues	T-Amp Clean	Drive Stack
P137	HUM->ACOUSTIC	-	C	Full Range	Full Range	Full Range
P138	HARD ROCK70s-90s	-	A	MS HiGain	BG Lead	5150 Drive
P139	HEAVY RIFF	-	A	R-FIER Vint	R-FIER Orng	R-FIER Red
P140	HiGAIN BG LEAD	-	A	BG Rhythm	BG Drive	BG Lead
P141	HIT E5 CHORD	Booster	A	MS1959(I+II)	SLDN	BG Drive
P142	JAZZY CHORD LP	-	A	Warm Clean	Jazz Combo	JC-120
P143	LOUD,LDR,LOUDEST	-	A	MS1959(I)	Power Stack	R-FIER Orng
P144	CLASSIC DUDE	T-Scream	A	JC-120	VO Drive	VO Lead
P145	LEGATO MASTER	-	A	Clean TWIN	Smooth Drive	T-Amp Lead
P146	MAGIC JC	-	A	JC-120	JC-120	MS HiGain
P147	MATCH ROCK	-	A	MATCH Drive	Fat MATCH	Fat MATCH
P148	MELLOW HOLLOW	-	A	Warm Clean	Crunch	Smooth Drive
P149	MELTDOWN	-	A	JC-120	Fat MATCH	MS1959(I)
P150	METALIZER	-	A	Clean TWIN	5150 Drive	Metal Lead

No.	Patch Name	OD/DS	Ch. Select	ch-A	ch-B	ch-C
P151	MORPHEOUS	-	C	Full Range	MATCH Drive	R-FIER Vint
P152	MS TRI-CHANNEL	-	A	MS1959(I)	MS1959(I)	MS HiGain
P153	MODERN CRUNCH	-	A	T-Amp Clean	T-Amp Clean	T-Amp Lead
P154	MONO SYNTH	-	A	JC-120	Blues	SLDN
P155	CLEAN&COMPRESSED	-	A	Clean TWIN	Clean TWIN	BG Lead
P156	DRIVE1964-65-69	-	A	VO Drive	VO Lead	Clean TWIN
P157	OCTAVE SYN LEAD	Metal Zone	A	Mic Preamp	Mic Preamp	Mic Preamp
P158	OLD MS w/JUMPER	-	A	MS1959(I)	MS1959(II)	MS1959(I+II)
P159	SLICE IT UP!	-	A	BG Rhythm	Clean TWIN	SLDN
P160	OCTAVE T-WAH	-	A	Clean TWIN	BG Lead	5150 Drive
P161	RHODES GUITAR	-	A	Warm Clean	Warm Clean	Warm Clean
P162	PINK WALL	-	A	MATCH Drive	MATCH Drive	MATCH Drive
P163	POWER CHORD	Blues OD	A	Crunch	MATCH Drive	Fat MATCH
P164	ORCHESTRAL DELAY	-	A	Clean TWIN	Crunch	VO Drive
P165	ROCK ON DOWN 2 D	Turbo OD	A	Warm Clean	Pro Crunch	MS HiGain
P166	TRIPLE CLEAN	-	A	Warm Clean	Pro Crunch	T-Amp Clean
P167	R-FIRED UP	-	A	R-FIER Orng	R-FIER Orng	R-FIER Red
P168	REAL TWEED	-	A	Tweed	Tweed	Tweed
P169	SINGLE->ACOUSTIC	-	A	Mic Preamp	Full Range	Warm Clean
P170	SMOOTH LEAD	-	A	Smooth Drive	Smooth Drive	Smooth Drive
P171	SNAPPY WAH	-	A	Warm Clean	Blues	T-Amp Lead
P172	ST CRUNCH AMB	-	A	Fat MATCH	Crunch	VO Drive
P173	SUPER CLEAN	-	A	Mic Preamp	Mic Preamp	JC-120
P174	SCOOP!	-	A	Crunch	T-Amp Lead	5150 Drive
P175	SEMI-HOLLOW	-	A	Clean TWIN	Clean TWIN	Clean TWIN
P176	SMOOTH SOLO	-	A	Smooth Drive	Smooth Drive	Smooth Drive
P177	STRICTLY STRAT	Blues OD	A	Warm Clean	Clean TWIN	Pro Crunch
P178	OCTAVE FUZZ	Oct FUZZ	A	Pro Crunch	Clean TWIN	Pro Crunch
P179	SUPER NATURAL	-	A	Warm Clean	Mic Preamp	JC-120
P180	AUSTIN + HOUSTON	-	A	Warm Clean	Clean TWIN	BG Rhythm
P181	MOVING IN SYNC	-	A	Pro Crunch	Tweed	BG Drive
P182	SWAMP for ST	-	A	Pro Crunch	Tweed	MS1959(I)
P183	TON O'METAL	-	A	R-FIER Red	Drive Stack	MS HiGain
P184	TREM-VIBRATO	-	A	Clean TWIN	VO Drive	Power Stack
P185	5th MONO DRONE	Oct FUZZ	A	Warm Clean	Clean TWIN	MS1959(I+II)
P186	CLN,CRUNCH&TWEED	-	A	Clean TWIN	Pro Crunch	Tweed
P187	ROCK RHYTHM	-	A	Warm Clean	MS1959(I)	MS1959(I)
P188	BASSFACE	-	A	CONCERT 810	Bass Crunch	Bass HiGain
P189	PLAY E.ACOUSTIC	-	A	Mic Preamp	Full Range	JC-120
P190	PIEZO->Ac.GUITAR	-	C	Full Range	Full Range	Full Range
P191	VOCAL HARMO[Mic]	-	A	Mic Preamp	Clean TWIN	MS HiGain
P192	FINGERED [Bass]	-	A	FLIP TOP	T. E.	BASS 360
P193	PICK DRIVE[Bass]	-	A	SESSION	BASS 360	Bass Crunch
P194	FUNK SLAP [Bass]	-	A	Bass Clean	T. E.	SESSION
P195	ENHANCED [Bass]	-	A	SESSION	Bass Clean	T. E.
P196	FRETLESS [Bass]	-	A	BASS 360	Mic Preamp	T. E.
P197	TRIPLE 810[Bass]	-	A	CONCERT 810	CONCERT 810	CONCERT 810
P198	OC HiGAIN [Bass]	-	A	T. E.	B-MAN	Bass HiGain
P199	B-MANIAC [Bass]	-	A	B-MAN	B-MAN	B-MAN
P200	DI CLEAN [Bass]	-	A	Mic Preamp	Mic Preamp	Bass Clean

* *With the factory settings, the content of the User patches is the same as that of the Preset patches.*

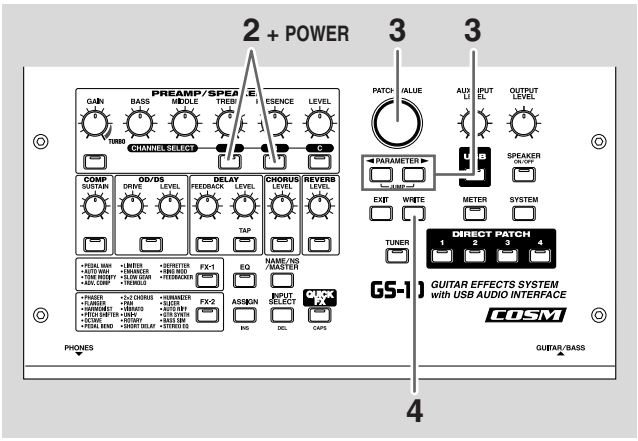
* *Patches with [Mic] appended to the name are for use with mics. Sound from the GUITAR/BASS jack won't be heard.*

* *Patches with [Bass] appended to the name are for use with basses.*

Restoring the Factory Settings (Factory Reset)

Restoring the GS-10 to the settings made at the factory is referred to as "Factory Reset."

Not only can you return all of the settings to the values in effect when the GS-10 was shipped from the factory, you can also specify the range of settings to be reset.



1. **Turn off the power.**

2. **While holding down PREAMP/SPEAKER CHANNEL SELECT [A] and [B], turn on the power.**

   The Factory Reset range setting screen appears in the display.

Factory Reset range

* *To cancel Factory Reset, press [EXIT].*

3. **Press PARAMETER [◄] [►] to move the cursor, and rotate the PATCH/VALUE dial to specify the range of settings you want to restore to factory settings.**

   System:

   System parameters, Harmonist scales, Auto Riff phrases, and Preamp/Speaker, Overdrive/Distortion, and Wah Custom Edit parameter settings.

   U001–U100:

   Settings for Patch Number U001 through U100.

4. **If you want to proceed with the factory reset, press [ENTER].**

   The specified range of data will be returned, and return to the Play screen.

Factory Settings

Tuner

Tuner Pitch:	A= 440 Hz
Tuner Output:	Bypass
Output Select	
OUTPUT Select:	Line/Phones

Direct Patch

Direct Patch 1/2/3/4:	U001/U002/U003/U004

System

LCD Contrast:	16
Patch Extent:	P200
Assign Hold:	On
Knob Mode:	Immediate
EXP PDL Func:	Auto
CTL1 Func:	Assign 1-8
CTL2 Func:	Assign 1-8

MIDI

RX Channel:	1
Omni Mode:	Omni On
TX Channel:	Rx
Device ID:	17
Sync Clock:	Auto
Remote Ctrl:	Advanced
KnobCtrlOut:	On
PC Out:	On
EXP PDL Out:	CC#7
CTL1 Out:	Off
CTL2 Out:	Off
Map Select:	Fix

USB

Output Level:	100
Input Level:	100
Monitor Cmd:	Disable
Dir Monitor:	On
Output Mode:	Stereo (L/R)
Driver Mode:	Advanced
Std.Drv Func:	Audio

Others

Speaker ON/OFF:	ON
Mic Gain:	50

Roland Exclusive Messages

1. Data Format for Exclusive Messages

Roland's MIDI implementation uses the following data format for all Exclusive messages (type IV):

Byte	Description
F0H	Exclusive Status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
CMD	Command ID
[BODY]	Main data
F7H	End of exclusive

•MIDI status: F0H, F7H

An Exclusive message must be flanked by a pair of status codes, starting with a Manufacturer ID immediately after F0H (MIDI version 1.0).

•Manufacturer ID: 41H

The Manufacturer ID identifies the manufacturer of a MIDI instrument that sends an Exclusive message. Value 41H represents Roland's Manufacturer ID.

•Device ID: DEV

The Device ID contains a unique value that identifies individual devices in the implementation of several MIDI instruments. It is usually set to 00H–0FH, a value smaller by one than that of a basic channel, but value 00H–1FH may be used for a device with several basic channels.

•Model ID: MDL

The Model ID contains a value that identifies one model from another. Different models, however, may share an identical Model ID if they handle similar data.

The Model ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Model IDs, each representing a unique model:

01H
02H
03H
00H, 01H
00H, 02H
00H, 00H, 01H

•Command ID: CMD

The Command ID indicates the function of an Exclusive message. The Command ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Command IDs, each representing a unique function:

01H
02H
03H
00H, 01H
00H, 02H
00H, 00H, 01H

•Main data: BODY

This field contains a message to be exchanged across an interface. The exact data size and content will vary with the Model ID and Command ID.

2. Address-mapped Data Transfer

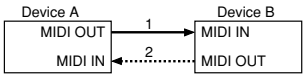
Address mapping is a technique for transferring messages conforming to the data format given in Section 1. It assigns a series of memory-resident records—waveform and tone data, switch status, and parameters, for example, to specific locations in a machine-dependent address space, thereby allowing access to data residing at the address a message specifies.

Address-mapped data transfer is therefore independent of models and data categories. This technique allows use of two different transfer procedures: one-way transfer and handshake transfer.

•One-way transfer procedure (See Section 3 for details.)

This procedure is suited to the transfer of a small amount of data. It sends out an Exclusive message completely independent of the receiving device's status.

Connection Diagram

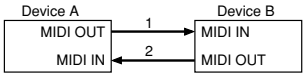


Connection at point 2 is essential for "Request data" procedures. (See Section 3.)

•Handshake-transfer procedure (This device does not use this procedure)

This procedure initiates a predetermined transfer sequence (handshaking) across the interface before data transfer takes place. Handshaking ensures that reliability and transfer speed are high enough to handle a large amount of data.

Connection Diagram



Connection at points 1 and 2 is essential.

Notes on the above procedures

** There are separate Command IDs for different transfer procedures.*

** Devices A and B cannot exchange data unless they use the same transfer procedure, share identical Device ID and Model ID, and are ready for communication.*

3. One-way Transfer Procedure

This procedure sends out data until it has all been sent and is used when the messages are so short that answerbacks need not be checked.
For longer messages, however, the receiving device must acquire each message in time with the transfer sequence, which inserts 20 milliseconds intervals.

Types of Messages

Message	Command ID
Request data 1	RQ1 (11H)
Data set 1	DT1 (12H)

•Request data #1: RQ1 (11H) (This device does not use this procedure)

This message is sent out when there is a need to acquire data from a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of data required.
On receiving an RQ1 message, the remote device checks its memory for the data address and size that satisfy the request.
If it finds them and is ready for communication, the device will transmit a "Data set 1 (DT1)" message, which contains the requested data. Otherwise, the device won't send out anything.

Byte	Description
F0H	Exclusive Status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
11H	Command ID
aaH	Address MSB
|	|
|	|
	LSB
ssH	Size MSB
|	|
|	|
	LSB
sum	Check sum
F7H	End of exclusive

** The size of the requested data does not indicate the number of bytes that will make up a DT1 message, but represents the address fields where the requested data resides.*

** Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.*

** The same number of bytes comprises address and size data, which, however, vary with the Model ID.*

** The error-checking process uses a checksum that provides a bit pattern where the last 7 bits are zero when values for an address, size, and that checksum are summed.*

•Data set 1: DT1 (12H)

This message corresponds to the actual data transfer process.
Because every byte in the data is assigned a unique address, a DT1 message can convey the starting address of one or more bits of data as well as a series of data formatted in an address-dependent order.

The MIDI standards inhibit non real-time messages from interrupting an Exclusive one. This fact is inconvenient for devices that support a "soft-thru" function. To maintain compatibility with such devices, Roland has limited the DT1 to 256 bytes so that an excessively long message is sent out in separate 'segments'.

Byte	Description
F0H	Exclusive Status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
12H	Command ID
aaH	Address MSB
|	|
|	|
	LSB
ddH	Data MSB
|	|
|	|
	LSB
sum	Check sum
F7H	End of exclusive

** A DT1 message is capable of providing only the valid data among those specified by an RQ1 message.*

** Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.*

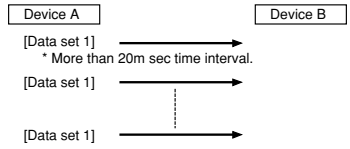
** The number of bytes comprising address data varies from one Model ID to another.*

** The error-checking process uses a checksum that provides a bit pattern where the last 7 bits are zero when values for an address, size, and that checksum are summed.*

•Example of Message Transactions

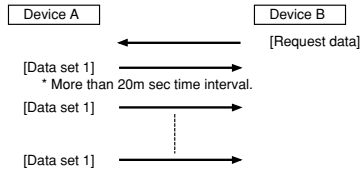
•Device A sending data to Device B

Transfer of a DT1 message is all that takes place.



•Device B requesting data from Device A

Device B sends an RQ1 message to Device A.
Checking the message, Device A sends a DT1 message back to Device B.



MIDI Implementation

Model: **GS-10**
Date: **Jul. 15, 2003**
Version: **1.00**

1. RECOGNIZED RECEIVE DATA

■CHANNEL VOICE MESSAGE

●Control Change

Status	Second	Third
BnH	ccH	vvH

n = MIDI Channel Number:	0H - FH (ch.1 - ch.16)
cc = Controller Number:	00H, 20H (0, 32)
	01H - 1FH (1 - 31)
	40H - 5FH (64 - 95)
vv = Value:	00H - 7FH (0 - 127)

* Control numbers 00H and 20H are recognized as Bank Select messages.

00H:	For values of 01H or lower, the Program Change Map will be switched according to the value. For values of 02H or higher, the received data will be ignored.
20H:	The received data will be ignored, regardless of the value.

* By specifying this as a Source for "Assign" (p. 60) you can use these messages to control a Target.

●Program Change

Status	Second
CnH	ppH

n = MIDI Channel Number:	0H - FH (ch.1 - ch.16)
pp = Program Number:	00H - 7FH (No.1 - No.128)

* Patches will be selected according to the program number that is received.
* There are two Program Change Maps which are referenced when selecting programs, and these are switched by Bank Select messages.

■SYSTEM REALTIME MESSAGE

●Timing Clock

Status
F8H

●Active Sensing

Status
FEH

* When an Active Sensing message is received, the interval of all subsequent messages will begin to be monitored. If an interval greater than 400 msec. between messages, the display will indicate "MIDI Off Line!"

■SYSTEM EXCLUSIVE MESSAGE

Status	Data Byte	Status
F0H	iiH ddH ... eeH	F7H

F0H =	System Exclusive	
ii =	Manufacturer ID:	41H (Roland)
dd ... ee =	Data:	00H - 7FH (0 -127)
F7H =	EOX (End of Exclusive/System common)	

* For more details, please refer to "Roland Exclusive Message."

2. TRANSMITTED DATA

■CHANNEL VOICE MESSAGE

●Control Change

Status	Second	Third
BnH	ccH	vvH

n = MIDI Channel Number:	0H - FH (ch.1 - ch.16)
cc = Controller Number:	00H, 20H (0, 32)
	01H - 1FH (1 - 31)
	21H - 5FH (33 - 95)
vv = Value:	00H - 7FH (0 - 127)

* If you set up a system parameter "MIDI PC Out" for "On," Bank Select (00H, 20H) is transmitted when switching patch.
* If you set up a control change number at a system parameter "MIDI EXP Out," control change information is transmitted when operating an external EXP pedal.
* If you set up a control change number at a system parameter "MIDI CTL 1 Out," control change information is transmitted when operating an external CTL pedal.
* If you set up a control change number at a system parameter "MIDI CTL 2 Out," control change information is transmitted when operating an external CTL pedal.

●Program Change

Status	Second
CnH	ppH

n = MIDI Channel Number:	0H - FH (ch.1 - ch.16)
pp = Program Number:	00H - 7FH (No.1 - No.128)

* If you set up a system parameter "MIDI PC Out" for "On," program change information is transmitted when switching patch.

■SYSTEM REALTIME MESSAGE

●Start

Status
FAH

●Stop

Status
FCH

■SYSTEM EXCLUSIVE MESSAGE

Status	Data Byte	Status
F0H	iiH ddH ... eeH	F7H

F0H =	System Exclusive	
ii =	Manufacturer ID:	41H (Roland)
dd ... ee =	Data:	00H - 7FH (0 -127)
F7H =	EOX (End of Exclusive/System common)	

* For more details, please refer to "Roland Exclusive Message."

●MIDI Machine Control (MMC)

F0H 7FH 7FH 06H com F7H

F0H =	System Exclusive
7FH =	ID Number (Universal Realtime Message)
7FH =	Device ID (Broadcast)
06H =	Sub ID#1(Machine Control Command)
com =	Sub ID#2(MMC Command)
F7H =	EOX (End of Exclusive/System common)

* "com" (MMC Command) that I transmit with GS-10 is following.

01H	Stop
02H	Play
44H 06H 01H 00H 00H 00H 00H 00H	RESET
06H	REC

3. EXCLUSICE COMMUNICATION

On the GS-10, exclusive messages can be used as follows. - Transmit/receive GS-10 system/ patch data.
The model ID for GS-10 exclusive messages is 00H 63H, and you can set up the device ID at 00H–1FH.

■ONE WAY COMMUNICATION

●Request Data 1 RQ1(11H)

F0H 41H dev 00H 63H 11H aaH bbH ccH ddH ssH ttH uuH vvH sum F7H

F0H =	Exclusive Status	
41H =	Manufacturer ID	(Roland)
dev =	Device ID	(Dev=00H-1FH)
00H =	Model ID	MSB (GS-10)
63H =	Model ID	LSB (GS-10)
11H =	Command ID	(RQ1)
aaH =	Address	MSB
bbH =	Address	:
ccH =	Address	:
ddH =	Address	LSB
ssH =	Size	MSB
ttH =	Size	:
uuH =	Size	:
vvH =	Size	LSB
sum =	Checksum	
F7H =	EOX	(End of System Exclusive)

* This message can only be received, and is not transmitted from the GS-10.

* When transmitting large Size values spanning fragmented addresses, the data can be transmitted only to those addresses that are contiguous.

●Data Set 1 DT1(12H)

F0H 41H dev 00H 63H 12H aaH bbH ccH ddH eeH ... ffH sum F7H

F0H =	Exclusive Status	
41H =	Manufacturer ID	(Roland)
dev =	Device ID	(dev = 00H-1FH)
00H =	Model ID	MSB (GS-10)
63H =	Model ID	LSB (GS-10)
12H =	Command ID	(DT1)
aaH =	Address	MSB
bbH =	Address	:
ccH =	Address	:
ddH =	Address	LSB
eeH =	Data	
: =	:	
ffH =	Data	
sum =	Checksum	
F7H =	EOX	(End of System Exclusive)

* When transmitting large amounts of data spanning fragmented addresses, the data can be transmitted only to those addresses that are contiguous.

●Inquiry Message

❍Identity Request

F0H 7EH 10H 06H 01H F7H

F0H =	Exclusive Status
7EH =	ID Number
10H =	Device ID
06H =	Sub ID#1
01H =	Sub ID#2
F7H =	EOX (End of System Exclusive)

* The 7FH (Broadcast) device ID is also supported.

* When an Identity Request is received, the GS-10 will transmitted the following Identity Reply.

❍Identity Reply

F0H 7EH 10H 06H 02H 41H 63H 01H 00H 00H 00H 00H 00H 00H F7H

F0H=	Exclusive Status	
7EH=	ID Number (Universal Non-realtime Message)	
10H=	Device ID	
06H=	Sub ID#1	
02H=	Sub ID#2	
41H=	ID Number	(Roland)
63H 01H=	Device Family Code	
00H 00H=	Device Family Number Code	
00H 00H 00H 00H=	Software Revision Level	
F7H=	EOX (End of System Exclusive)	

* When an Identity Request is received, the GS-10 will transmitted the following Identity Reply.

4. PARAMETER ADDRESS MAP

The address and size are displayed under 7-bit hexadecimal notation.

Address	MSB			LSB
Binary	0aaa aaaa	0bbb bbbb	0ccc cccc	0ddd dddd
7-bit Hexadecimal	AA	BB	CC	DD

Size	MSB			LSB
Binary	0sss ssss	0ttt tttt	0uuu uuuu	0vvv vvvv
7-bit Hexadecimal	SS	TT	UU	VV

Address Block Map

Address	Block	Sub Block	Note
00 00 00 00	SYSTEM	TUNER	... Individual *Refer to "Table TUNER"
01 00 00 00		OUTPUT	... Individual *Refer to "Table OUTPUT"
01 01 00 00		DIRECT PATCH	... Individual *Refer to "Table DIRECT PATCH"
01 02 00 00		MIC	... Individual *Refer to "Table MIC"
01 03 00 00		SYSTEM	... Individual *Refer to "Table SYSTEM"
01 04 00 00		MIDI	... Individual *Refer to "Table MIDI"
01 05 00 00		METER	... Individual *Refer to "Table METER"
02 00 00 00		USB Setting	... Individual *Refer to "Table USB Setting"
03 00 00 00		HARMONIST User Scale	... Individual *Refer to "Table HARMONIST"
03 01 00 00		AUTO RIFF User Phrase	... Individual *Refer to "Table AUTO RIFF"
03 02 00 00		AMP Customize	... Individual *Refer to "Table AMP"
03 03 00 00		SPEAKER Customize	... Individual *Refer to "Table SPEAKER"
03 04 00 00		OD/DS Customize	... Individual *Refer to "Table OD/DS"
03 05 00 00		WAH Customize	... Individual *Refer to "Table WAH"
04 00 00 00	Quick Fx	ROM Area (Data)	... Read Only, Individual *Refer to "Table Quick Fx Data"
05 00 00 00		ROM Area (Name)	... Read Only, Individual *Refer to "Table Quick Fx Name"
06 00 00 00	User Patch	Patch 001	... Individual *Refer to "Table Patch"
06 01 00 00		Patch 002	
:		:	
06 62 00 00		Patch 099	
06 63 00 00		Patch 100	
07 00 00 00	ROM Patch	Patch 101	... Read Only, Individual *Refer to "Table Patch"
07 01 00 00		Patch 102	
:		:	
07 62 00 00		Patch 199	
07 63 00 00		Patch 200	
08 00 00 00	Temporary Buffer		... Bulk *Refer to "Table Patch"
09 00 00 00	Temporary Buffer		... Individual *Refer to "Table Patch"
0A 00 00 00	Patch Change		... Individual *Refer to "Table Patch Change"
0A 01 00 00	Patch Write		... Individual *Refer to "Table Patch Write"
0A 02 00 00	Current Patch		... Read Only, Individual *Refer to "Table Current Patch"
0A 03 00 00	Patch Initialize		... Individual *Refer to "Table Patch Initialize"
0A 04 00 00	AMP Ch Copy		... Individual *Refer to "Table AMP Ch Copy"
0B 00 00 00	Quick Fx Number		... Individual *Refer to "Table Quick Fx Number"
0B 01 00 00	Quick Fx Count		... Read Only, Individual *Refer to "Table Quick Fx Count"
0C 00 00 00	TUNER/METER Mode		... Individual *Refer to "Table TUNER/METER"

Patch Change
When transmitted: Transmits the patch number. DATA: Patch Number
When received: Changes the Patch. DATA: Patch Number
Data size is fixed at 2 bytes.

Upon receiving RQ1, the GS-10 replies with the patch number.
Request size to the GS-10 at this time is fixed at 2 bytes (set at 00 00 00 02).

Patch Write
When received: After the patch is written, the patch is switched to the received patch number, and the Current Patch is output.

Current Patch
When received: Current patch number is transmitted (only when RQ1 is received).

Patch Initialize
When transmitted: DATA: 01H is transmitted.
When received: Initial value is set if DATA: 01H is received.
Data size is fixed at 1 byte.

AMP Ch Copy
When transmitted: Copy-destination amp channel is transmitted.
When received: Copy-destination amp channel is received.
Data size is fixed at 1 byte.

Quick Fx Number
When transmitted: Quick Fx number is transmitted. DATA: Quick Fx Number
When received: Quick Fx number is changed. DATA: Quick Fx Number
Data size is fixed at 1 byte.

Quick Fx Count
Number of Quick Fx in each Effect block.
Request size is fixed at 1 byte (set at 00 00 00 01).

TUNER/METER
Mode 01H: TUNER Mode
02H: METER Mode
00H: exit (Play Mode)
* In TUNER mode: Pitch, Note data transmitted.
* In METER mode: METER POINT data transmitted.

During TAP operations: Delay Time, Delay Time (Fine) transmitted (when setting BPM: Master BPM transmitted).

* The GS-10 can use two methods of communication; Individual Parameter and Bulk Dump.
* Bulk data can be received when the Bulk Load Ready function is accessed in "MIDI:Bulk Load" screen (System mode).
* Although individual data can be received at any time, be sure to appropriately describe the value for one parameter in one packet [F0...F7].
* Do not use an address appended with "#" as the first address.
* Do not specify an odd-number address for Quick Fx Data, SYSTEM:MIDI Program Map.
* Parameters for which Size is 2 or higher should not be separated; make sure these are sent in the same packet.
* Parameters with Size of 2 or higher transmitted from the specified addresses in sequence, from MSB to LSB.
* Output of Quick Fx Name and EFFECT CHAIN is fixed as 12 bytes.

Table TUNER <TUNER>

Address(H)	Size(H)	Data(H)	Parameter	Description
00 00 00 00	00 00 00 01	00 - 0A	TUNER Pitch	00 : 435Hz 01 : 436Hz : 0A : 445Hz
00 00 00 01	00 00 00 01	00 - 01	TUNER Out	00 : Mute 01 : Bypass

Table OUTPUT <SYSTEM: OUTPUT SELECT>

Address(H)	Size(H)	Data(H)	Parameter	Description
01 00 00 00	00 00 00 01	00 - 04	OUTPUT Select	00 : LINE/PHONES 01 : COMBO AMP 02 : STACK AMP 03 : COMBO Return 04 : STACK Return

Table DIRECT PATCH <SYSTEM: DIRECT PATCH>

Address(H)	Size(H)	Data(H)	Parameter	Description
01 01 00 00 01 01 00 01#	00 00 00 02	00 00 - - 01 47	Direct Patch 1	00 00 : U001(User) : 00 63 : U100(User) 00 64 : P101(Preset) : 00 7F : P128(Preset) 01 00 : P129(Preset) : 01 47 : P200(Preset)
01 01 00 02 01 01 00 03#	00 00 00 02	00 00 - - 01 47	Direct Patch 2	00 00 : U001(User) : 00 63 : U100(User) 00 64 : P101(Preset) : 00 7F : P128(Preset) 01 00 : P129(Preset) : 01 47 : P200(Preset)
01 01 00 04 01 01 00 05#	00 00 00 02	00 00 - - 01 47	Direct Patch 3	00 00 : U001(User) : 00 63 : U100(User) 00 64 : P101(Preset) : 00 7F : P128(Preset) 01 00 : P129(Preset) : 01 47 : P200(Preset)
01 01 00 06 01 01 00 07#	00 00 00 02	00 00 - - 01 47	Direct Patch 4	00 00 : U001(User) : 00 63 : U100(User) 00 64 : P101(Preset) : 00 7F : P128(Preset) 01 00 : P129(Preset) : 01 47 : P200(Preset)

Table MIC <SYSTEM: MIC>

Address(H)	Size(H)	Data(H)	Parameter	Description
01 02 00 00	00 00 00 01	00 - 0A	Mic Gain	00 : 0 01 : 10 02 : 20 : 0A : 100

Table SYSTEM <SYSTEM: SYSTEM>

Address(H)	Size(H)	Data(H)	Parameter	Description
01 03 00 00	00 00 00 01	00 - 0F	LCD Contrast	1 - 16
01 03 00 01	00 00 00 01	00 - 01	Speaker Output	00 : OFF 01 : ON
01 03 00 02 01 03 00 03#	00 00 00 02	00 00 - 01 47	Patch Extent	00 00 : 001(User) : 00 63 : 100(User) 00 64 : 101(Preset) : 00 7F : 128(Preset) 01 00 : 129(Preset) : 01 47 : 200(Preset)
01 03 00 04	00 00 00 01	00 - 01	Assign Hold	00 : OFF 01 : ON
01 03 00 05	00 00 00 01	00 - 01	Knob Mode	00 : Immediate 01 : Current Setting
01 03 00 06	00 00 00 01	00 - 05	Exp Pedal Function	00 : Auto 01 : Assign1-8 02 : Foot Volume 03 : Patch Level 04 : Pedal Wah 05 : Pedal Bend
01 03 00 07	00 00 00 01	00 - 0A	CTL1 Function	00 : Assign1-8 01 : TUNER On/Off 02 : Remote Start/Stop 03 : Direct Patch Up 04 : Direct Patch Down 05 : Patch Up 06 : Patch Down 07 : Patch Level Inc1 08 : Patch Level Inc2 09 : Patch Level Dec1 0A : Patch Level Dec2
01 03 00 08	00 00 00 01	00 - 0A	CTL2 Function	00 : Assign1-8 01 : TUNER On/Off 02 : Remote Start/Stop 03 : Direct Patch Up 04 : Direct Patch Down 05 : Patch Up 06 : Patch Down 07 : Patch Level Inc1 08 : Patch Level Inc2 09 : Patch Level Dec1 0A : Patch Level Dec2

Table MIDI <SYSTEM: MIDI>

Address(H)	Size(H)	Data(H)	Parameter	Description
01 04 00 00	00 00 00 01	00 - 0F	MIDI Rx Channel	00 : 1 : 0F : 16
01 04 00 01	00 00 00 01	00 - 01	MIDI Omni Mode	00 : Omni Off 01 : Omni On
01 04 00 02	00 00 00 01	00 - 10	MIDI Tx Channel	00 : 1 : 0F : 16 10 : Rx
01 04 00 03	00 00 00 01	00 - 1F	MIDI Device ID	1 - 32
01 04 00 04	00 00 00 01	00 - 01	MIDI Sync Clock	00 : Auto 01 : Internal
01 04 00 05	00 00 00 01	00 - 02	MIDI Remote Control	00 : Standard 01 : Advanced 02 : MMC
01 04 00 06	00 00 00 01	00 - 01	MIDI Knob Control Out	00 : Off 01 : On
01 04 00 07	00 00 00 01	00 - 01	MIDI PC Out	00 : Off 01 : On
01 04 00 08	00 00 00 01	00 - 5E	MIDI EXP Out	00 : Off 01 : 1 : 1F : 31 20 : 33 : 5E : 95
01 04 00 09	00 00 00 01	00 - 5E	MIDI CTL1 Out	00 : Off 01 : 1 : 1F : 31 20 : 33 : 5E : 95
01 04 00 0A	00 00 00 01	00 - 5E	MIDI CTL2 Out	00 : Off 01 : 1 : 1F : 31 20 : 33 : 5E : 95
01 04 00 0B	00 00 00 01	00 - 01	MIDI Map Select	00 : Fix 01 : Program
--- MIDI Program Map ---				
01 04 10 00 01 04 10 01#	00 00 00 02	00 00 - 01 47	MIDI Program Map B#0 P#1	MIDI Map Select = Program 00 00 : U001(User) : 00 63 : U100(User) 00 64 : P101(Preset) : 00 7F : P128(Preset) 01 00 : P129(Preset) : 01 47 : P200(Preset)
01 04 10 02 01 04 10 03# : 01 04 11 7E 01 04 11 7F# 01 04 12 00 01 04 12 01# : 01 04 13 7E 01 04 13 7F#	00 00 00 02	00 00 - 01 47 00 00 - 01 47 00 00 - 01 47 00 00 - 01 47	MIDI Program Map B#0 P#2 : MIDI Program Map B#0 P#128 MIDI Program Map B#1 P#1 : MIDI Program Map B#1 P#128	

Table METER <SYSTEM: METER>

Address(H)	Size(H)	Data(H)	Parameter	Description
01 05 00 00	00 00 00 01	00 - 0D	METER Point	Input, Effects, USB, Output *Refer to "Table METER Point"

Table USB Setting <USB Setting>

Address(H)	Size(H)	Data(H)	Parameter	Description
02 00 00 00	00 00 00 01	00 - 64	USB/Digital Out	00 : 0 01 : 2 : 64 : 200
02 00 00 01	00 00 00 01	00 - 64	Input Level	0 - 100
02 00 00 02	00 00 00 01	00 - 01	Direct Monitor	00 : Off 01 : On
02 00 00 03	00 00 00 01	00 - 01	Output Mode	00 : Stereo(L/R) 01 : Effect/Direct
02 00 00 04	00 00 00 01	00 - 01	Driver Mode	00 : Standard 01 : Advanced
02 00 00 05	00 00 00 01	00 - 01	Std.Drv Func	00 : Audio 01 : Audio & MIDI
02 00 00 06	00 00 00 01	00 - 01	Monitor Cmd	00 : Disable 01 : Enable

Table HARMONIST <HARMONIST User Scale>

Address(H)	Size(H)	Data(H)	Parameter	Description
--- Scale 1 ---				
03 00 00 00	00 00 00 01	00 - 30	Scale 1 C	*Refer to "Table HR Harmony Note"
03 00 00 01	00 00 00 01	00 - 30	Scale 1 Db	
03 00 00 02	00 00 00 01	00 - 30	Scale 1 D	
03 00 00 03	00 00 00 01	00 - 30	Scale 1 Eb	
03 00 00 04	00 00 00 01	00 - 30	Scale 1 E	
03 00 00 05	00 00 00 01	00 - 30	Scale 1 F	
03 00 00 06	00 00 00 01	00 - 30	Scale 1 F#	
03 00 00 07	00 00 00 01	00 - 30	Scale 1 G	
03 00 00 08	00 00 00 01	00 - 30	Scale 1 Ab	
03 00 00 09	00 00 00 01	00 - 30	Scale 1 A	
03 00 00 0A	00 00 00 01	00 - 30	Scale 1 Bb	
03 00 00 0B	00 00 00 01	00 - 30	Scale 1 B	
--- Scale 2 ---				
03 00 01 00	00 00 00 01	00 - 30	Scale 2 C	*Refer to "Table HR Harmony Note"
03 00 01 01	00 00 00 01	00 - 30	Scale 2 Db	
03 00 01 02	00 00 00 01	00 - 30	Scale 2 D	
03 00 01 03	00 00 00 01	00 - 30	Scale 2 Eb	
03 00 01 04	00 00 00 01	00 - 30	Scale 2 E	
03 00 01 05	00 00 00 01	00 - 30	Scale 2 F	
03 00 01 06	00 00 00 01	00 - 30	Scale 2 F#	
03 00 01 07	00 00 00 01	00 - 30	Scale 2 G	
03 00 01 08	00 00 00 01	00 - 30	Scale 2 Ab	
03 00 01 09	00 00 00 01	00 - 30	Scale 2 A	
03 00 01 0A	00 00 00 01	00 - 30	Scale 2 Bb	
03 00 01 0B	00 00 00 01	00 - 30	Scale 2 B	
--- Scale 3 ---				
03 00 02 00	00 00 00 01	00 - 30	Scale 3 C	*Refer to "Table HR Harmony Note"
03 00 02 01	00 00 00 01	00 - 30	Scale 3 Db	
03 00 02 02	00 00 00 01	00 - 30	Scale 3 D	
03 00 02 03	00 00 00 01	00 - 30	Scale 3 Eb	
03 00 02 04	00 00 00 01	00 - 30	Scale 3 E	
03 00 02 05	00 00 00 01	00 - 30	Scale 3 F	
03 00 02 06	00 00 00 01	00 - 30	Scale 3 F#	
03 00 02 07	00 00 00 01	00 - 30	Scale 3 G	
03 00 02 08	00 00 00 01	00 - 30	Scale 3 Ab	
03 00 02 09	00 00 00 01	00 - 30	Scale 3 A	
03 00 02 0A	00 00 00 01	00 - 30	Scale 3 Bb	
03 00 02 0B	00 00 00 01	00 - 30	Scale 3 B	
--- Scale 4 ---				
03 00 03 00	00 00 00 01	00 - 30	Scale 4 C	*Refer to "Table HR Harmony Note"
03 00 03 01	00 00 00 01	00 - 30	Scale 4 Db	
03 00 03 02	00 00 00 01	00 - 30	Scale 4 D	
03 00 03 03	00 00 00 01	00 - 30	Scale 4 Eb	
03 00 03 04	00 00 00 01	00 - 30	Scale 4 E	
03 00 03 05	00 00 00 01	00 - 30	Scale 4 F	
03 00 03 06	00 00 00 01	00 - 30	Scale 4 F#	
03 00 03 07	00 00 00 01	00 - 30	Scale 4 G	
03 00 03 08	00 00 00 01	00 - 30	Scale 4 Ab	
03 00 03 09	00 00 00 01	00 - 30	Scale 4 A	
03 00 03 0A	00 00 00 01	00 - 30	Scale 4 Bb	
03 00 03 0B	00 00 00 01	00 - 30	Scale 4 B	
--- Scale 5 ---				
03 00 04 00	00 00 00 01	00 - 30	Scale 5 C	*Refer to "Table HR Harmony Note"
03 00 04 01	00 00 00 01	00 - 30	Scale 5 Db	
03 00 04 02	00 00 00 01	00 - 30	Scale 5 D	
03 00 04 03	00 00 00 01	00 - 30	Scale 5 Eb	
03 00 04 04	00 00 00 01	00 - 30	Scale 5 E	
03 00 04 05	00 00 00 01	00 - 30	Scale 5 F	
03 00 04 06	00 00 00 01	00 - 30	Scale 5 F#	
03 00 04 07	00 00 00 01	00 - 30	Scale 5 G	
03 00 04 08	00 00 00 01	00 - 30	Scale 5 Ab	
03 00 04 09	00 00 00 01	00 - 30	Scale 5 A	
03 00 04 0A	00 00 00 01	00 - 30	Scale 5 Bb	
03 00 04 0B	00 00 00 01	00 - 30	Scale 5 B	
--- Scale 6 ---				
03 00 05 00	00 00 00 01	00 - 30	Scale 6 C	*Refer to "Table HR Harmony Note"
03 00 05 01	00 00 00 01	00 - 30	Scale 6 Db	
03 00 05 02	00 00 00 01	00 - 30	Scale 6 D	
03 00 05 03	00 00 00 01	00 - 30	Scale 6 Eb	
03 00 05 04	00 00 00 01	00 - 30	Scale 6 E	
03 00 05 05	00 00 00 01	00 - 30	Scale 6 F	
03 00 05 06	00 00 00 01	00 - 30	Scale 6 F#	
03 00 05 07	00 00 00 01	00 - 30	Scale 6 G	
03 00 05 08	00 00 00 01	00 - 30	Scale 6 Ab	
03 00 05 09	00 00 00 01	00 - 30	Scale 6 A	
03 00 05 0A	00 00 00 01	00 - 30	Scale 6 Bb	
03 00 05 0B	00 00 00 01	00 - 30	Scale 6 B	
--- Scale 7 ---				
03 00 06 00	00 00 00 01	00 - 30	Scale 7 C	*Refer to "Table HR Harmony Note"
03 00 06 01	00 00 00 01	00 - 30	Scale 7 Db	
03 00 06 02	00 00 00 01	00 - 30	Scale 7 D	
03 00 06 03	00 00 00 01	00 - 30	Scale 7 Eb	
03 00 06 04	00 00 00 01	00 - 30	Scale 7 E	
03 00 06 05	00 00 00 01	00 - 30	Scale 7 F	
03 00 06 06	00 00 00 01	00 - 30	Scale 7 F#	
03 00 06 07	00 00 00 01	00 - 30	Scale 7 G	
03 00 06 08	00 00 00 01	00 - 30	Scale 7 Ab	
03 00 06 09	00 00 00 01	00 - 30	Scale 7 A	
03 00 06 0A	00 00 00 01	00 - 30	Scale 7 Bb	
03 00 06 0B	00 00 00 01	00 - 30	Scale 7 B	
--- Scale 8 ---				
03 00 07 00	00 00 00 01	00 - 30	Scale 8 C	*Refer to "Table HR Harmony Note"
03 00 07 01	00 00 00 01	00 - 30	Scale 8 Db	
03 00 07 02	00 00 00 01	00 - 30	Scale 8 D	
03 00 07 03	00 00 00 01	00 - 30	Scale 8 Eb	
03 00 07 04	00 00 00 01	00 - 30	Scale 8 E	
03 00 07 05	00 00 00 01	00 - 30	Scale 8 F	
03 00 07 06	00 00 00 01	00 - 30	Scale 8 F#	
03 00 07 07	00 00 00 01	00 - 30	Scale 8 G	
03 00 07 08	00 00 00 01	00 - 30	Scale 8 Ab	
03 00 07 09	00 00 00 01	00 - 30	Scale 8 A	
03 00 07 0A	00 00 00 01	00 - 30	Scale 8 Bb	
03 00 07 0B	00 00 00 01	00 - 30	Scale 8 B	

```
--- Scale 9 ---
03 00 08 00     00 00 00 01     00 - 30         Scale 9 C       *Refer to "Table HR Harmony Note"
03 00 08 01     00 00 00 01     00 - 30         Scale 9 Db
03 00 08 02     00 00 00 01     00 - 30         Scale 9 D
03 00 08 03     00 00 00 01     00 - 30         Scale 9 Eb
03 00 08 04     00 00 00 01     00 - 30         Scale 9 E
03 00 08 05     00 00 00 01     00 - 30         Scale 9 F
03 00 08 06     00 00 00 01     00 - 30         Scale 9 F#
03 00 08 07     00 00 00 01     00 - 30         Scale 9 G
03 00 08 08     00 00 00 01     00 - 30         Scale 9 Ab
03 00 08 09     00 00 00 01     00 - 30         Scale 9 A
03 00 08 0A     00 00 00 01     00 - 30         Scale 9 Bb
03 00 08 0B     00 00 00 01     00 - 30         Scale 9 B
--- Scale 10 ---
03 00 09 00     00 00 00 01     00 - 30         Scale 10 C      *Refer to "Table HR Harmony Note"
03 00 09 01     00 00 00 01     00 - 30         Scale 10 Db
03 00 09 02     00 00 00 01     00 - 30         Scale 10 D
03 00 09 03     00 00 00 01     00 - 30         Scale 10 Eb
03 00 09 04     00 00 00 01     00 - 30         Scale 10 E
03 00 09 05     00 00 00 01     00 - 30         Scale 10 F
03 00 09 06     00 00 00 01     00 - 30         Scale 10 F#
03 00 09 07     00 00 00 01     00 - 30         Scale 10 G
03 00 09 08     00 00 00 01     00 - 30         Scale 10 Ab
03 00 09 09     00 00 00 01     00 - 30         Scale 10 A
03 00 09 0A     00 00 00 01     00 - 30         Scale 10 Bb
03 00 09 0B     00 00 00 01     00 - 30         Scale 10 B
--- Scale 11 ---
03 00 0A 00     00 00 00 01     00 - 30         Scale 11 C      *Refer to "Table HR Harmony Note"
03 00 0A 01     00 00 00 01     00 - 30         Scale 11 Db
03 00 0A 02     00 00 00 01     00 - 30         Scale 11 D
03 00 0A 03     00 00 00 01     00 - 30         Scale 11 Eb
03 00 0A 04     00 00 00 01     00 - 30         Scale 11 E
03 00 0A 05     00 00 00 01     00 - 30         Scale 11 F
03 00 0A 06     00 00 00 01     00 - 30         Scale 11 F#
03 00 0A 07     00 00 00 01     00 - 30         Scale 11 G
03 00 0A 08     00 00 00 01     00 - 30         Scale 11 Ab
03 00 0A 09     00 00 00 01     00 - 30         Scale 11 A
03 00 0A 0A     00 00 00 01     00 - 30         Scale 11 Bb
03 00 0A 0B     00 00 00 01     00 - 30         Scale 11 B
--- Scale 12 ---
03 00 0B 00     00 00 00 01     00 - 30         Scale 12 C      *Refer to "Table HR Harmony Note"
03 00 0B 01     00 00 00 01     00 - 30         Scale 12 Db
03 00 0B 02     00 00 00 01     00 - 30         Scale 12 D
03 00 0B 03     00 00 00 01     00 - 30         Scale 12 Eb
03 00 0B 04     00 00 00 01     00 - 30         Scale 12 E
03 00 0B 05     00 00 00 01     00 - 30         Scale 12 F
03 00 0B 06     00 00 00 01     00 - 30         Scale 12 F#
03 00 0B 07     00 00 00 01     00 - 30         Scale 12 G
03 00 0B 08     00 00 00 01     00 - 30         Scale 12 Ab
03 00 0B 09     00 00 00 01     00 - 30         Scale 12 A
03 00 0B 0A     00 00 00 01     00 - 30         Scale 12 Bb
03 00 0B 0B     00 00 00 01     00 - 30         Scale 12 B
--- Scale 13 ---
03 00 0C 00     00 00 00 01     00 - 30         Scale 13 C      *Refer to "Table HR Harmony Note"
03 00 0C 01     00 00 00 01     00 - 30         Scale 13 Db
03 00 0C 02     00 00 00 01     00 - 30         Scale 13 D
03 00 0C 03     00 00 00 01     00 - 30         Scale 13 Eb
03 00 0C 04     00 00 00 01     00 - 30         Scale 13 E
03 00 0C 05     00 00 00 01     00 - 30         Scale 13 F
03 00 0C 06     00 00 00 01     00 - 30         Scale 13 F#
03 00 0C 07     00 00 00 01     00 - 30         Scale 13 G
03 00 0C 08     00 00 00 01     00 - 30         Scale 13 Ab
03 00 0C 09     00 00 00 01     00 - 30         Scale 13 A
03 00 0C 0A     00 00 00 01     00 - 30         Scale 13 Bb
03 00 0C 0B     00 00 00 01     00 - 30         Scale 13 B
--- Scale 14 ---
03 00 0D 00     00 00 00 01     00 - 30         Scale 14 C      *Refer to "Table HR Harmony Note"
03 00 0D 01     00 00 00 01     00 - 30         Scale 14 Db
03 00 0D 02     00 00 00 01     00 - 30         Scale 14 D
03 00 0D 03     00 00 00 01     00 - 30         Scale 14 Eb
03 00 0D 04     00 00 00 01     00 - 30         Scale 14 E
03 00 0D 05     00 00 00 01     00 - 30         Scale 14 F
03 00 0D 06     00 00 00 01     00 - 30         Scale 14 F#
03 00 0D 07     00 00 00 01     00 - 30         Scale 14 G
03 00 0D 08     00 00 00 01     00 - 30         Scale 14 Ab
03 00 0D 09     00 00 00 01     00 - 30         Scale 14 A
03 00 0D 0A     00 00 00 01     00 - 30         Scale 14 Bb
03 00 0D 0B     00 00 00 01     00 - 30         Scale 14 B
--- Scale 15 ---
03 00 0E 00     00 00 00 01     00 - 30         Scale 15 C      *Refer to "Table HR Harmony Note"
03 00 0E 01     00 00 00 01     00 - 30         Scale 15 Db
03 00 0E 02     00 00 00 01     00 - 30         Scale 15 D
03 00 0E 03     00 00 00 01     00 - 30         Scale 15 Eb
03 00 0E 04     00 00 00 01     00 - 30         Scale 15 E
03 00 0E 05     00 00 00 01     00 - 30         Scale 15 F
03 00 0E 06     00 00 00 01     00 - 30         Scale 15 F#
03 00 0E 07     00 00 00 01     00 - 30         Scale 15 G
03 00 0E 08     00 00 00 01     00 - 30         Scale 15 Ab
03 00 0E 09     00 00 00 01     00 - 30         Scale 15 A
03 00 0E 0A     00 00 00 01     00 - 30         Scale 15 Bb
03 00 0E 0B     00 00 00 01     00 - 30         Scale 15 B
--- Scale 16 ---
03 00 0F 00     00 00 00 01     00 - 30         Scale 16 C      *Refer to "Table HR Harmony Note"
03 00 0F 01     00 00 00 01     00 - 30         Scale 16 Db
03 00 0F 02     00 00 00 01     00 - 30         Scale 16 D
03 00 0F 03     00 00 00 01     00 - 30         Scale 16 Eb
03 00 0F 04     00 00 00 01     00 - 30         Scale 16 E
03 00 0F 05     00 00 00 01     00 - 30         Scale 16 F
03 00 0F 06     00 00 00 01     00 - 30         Scale 16 F#
03 00 0F 07     00 00 00 01     00 - 30         Scale 16 G
03 00 0F 08     00 00 00 01     00 - 30         Scale 16 Ab
03 00 0F 09     00 00 00 01     00 - 30         Scale 16 A
03 00 0F 0A     00 00 00 01     00 - 30         Scale 16 Bb
03 00 0F 0B     00 00 00 01     00 - 30         Scale 16 B
--- Scale 17 ---
03 00 10 00     00 00 00 01     00 - 30         Scale 17 C      *Refer to "Table HR Harmony Note"
03 00 10 01     00 00 00 01     00 - 30         Scale 17 Db
03 00 10 02     00 00 00 01     00 - 30         Scale 17 D
03 00 10 03     00 00 00 01     00 - 30         Scale 17 Eb
03 00 10 04     00 00 00 01     00 - 30         Scale 17 E
03 00 10 05     00 00 00 01     00 - 30         Scale 17 F
03 00 10 06     00 00 00 01     00 - 30         Scale 17 F#
03 00 10 07     00 00 00 01     00 - 30         Scale 17 G
03 00 10 08     00 00 00 01     00 - 30         Scale 17 Ab
03 00 10 09     00 00 00 01     00 - 30         Scale 17 A
03 00 10 0A     00 00 00 01     00 - 30         Scale 17 Bb
03 00 10 0B     00 00 00 01     00 - 30         Scale 17 B
```

```
--- Scale 18 ---
03 00 11 00     00 00 00 01     00 - 30         Scale 18 C      *Refer to "Table HR Harmony Note"
03 00 11 01     00 00 00 01     00 - 30         Scale 18 Db
03 00 11 02     00 00 00 01     00 - 30         Scale 18 D
03 00 11 03     00 00 00 01     00 - 30         Scale 18 Eb
03 00 11 04     00 00 00 01     00 - 30         Scale 18 E
03 00 11 05     00 00 00 01     00 - 30         Scale 18 F
03 00 11 06     00 00 00 01     00 - 30         Scale 18 F#
03 00 11 07     00 00 00 01     00 - 30         Scale 18 G
03 00 11 08     00 00 00 01     00 - 30         Scale 18 Ab
03 00 11 09     00 00 00 01     00 - 30         Scale 18 A
03 00 11 0A     00 00 00 01     00 - 30         Scale 18 Bb
03 00 11 0B     00 00 00 01     00 - 30         Scale 18 B
--- Scale 19 ---
03 00 12 00     00 00 00 01     00 - 30         Scale 19 C      *Refer to "Table HR Harmony Note"
03 00 12 01     00 00 00 01     00 - 30         Scale 19 Db
03 00 12 02     00 00 00 01     00 - 30         Scale 19 D
03 00 12 03     00 00 00 01     00 - 30         Scale 19 Eb
03 00 12 04     00 00 00 01     00 - 30         Scale 19 E
03 00 12 05     00 00 00 01     00 - 30         Scale 19 F
03 00 12 06     00 00 00 01     00 - 30         Scale 19 F#
03 00 12 07     00 00 00 01     00 - 30         Scale 19 G
03 00 12 08     00 00 00 01     00 - 30         Scale 19 Ab
03 00 12 09     00 00 00 01     00 - 30         Scale 19 A
03 00 12 0A     00 00 00 01     00 - 30         Scale 19 Bb
03 00 12 0B     00 00 00 01     00 - 30         Scale 19 B
--- Scale 20 ---
03 00 13 00     00 00 00 01     00 - 30         Scale 20 C      *Refer to "Table HR Harmony Note"
03 00 13 01     00 00 00 01     00 - 30         Scale 20 Db
03 00 13 02     00 00 00 01     00 - 30         Scale 20 D
03 00 13 03     00 00 00 01     00 - 30         Scale 20 Eb
03 00 13 04     00 00 00 01     00 - 30         Scale 20 E
03 00 13 05     00 00 00 01     00 - 30         Scale 20 F
03 00 13 06     00 00 00 01     00 - 30         Scale 20 F#
03 00 13 07     00 00 00 01     00 - 30         Scale 20 G
03 00 13 08     00 00 00 01     00 - 30         Scale 20 Ab
03 00 13 09     00 00 00 01     00 - 30         Scale 20 A
03 00 13 0A     00 00 00 01     00 - 30         Scale 20 Bb
03 00 13 0B     00 00 00 01     00 - 30         Scale 20 B
--- Scale 21 ---
03 00 14 00     00 00 00 01     00 - 30         Scale 21 C      *Refer to "Table HR Harmony Note"
03 00 14 01     00 00 00 01     00 - 30         Scale 21 Db
03 00 14 02     00 00 00 01     00 - 30         Scale 21 D
03 00 14 03     00 00 00 01     00 - 30         Scale 21 Eb
03 00 14 04     00 00 00 01     00 - 30         Scale 21 E
03 00 14 05     00 00 00 01     00 - 30         Scale 21 F
03 00 14 06     00 00 00 01     00 - 30         Scale 21 F#
03 00 14 07     00 00 00 01     00 - 30         Scale 21 G
03 00 14 08     00 00 00 01     00 - 30         Scale 21 Ab
03 00 14 09     00 00 00 01     00 - 30         Scale 21 A
03 00 14 0A     00 00 00 01     00 - 30         Scale 21 Bb
03 00 14 0B     00 00 00 01     00 - 30         Scale 21 B
--- Scale 22 ---
03 00 15 00     00 00 00 01     00 - 30         Scale 22 C      *Refer to "Table HR Harmony Note"
03 00 15 01     00 00 00 01     00 - 30         Scale 22 Db
03 00 15 02     00 00 00 01     00 - 30         Scale 22 D
03 00 15 03     00 00 00 01     00 - 30         Scale 22 Eb
03 00 15 04     00 00 00 01     00 - 30         Scale 22 E
03 00 15 05     00 00 00 01     00 - 30         Scale 22 F
03 00 15 06     00 00 00 01     00 - 30         Scale 22 F#
03 00 15 07     00 00 00 01     00 - 30         Scale 22 G
03 00 15 08     00 00 00 01     00 - 30         Scale 22 Ab
03 00 15 09     00 00 00 01     00 - 30         Scale 22 A
03 00 15 0A     00 00 00 01     00 - 30         Scale 22 Bb
03 00 15 0B     00 00 00 01     00 - 30         Scale 22 B
--- Scale 23 ---
03 00 16 00     00 00 00 01     00 - 30         Scale 23 C      *Refer to "Table HR Harmony Note"
03 00 16 01     00 00 00 01     00 - 30         Scale 23 Db
03 00 16 02     00 00 00 01     00 - 30         Scale 23 D
03 00 16 03     00 00 00 01     00 - 30         Scale 23 Eb
03 00 16 04     00 00 00 01     00 - 30         Scale 23 E
03 00 16 05     00 00 00 01     00 - 30         Scale 23 F
03 00 16 06     00 00 00 01     00 - 30         Scale 23 F#
03 00 16 07     00 00 00 01     00 - 30         Scale 23 G
03 00 16 08     00 00 00 01     00 - 30         Scale 23 Ab
03 00 16 09     00 00 00 01     00 - 30         Scale 23 A
03 00 16 0A     00 00 00 01     00 - 30         Scale 23 Bb
03 00 16 0B     00 00 00 01     00 - 30         Scale 23 B
--- Scale 24 ---
03 00 17 00     00 00 00 01     00 - 30         Scale 24 C      *Refer to "Table HR Harmony Note"
03 00 17 01     00 00 00 01     00 - 30         Scale 24 Db
03 00 17 02     00 00 00 01     00 - 30         Scale 24 D
03 00 17 03     00 00 00 01     00 - 30         Scale 24 Eb
03 00 17 04     00 00 00 01     00 - 30         Scale 24 E
03 00 17 05     00 00 00 01     00 - 30         Scale 24 F
03 00 17 06     00 00 00 01     00 - 30         Scale 24 F#
03 00 17 07     00 00 00 01     00 - 30         Scale 24 G
03 00 17 08     00 00 00 01     00 - 30         Scale 24 Ab
03 00 17 09     00 00 00 01     00 - 30         Scale 24 A
03 00 17 0A     00 00 00 01     00 - 30         Scale 24 Bb
03 00 17 0B     00 00 00 01     00 - 30         Scale 24 B
--- Scale 25 ---
03 00 18 00     00 00 00 01     00 - 30         Scale 25 C      *Refer to "Table HR Harmony Note"
03 00 18 01     00 00 00 01     00 - 30         Scale 25 Db
03 00 18 02     00 00 00 01     00 - 30         Scale 25 D
03 00 18 03     00 00 00 01     00 - 30         Scale 25 Eb
03 00 18 04     00 00 00 01     00 - 30         Scale 25 E
03 00 18 05     00 00 00 01     00 - 30         Scale 25 F
03 00 18 06     00 00 00 01     00 - 30         Scale 25 F#
03 00 18 07     00 00 00 01     00 - 30         Scale 25 G
03 00 18 08     00 00 00 01     00 - 30         Scale 25 Ab
03 00 18 09     00 00 00 01     00 - 30         Scale 25 A
03 00 18 0A     00 00 00 01     00 - 30         Scale 25 Bb
03 00 18 0B     00 00 00 01     00 - 30         Scale 25 B
--- Scale 26 ---
03 00 19 00     00 00 00 01     00 - 30         Scale 26 C      *Refer to "Table HR Harmony Note"
03 00 19 01     00 00 00 01     00 - 30         Scale 26 Db
03 00 19 02     00 00 00 01     00 - 30         Scale 26 D
03 00 19 03     00 00 00 01     00 - 30         Scale 26 Eb
03 00 19 04     00 00 00 01     00 - 30         Scale 26 E
03 00 19 05     00 00 00 01     00 - 30         Scale 26 F
03 00 19 06     00 00 00 01     00 - 30         Scale 26 F#
03 00 19 07     00 00 00 01     00 - 30         Scale 26 G
03 00 19 08     00 00 00 01     00 - 30         Scale 26 Ab
03 00 19 09     00 00 00 01     00 - 30         Scale 26 A
03 00 19 0A     00 00 00 01     00 - 30         Scale 26 Bb
03 00 19 0B     00 00 00 01     00 - 30         Scale 26 B
```

```
--- Scale 27 ---
03 00 1A 00     00 00 00 01     00 - 30         Scale 27 C      *Refer to "Table HR Harmony Note"
03 00 1A 01     00 00 00 01     00 - 30         Scale 27 Db
03 00 1A 02     00 00 00 01     00 - 30         Scale 27 D
03 00 1A 03     00 00 00 01     00 - 30         Scale 27 Eb
03 00 1A 04     00 00 00 01     00 - 30         Scale 27 E
03 00 1A 05     00 00 00 01     00 - 30         Scale 27 F
03 00 1A 06     00 00 00 01     00 - 30         Scale 27 F#
03 00 1A 07     00 00 00 01     00 - 30         Scale 27 G
03 00 1A 08     00 00 00 01     00 - 30         Scale 27 Ab
03 00 1A 09     00 00 00 01     00 - 30         Scale 27 A
03 00 1A 0A     00 00 00 01     00 - 30         Scale 27 Bb
03 00 1A 0B     00 00 00 01     00 - 30         Scale 27 B
--- Scale 28 ---
03 00 1B 00     00 00 00 01     00 - 30         Scale 28 C      *Refer to "Table HR Harmony Note"
03 00 1B 01     00 00 00 01     00 - 30         Scale 28 Db
03 00 1B 02     00 00 00 01     00 - 30         Scale 28 D
03 00 1B 03     00 00 00 01     00 - 30         Scale 28 Eb
03 00 1B 04     00 00 00 01     00 - 30         Scale 28 E
03 00 1B 05     00 00 00 01     00 - 30         Scale 28 F
03 00 1B 06     00 00 00 01     00 - 30         Scale 28 F#
03 00 1B 07     00 00 00 01     00 - 30         Scale 28 G
03 00 1B 08     00 00 00 01     00 - 30         Scale 28 Ab
03 00 1B 09     00 00 00 01     00 - 30         Scale 28 A
03 00 1B 0A     00 00 00 01     00 - 30         Scale 28 Bb
03 00 1B 0B     00 00 00 01     00 - 30         Scale 28 B
--- Scale 29 ---
03 00 1C 00     00 00 00 01     00 - 30         Scale 29 C      *Refer to "Table HR Harmony Note"
03 00 1C 01     00 00 00 01     00 - 30         Scale 29 Db
03 00 1C 02     00 00 00 01     00 - 30         Scale 29 D
03 00 1C 03     00 00 00 01     00 - 30         Scale 29 Eb
03 00 1C 04     00 00 00 01     00 - 30         Scale 29 E
03 00 1C 05     00 00 00 01     00 - 30         Scale 29 F
03 00 1C 06     00 00 00 01     00 - 30         Scale 29 F#
03 00 1C 07     00 00 00 01     00 - 30         Scale 29 G
03 00 1C 08     00 00 00 01     00 - 30         Scale 29 Ab
03 00 1C 09     00 00 00 01     00 - 30         Scale 29 A
03 00 1C 0A     00 00 00 01     00 - 30         Scale 29 Bb
03 00 1C 0B     00 00 00 01     00 - 30         Scale 29 B
```

Table HR Harmony Note <HARMONIST User Scale>

Data(H)	Description
00	Pitch = -C ↓↓
01	Pitch = -Db↓
02	Pitch = -D ↓
03	Pitch = -Eb↓
04	Pitch = -E ↓
05	Pitch = -F ↓
06	Pitch = -F#↓
07	Pitch = -G ↓
08	Pitch = -Ab↓
09	Pitch = -A ↓
0A	Pitch = -Bb↓
0B	Pitch = -B ↓
0C	Pitch = -C ↓
0D	Pitch = -Db
0E	Pitch = -D
0F	Pitch = -Eb
10	Pitch = -E
11	Pitch = -F
12	Pitch = -F#
13	Pitch = -G
14	Pitch = -Ab
15	Pitch = -A
16	Pitch = -Bb
17	Pitch = -B
18	Pitch = C
19	Pitch = +Db
1A	Pitch = +D
1B	Pitch = +Eb
1C	Pitch = +E
1D	Pitch = +F
1E	Pitch = +F#
1F	Pitch = +G
20	Pitch = +Ab
21	Pitch = +A
22	Pitch = +Bb
23	Pitch = +B
24	Pitch = +C ↑
25	Pitch = +Db↑
26	Pitch = +D ↑
27	Pitch = +Eb↑
28	Pitch = +E ↑
29	Pitch = +F ↑
2A	Pitch = +F#↑
2B	Pitch = +G ↑
2C	Pitch = +Ab↑
2D	Pitch = +A ↑
2E	Pitch = +Bb↑
2F	Pitch = +B ↑
30	Pitch = +C ↑↑

Below is an explanation of the Description value when IN is C.
Replace each of the values when IN is something other than C.

Table AUTO RIFF <AUTO RIFF User Phrase>

Address(H)	Size(H)	Data(H)	Parameter	Description
03 01 00 00	00 00 00 01	00 - 32	User 1 C Step1	*Refer to "Table AR Step Note"
03 01 00 01	00 00 00 01	00 - 32	User 1 C Step2	
03 01 00 02	00 00 00 01	00 - 32	User 1 C Step3	
03 01 00 03	00 00 00 01	00 - 32	User 1 C Step4	
03 01 00 04	00 00 00 01	00 - 32	User 1 C Step5	
03 01 00 05	00 00 00 01	00 - 32	User 1 C Step6	
03 01 00 06	00 00 00 01	00 - 32	User 1 C Step7	
03 01 00 07	00 00 00 01	00 - 32	User 1 C Step8	
03 01 00 08	00 00 00 01	00 - 32	User 1 C Step9	
03 01 00 09	00 00 00 01	00 - 32	User 1 C Step10	
03 01 00 0A	00 00 00 01	00 - 32	User 1 C Step11	
03 01 00 0B	00 00 00 01	00 - 32	User 1 C Step12	
03 01 00 0C	00 00 00 01	00 - 32	User 1 C Step13	
03 01 00 0D	00 00 00 01	00 - 32	User 1 C Step14	
03 01 00 0E	00 00 00 01	00 - 32	User 1 C Step15	
03 01 00 0F	00 00 00 01	00 - 32	User 1 C Step16	
03 01 00 10	00 00 00 01	00 - 32	User 1 Db Step1	*Refer to "Table AR Step Note"
03 01 00 11	00 00 00 01	00 - 32	User 1 Db Step2	
03 01 00 12	00 00 00 01	00 - 32	User 1 Db Step3	
03 01 00 13	00 00 00 01	00 - 32	User 1 Db Step4	
03 01 00 14	00 00 00 01	00 - 32	User 1 Db Step5	
03 01 00 15	00 00 00 01	00 - 32	User 1 Db Step6	
03 01 00 16	00 00 00 01	00 - 32	User 1 Db Step7	
03 01 00 17	00 00 00 01	00 - 32	User 1 Db Step8	
03 01 00 18	00 00 00 01	00 - 32	User 1 Db Step9	
03 01 00 19	00 00 00 01	00 - 32	User 1 Db Step10	
03 01 00 1A	00 00 00 01	00 - 32	User 1 Db Step11	
03 01 00 1B	00 00 00 01	00 - 32	User 1 Db Step12	
03 01 00 1C	00 00 00 01	00 - 32	User 1 Db Step13	
03 01 00 1D	00 00 00 01	00 - 32	User 1 Db Step14	
03 01 00 1E	00 00 00 01	00 - 32	User 1 Db Step15	
03 01 00 1F	00 00 00 01	00 - 32	User 1 Db Step16	
03 01 00 20	00 00 00 01	00 - 32	User 1 D Step1	*Refer to "Table AR Step Note"
03 01 00 21	00 00 00 01	00 - 32	User 1 D Step2	
03 01 00 22	00 00 00 01	00 - 32	User 1 D Step3	
03 01 00 23	00 00 00 01	00 - 32	User 1 D Step4	
03 01 00 24	00 00 00 01	00 - 32	User 1 D Step5	
03 01 00 25	00 00 00 01	00 - 32	User 1 D Step6	
03 01 00 26	00 00 00 01	00 - 32	User 1 D Step7	
03 01 00 27	00 00 00 01	00 - 32	User 1 D Step8	
03 01 00 28	00 00 00 01	00 - 32	User 1 D Step9	
03 01 00 29	00 00 00 01	00 - 32	User 1 D Step10	
03 01 00 2A	00 00 00 01	00 - 32	User 1 D Step11	
03 01 00 2B	00 00 00 01	00 - 32	User 1 D Step12	
03 01 00 2C	00 00 00 01	00 - 32	User 1 D Step13	
03 01 00 2D	00 00 00 01	00 - 32	User 1 D Step14	
03 01 00 2E	00 00 00 01	00 - 32	User 1 D Step15	
03 01 00 2F	00 00 00 01	00 - 32	User 1 D Step16	
03 01 00 30	00 00 00 01	00 - 32	User 1 Eb Step1	*Refer to "Table AR Step Note"
03 01 00 31	00 00 00 01	00 - 32	User 1 Eb Step2	
03 01 00 32	00 00 00 01	00 - 32	User 1 Eb Step3	
03 01 00 33	00 00 00 01	00 - 32	User 1 Eb Step4	
03 01 00 34	00 00 00 01	00 - 32	User 1 Eb Step5	
03 01 00 35	00 00 00 01	00 - 32	User 1 Eb Step6	
03 01 00 36	00 00 00 01	00 - 32	User 1 Eb Step7	
03 01 00 37	00 00 00 01	00 - 32	User 1 Eb Step8	
03 01 00 38	00 00 00 01	00 - 32	User 1 Eb Step9	
03 01 00 39	00 00 00 01	00 - 32	User 1 Eb Step10	
03 01 00 3A	00 00 00 01	00 - 32	User 1 Eb Step11	
03 01 00 3B	00 00 00 01	00 - 32	User 1 Eb Step12	
03 01 00 3C	00 00 00 01	00 - 32	User 1 Eb Step13	
03 01 00 3D	00 00 00 01	00 - 32	User 1 Eb Step14	
03 01 00 3E	00 00 00 01	00 - 32	User 1 Eb Step15	
03 01 00 3F	00 00 00 01	00 - 32	User 1 Eb Step16	
03 01 00 40	00 00 00 01	00 - 32	User 1 E Step1	*Refer to "Table AR Step Note"
03 01 00 41	00 00 00 01	00 - 32	User 1 E Step2	
03 01 00 42	00 00 00 01	00 - 32	User 1 E Step3	
03 01 00 43	00 00 00 01	00 - 32	User 1 E Step4	
03 01 00 44	00 00 00 01	00 - 32	User 1 E Step5	
03 01 00 45	00 00 00 01	00 - 32	User 1 E Step6	
03 01 00 46	00 00 00 01	00 - 32	User 1 E Step7	
03 01 00 47	00 00 00 01	00 - 32	User 1 E Step8	
03 01 00 48	00 00 00 01	00 - 32	User 1 E Step9	
03 01 00 49	00 00 00 01	00 - 32	User 1 E Step10	
03 01 00 4A	00 00 00 01	00 - 32	User 1 E Step11	
03 01 00 4B	00 00 00 01	00 - 32	User 1 E Step12	
03 01 00 4C	00 00 00 01	00 - 32	User 1 E Step13	
03 01 00 4D	00 00 00 01	00 - 32	User 1 E Step14	
03 01 00 4E	00 00 00 01	00 - 32	User 1 E Step15	
03 01 00 4F	00 00 00 01	00 - 32	User 1 E Step16	
03 01 00 50	00 00 00 01	00 - 32	User 1 F Step1	*Refer to "Table AR Step Note"
03 01 00 51	00 00 00 01	00 - 32	User 1 F Step2	
03 01 00 52	00 00 00 01	00 - 32	User 1 F Step3	
03 01 00 53	00 00 00 01	00 - 32	User 1 F Step4	
03 01 00 54	00 00 00 01	00 - 32	User 1 F Step5	
03 01 00 55	00 00 00 01	00 - 32	User 1 F Step6	
03 01 00 56	00 00 00 01	00 - 32	User 1 F Step7	
03 01 00 57	00 00 00 01	00 - 32	User 1 F Step8	
03 01 00 58	00 00 00 01	00 - 32	User 1 F Step9	
03 01 00 59	00 00 00 01	00 - 32	User 1 F Step10	
03 01 00 5A	00 00 00 01	00 - 32	User 1 F Step11	
03 01 00 5B	00 00 00 01	00 - 32	User 1 F Step12	
03 01 00 5C	00 00 00 01	00 - 32	User 1 F Step13	
03 01 00 5D	00 00 00 01	00 - 32	User 1 F Step14	
03 01 00 5E	00 00 00 01	00 - 32	User 1 F Step15	
03 01 00 5F	00 00 00 01	00 - 32	User 1 F Step16	
03 01 00 60	00 00 00 01	00 - 32	User 1 F# Step1	*Refer to "Table AR Step Note"
03 01 00 61	00 00 00 01	00 - 32	User 1 F# Step2	
03 01 00 62	00 00 00 01	00 - 32	User 1 F# Step3	
03 01 00 63	00 00 00 01	00 - 32	User 1 F# Step4	
03 01 00 64	00 00 00 01	00 - 32	User 1 F# Step5	
03 01 00 65	00 00 00 01	00 - 32	User 1 F# Step6	
03 01 00 66	00 00 00 01	00 - 32	User 1 F# Step7	
03 01 00 67	00 00 00 01	00 - 32	User 1 F# Step8	
03 01 00 68	00 00 00 01	00 - 32	User 1 F# Step9	
03 01 00 69	00 00 00 01	00 - 32	User 1 F# Step10	
03 01 00 6A	00 00 00 01	00 - 32	User 1 F# Step11	
03 01 00 6B	00 00 00 01	00 - 32	User 1 F# Step12	
03 01 00 6C	00 00 00 01	00 - 32	User 1 F# Step13	
03 01 00 6D	00 00 00 01	00 - 32	User 1 F# Step14	

03 01 00 6E	00 00 00 01	00 – 32	User 1 F# Step15	
03 01 00 6F	00 00 00 01	00 – 32	User 1 F# Step16	
03 01 00 70	00 00 00 01	00 – 32	User 1 G Step1	*Refer to "Table AR Step Note"
03 01 00 71	00 00 00 01	00 – 32	User 1 G Step2	
03 01 00 72	00 00 00 01	00 – 32	User 1 G Step3	
03 01 00 73	00 00 00 01	00 – 32	User 1 G Step4	
03 01 00 74	00 00 00 01	00 – 32	User 1 G Step5	
03 01 00 75	00 00 00 01	00 – 32	User 1 G Step6	
03 01 00 76	00 00 00 01	00 – 32	User 1 G Step7	
03 01 00 77	00 00 00 01	00 – 32	User 1 G Step8	
03 01 00 78	00 00 00 01	00 – 32	User 1 G Step9	
03 01 00 79	00 00 00 01	00 – 32	User 1 G Step10	
03 01 00 7A	00 00 00 01	00 – 32	User 1 G Step11	
03 01 00 7B	00 00 00 01	00 – 32	User 1 G Step12	
03 01 00 7C	00 00 00 01	00 – 32	User 1 G Step13	
03 01 00 7D	00 00 00 01	00 – 32	User 1 G Step14	
03 01 00 7E	00 00 00 01	00 – 32	User 1 G Step15	
03 01 00 7F	00 00 00 01	00 – 32	User 1 G Step16	
03 01 01 00	00 00 00 01	00 – 32	User 1 Ab Step1	*Refer to "Table AR Step Note"
03 01 01 01	00 00 00 01	00 – 32	User 1 Ab Step2	
03 01 01 02	00 00 00 01	00 – 32	User 1 Ab Step3	
03 01 01 03	00 00 00 01	00 – 32	User 1 Ab Step4	
03 01 01 04	00 00 00 01	00 – 32	User 1 Ab Step5	
03 01 01 05	00 00 00 01	00 – 32	User 1 Ab Step6	
03 01 01 06	00 00 00 01	00 – 32	User 1 Ab Step7	
03 01 01 07	00 00 00 01	00 – 32	User 1 Ab Step8	
03 01 01 08	00 00 00 01	00 – 32	User 1 Ab Step9	
03 01 01 09	00 00 00 01	00 – 32	User 1 Ab Step10	
03 01 01 0A	00 00 00 01	00 – 32	User 1 Ab Step11	
03 01 01 0B	00 00 00 01	00 – 32	User 1 Ab Step12	
03 01 01 0C	00 00 00 01	00 – 32	User 1 Ab Step13	
03 01 01 0D	00 00 00 01	00 – 32	User 1 Ab Step14	
03 01 01 0E	00 00 00 01	00 – 32	User 1 Ab Step15	
03 01 01 0F	00 00 00 01	00 – 32	User 1 Ab Step16	
03 01 01 10	00 00 00 01	00 – 32	User 1 A Step1	*Refer to "Table AR Step Note"
03 01 01 11	00 00 00 01	00 – 32	User 1 A Step2	
03 01 01 12	00 00 00 01	00 – 32	User 1 A Step3	
03 01 01 13	00 00 00 01	00 – 32	User 1 A Step4	
03 01 01 14	00 00 00 01	00 – 32	User 1 A Step5	
03 01 01 15	00 00 00 01	00 – 32	User 1 A Step6	
03 01 01 16	00 00 00 01	00 – 32	User 1 A Step7	
03 01 01 17	00 00 00 01	00 – 32	User 1 A Step8	
03 01 01 18	00 00 00 01	00 – 32	User 1 A Step9	
03 01 01 19	00 00 00 01	00 – 32	User 1 A Step10	
03 01 01 1A	00 00 00 01	00 – 32	User 1 A Step11	
03 01 01 1B	00 00 00 01	00 – 32	User 1 A Step12	
03 01 01 1C	00 00 00 01	00 – 32	User 1 A Step13	
03 01 01 1D	00 00 00 01	00 – 32	User 1 A Step14	
03 01 01 1E	00 00 00 01	00 – 32	User 1 A Step15	
03 01 01 1F	00 00 00 01	00 – 32	User 1 A Step16	
03 01 01 20	00 00 00 01	00 – 32	User 1 Bb Step1	*Refer to "Table AR Step Note"
03 01 01 21	00 00 00 01	00 – 32	User 1 Bb Step2	
03 01 01 22	00 00 00 01	00 – 32	User 1 Bb Step3	
03 01 01 23	00 00 00 01	00 – 32	User 1 Bb Step4	
03 01 01 24	00 00 00 01	00 – 32	User 1 Bb Step5	
03 01 01 25	00 00 00 01	00 – 32	User 1 Bb Step6	
03 01 01 26	00 00 00 01	00 – 32	User 1 Bb Step7	
03 01 01 27	00 00 00 01	00 – 32	User 1 Bb Step8	
03 01 01 28	00 00 00 01	00 – 32	User 1 Bb Step9	
03 01 01 29	00 00 00 01	00 – 32	User 1 Bb Step10	
03 01 01 2A	00 00 00 01	00 – 32	User 1 Bb Step11	
03 01 01 2B	00 00 00 01	00 – 32	User 1 Bb Step12	
03 01 01 2C	00 00 00 01	00 – 32	User 1 Bb Step13	
03 01 01 2D	00 00 00 01	00 – 32	User 1 Bb Step14	
03 01 01 2E	00 00 00 01	00 – 32	User 1 Bb Step15	
03 01 01 2F	00 00 00 01	00 – 32	User 1 Bb Step16	
03 01 01 30	00 00 00 01	00 – 32	User 1 B Step1	*Refer to "Table AR Step Note"
03 01 01 31	00 00 00 01	00 – 32	User 1 B Step2	
03 01 01 32	00 00 00 01	00 – 32	User 1 B Step3	
03 01 01 33	00 00 00 01	00 – 32	User 1 B Step4	
03 01 01 34	00 00 00 01	00 – 32	User 1 B Step5	
03 01 01 35	00 00 00 01	00 – 32	User 1 B Step6	
03 01 01 36	00 00 00 01	00 – 32	User 1 B Step7	
03 01 01 37	00 00 00 01	00 – 32	User 1 B Step8	
03 01 01 38	00 00 00 01	00 – 32	User 1 B Step9	
03 01 01 39	00 00 00 01	00 – 32	User 1 B Step10	
03 01 01 3A	00 00 00 01	00 – 32	User 1 B Step11	
03 01 01 3B	00 00 00 01	00 – 32	User 1 B Step12	
03 01 01 3C	00 00 00 01	00 – 32	User 1 B Step13	
03 01 01 3D	00 00 00 01	00 – 32	User 1 B Step14	
03 01 01 3E	00 00 00 01	00 – 32	User 1 B Step15	
03 01 01 3F	00 00 00 01	00 – 32	User 1 B Step16	
03 01 02 00	00 00 00 01	00 – 32	User 2 C Step1	*Refer to "Table AR Step Note"
:			:	
03 01 04 00	00 00 00 01	00 – 32	User 3 C Step1	*Refer to "Table AR Step Note"
:			:	
03 01 06 00	00 00 00 01	00 – 32	User 4 C Step1	*Refer to "Table AR Step Note"
:			:	
03 01 08 00	00 00 00 01	00 – 32	User 5 C Step1	*Refer to "Table AR Step Note"
:			:	
03 01 0A 00	00 00 00 01	00 – 32	User 6 C Step1	*Refer to "Table AR Step Note"
:			:	
03 01 0C 00	00 00 00 01	00 – 32	User 7 C Step1	*Refer to "Table AR Step Note"
:			:	
03 01 0E 00	00 00 00 01	00 – 32	User 8 C Step1	*Refer to "Table AR Step Note"
:			:	
03 01 10 00	00 00 00 01	00 – 32	User 9 C Step1	*Refer to "Table AR Step Note"
:			:	
03 01 12 00	00 00 00 01	00 – 32	User 10 C Step1	*Refer to "Table AR Step Note"
:			:	
03 01 13 3F	00 00 00 01	00 – 32	User 10 B Step16	*Refer to "Table AR Step Note"

Table AR Step Note <AUTO RIFF User Phrase>

Data(H)	Description
00	Pitch = -C ↓↓
01	Pitch = -Db↓
02	Pitch = -D ↓
03	Pitch = -Eb↓
04	Pitch = -E ↓
05	Pitch = -F ↓
06	Pitch = -F#↓
07	Pitch = -G ↓
08	Pitch = -Ab↓
09	Pitch = -A ↓
0A	Pitch = -Bb↓
0B	Pitch = -B ↓
0C	Pitch = -C ↓
0D	Pitch = -Db
0E	Pitch = -D
0F	Pitch = -Eb
10	Pitch = -E
11	Pitch = -F
12	Pitch = -F#
13	Pitch = -G
14	Pitch = -Ab
15	Pitch = -A
16	Pitch = -Bb
17	Pitch = -B
18	Pitch = C
19	Pitch = +Db
1A	Pitch = +D
1B	Pitch = +Eb
1C	Pitch = +E
1D	Pitch = +F
1E	Pitch = +F#
1F	Pitch = +G
20	Pitch = +Ab
21	Pitch = +A
22	Pitch = +Bb
23	Pitch = +B
24	Pitch = +C ↑
25	Pitch = +Db↑
26	Pitch = +D ↑
27	Pitch = +Eb↑
28	Pitch = +E ↑
29	Pitch = +F ↑
2A	Pitch = +F#↑
2B	Pitch = +G ↑
2C	Pitch = +Ab↑
2D	Pitch = +A ↑
2E	Pitch = +Bb↑
2F	Pitch = +B ↑
30	Pitch = +C ↑↑
31	Pitch = -
32	Pitch = end

Below is an explanation of the Description value when IN is C.
Replace each of the values when IN is something other than C.

Table AMP <AMP Customize>

Address(H)	Size(H)	Data(H)	Parameter	Description
03 02 00 00	00 00 00 01	00 - 06	Custom1 Type	00 : JC Clean
				01 : TW Clean
				02 : Crunch
				03 : VO Lead
				04 : BG Lead
				05 : MS1959 Stk
				06 : Modern Stk
03 02 00 01	00 00 00 01	00 - 0A	Custom1 Bottom	00 : -50
				01 : -40
				02 : -30
				:
				09 : +40
				0A : +50
03 02 00 02	00 00 00 01	00 - 0A	Custom1 Edge	00 : -50
				01 : -40
				02 : -30
				:
				09 : +40
				0A : +50
03 02 00 03	00 00 00 01	00 - 0A	Custom1 Bass Frequency	00 : -50
				01 : -40
				02 : -30
				:
				09 : +40
				0A : +50
03 02 00 04	00 00 00 01	00 - 0A	Custom1 Treble Frequency	00 : -50
				01 : -40
				02 : -30
				:
				09 : +40
				0A : +50
03 02 00 05	00 00 00 01	00 - 0A	Custom1 Preamp Low	00 : -50
				01 : -40
				02 : -30
				:
				09 : +40
				0A : +50
03 02 00 06	00 00 00 01	00 - 0A	Custom1 Preamp High	00 : -50
				01 : -40
				02 : -30
				:
				09 : +40
				0A : +50
03 02 01 00	00 00 00 01	00 - 06	Custom2 Type	
03 02 01 01	00 00 00 01	00 - 0A	Custom2 Bottom	
03 02 01 02	00 00 00 01	00 - 0A	Custom2 Edge	
03 02 01 03	00 00 00 01	00 - 0A	Custom2 Bass Frequency	
03 02 01 04	00 00 00 01	00 - 0A	Custom2 Treble Frequency	
03 02 01 05	00 00 00 01	00 - 0A	Custom2 Preamp Low	
03 02 01 06	00 00 00 01	00 - 0A	Custom2 Preamp High	
03 02 02 00	00 00 00 01	00 - 06	Custom3 Type	
03 02 02 01	00 00 00 01	00 - 0A	Custom3 Bottom	
03 02 02 02	00 00 00 01	00 - 0A	Custom3 Edge	
03 02 02 03	00 00 00 01	00 - 0A	Custom3 Bass Frequency	
03 02 02 04	00 00 00 01	00 - 0A	Custom3 Treble Frequency	
03 02 02 05	00 00 00 01	00 - 0A	Custom3 Preamp Low	
03 02 02 06	00 00 00 01	00 - 0A	Custom3 Preamp High	

Table SPEAKER <SPEAKER Customize>

Address(H)	Size(H)	Data(H)	Parameter	Description
03 03 00 00	00 00 00 01	00 - 0A	Custom1 Size	00 : 5"
				01 : 6"
				02 : 7"
				:
				09 : 14"
				0A : 15"
03 03 00 01	00 00 00 01	00 - 14	Custom1 Color Low	00 : -10
				01 : - 9
				02 : - 8
				:
				0A : 0
				:
				13 : + 9
				14 : +10
03 03 00 02	00 00 00 01	00 - 14	Custom1 Color High	00 : -10
				01 : - 9
				02 : - 8
				:
				0A : 0
				:
				13 : + 9
				14 : +10
03 03 00 03	00 00 00 01	00 - 03	Custom1 Number	00 : x1
				01 : x2
				02 : x4
				03 : x8
03 03 00 04	00 00 00 01	00 - 01	Custom1 Cabinet Type	00 : Open
				01 : Close
03 03 01 00	00 00 00 01	00 - 0A	Custom2 Size	
03 03 01 01	00 00 00 01	00 - 14	Custom2 Color Low	
03 03 01 02	00 00 00 01	00 - 14	Custom2 Color High	
03 03 01 03	00 00 00 01	00 - 03	Custom2 Number	
03 03 01 04	00 00 00 01	00 - 01	Custom2 Cabinet Type	

Table OD/DS <OD/DS Customize>

Address(H)	Size(H)	Data(H)	Parameter	Description
03 04 00 00	00 00 00 01	00 - 07	Custom1 Type	00 : OD-1 01 : OD-2 02 : CRUNCH 03 : DS-1 04 : DS-2 05 : METAL-1 06 : METAL-2 07 : FUZZ
03 04 00 01	00 00 00 01	00 - 0A	Custom1 Bottom	00 : -50 01 : -40 02 : -30 : 09 : +40 0A : +50
03 04 00 02	00 00 00 01	00 - 0A	Custom1 Top	00 : -50 01 : -40 02 : -30 : 09 : +40 0A : +50
03 04 00 03	00 00 00 01	00 - 0A	Custom1 Low	00 : -50 01 : -40 02 : -30 : 09 : +40 0A : +50
03 04 00 04	00 00 00 01	00 - 0A	Custom1 High	00 : -50 01 : -40 02 : -30 : 09 : +40 0A : +50
03 04 01 00	00 00 00 01	00 - 07	Custom2 Type	
03 04 01 01	00 00 00 01	00 - 0A	Custom2 Bottom	
03 04 01 02	00 00 00 01	00 - 0A	Custom2 Top	
03 04 01 03	00 00 00 01	00 - 0A	Custom2 Low	
03 04 01 04	00 00 00 01	00 - 0A	Custom2 High	
03 04 02 00	00 00 00 01	00 - 07	Custom3 Type	
03 04 02 01	00 00 00 01	00 - 0A	Custom3 Bottom	
03 04 02 02	00 00 00 01	00 - 0A	Custom3 Top	
03 04 02 03	00 00 00 01	00 - 0A	Custom3 Low	
03 04 02 04	00 00 00 01	00 - 0A	Custom3 High	

Table WAH <WAH Customize>

Address(H)	Size(H)	Data(H)	Parameter	Description
03 05 00 00	00 00 00 01	00 - 04	Custom1 Type	00 : CRY WAH 01 : VO WAH 02 : Fat WAH 03 : Light WAH 04 : 7String WAH
03 05 00 01	00 00 00 01	00 - 0A	Custom1 Q	00 : -50 01 : -40 02 : -30 : 09 : +40 0A : +50
03 05 00 02	00 00 00 01	00 - 0A	Custom1 Range Low	00 : -50 01 : -40 02 : -30 : 09 : +40 0A : +50
03 05 00 03	00 00 00 01	00 - 0A	Custom1 Range High	00 : -50 01 : -40 02 : -30 : 09 : +40 0A : +50
03 05 00 04	00 00 00 01	00 - 0A	Custom1 Presence	00 : -50 01 : -40 02 : -30 : 09 : +40 0A : +50
03 05 01 00	00 00 00 01	00 - 04	Custom2 Type	
03 05 01 01	00 00 00 01	00 - 0A	Custom2 Q	
03 05 01 02	00 00 00 01	00 - 0A	Custom2 Range Low	
03 05 01 03	00 00 00 01	00 - 0A	Custom2 Range High	
03 05 01 04	00 00 00 01	00 - 0A	Custom2 Presence	
03 05 02 00	00 00 00 01	00 - 04	Custom3 Type	
03 05 02 01	00 00 00 01	00 - 0A	Custom3 Q	
03 05 02 02	00 00 00 01	00 - 0A	Custom3 Range Low	
03 05 02 03	00 00 00 01	00 - 0A	Custom3 Range High	
03 05 02 04	00 00 00 01	00 - 0A	Custom3 Presence	

Table Quick Fx Data <Quick Fx Data>

Address(H)	Size(H)	Data(H)	Parameter	Description
04 00 ** **				P1(Read Only)
04 01 ** **				P2(Read Only)
04 02 ** **				P3(Read Only)
04 03 ** **				P4(Read Only)
↑ ↑				:
↑ ↑		Separate the upper four and lower four bits, assigning them to different bytes,		
↑ ↑		and process them in sequence, beginning with the upper bits.		
↑ ↑		↓ Example) Processing 64H		
↑ ↑		↓ 06H: Odd address		
↑ ↑		↓ 04H: Even address		
--- FX-1 ---				
** ** 00 00	00 00 00 02	00 - 0A	FX1:FX Select	*Refer to "Table Patch"
** ** 00 02	00 00 00 02	00 - 09	PW :Type	*Refer to "Table Patch"
	00 00 00 02	00 - 01	AW :Mode	*Refer to "Table Patch"
	00 00 00 02	00 - 0C	TM :Type	*Refer to "Table Patch"
	00 00 00 02	00 - 02	ACS:Type	*Refer to "Table Patch"
	00 00 00 02	00 - 02	LM :Type	*Refer to "Table Patch"
	00 00 00 02	00 - 64	ENH:Sensitivity	
	00 00 00 02	00 - 64	SG :Sensitivity	
	00 00 00 02	00 - 64	TR :Wave Shape	
	00 00 00 02	00 - 64	DF :Tone	
	00 00 00 02	00 - 01	RM :Mode	*Refer to "Table Patch"
	00 00 00 02	00 - 01	FB :Mode	*Refer to "Table Patch"
** ** 00 04	00 00 00 02	00 - 64	PW :Pdl Position	
	00 00 00 02	00 - 01	AW :Polarity	*Refer to "Table Patch"
	00 00 00 02	00 - 64	TM :Low	
	00 00 00 02	00 - 64	ACS:Sustain	
	00 00 00 02	00 - 64	LM :Attack	
	00 00 00 02	00 - 0B	ENH:Frequency	*Refer to "Table ENH Frequency"
	00 00 00 02	00 - 64	SG :Rise Time	
	00 00 00 02	00 - 71	TR :Rate	*Refer to "Table Rate"
	00 00 00 02	00 - 64	DF :Sensitivity	
	00 00 00 02	00 - 64	RM :Frequency	
	00 00 00 02	00 - 64	FB :Rise Time	
** ** 00 06	00 00 00 02	00 - 64	PW :Level	
	00 00 00 02	00 - 64	AW :Sensitivity	
	00 00 00 02	00 - 64	TM :High	
	00 00 00 02	00 - 64	ACS:Attack	
	00 00 00 02	00 - 64	LM :Threshold	
	00 00 00 02	00 - 64	ENH:Mix Level	
			SG :---	
	00 00 00 02	00 - 64	TR :Depth	
	00 00 00 02	00 - 64	DF :Attack	
	00 00 00 02	00 - 64	RM :Effect Level	
	00 00 00 02	00 - 64	FB :Rise Time(▲)	
** ** 00 08			PW :---	
	00 00 00 02	00 - 64	AW :Frequency	
	00 00 00 02	00 - 64	TM :Level	
	00 00 00 02	00 - 64	ACS:Tone	
	00 00 00 02	00 - 11	LM :Ratio	*Refer to "Table Ratio"
			ENH:---	
			SG :---	
			TR :---	
	00 00 00 02	00 - 64	DF :Depth	
	00 00 00 02	00 - 64	RM :Direct Level	
	00 00 00 02	00 - 64	FB :F.B.Level	
** ** 00 0A			PW :---	
	00 00 00 02	00 - 64	AW :Peak	
			TM :---	
	00 00 00 02	00 - 64	ACS:Level	
	00 00 00 02	00 - 64	LM :Release	
			ENH:---	
			SG :---	
			TR :---	
	00 00 00 02	00 - 64	DF :Resonance	
			RM :---	
	00 00 00 02	00 - 64	FB :F.B.Level(▲)	
** ** 00 0C			PW :---	
	00 00 00 02	00 - 71	AW :Rate	*Refer to "Table Rate"
			TM :---	
			ACS:---	
	00 00 00 02	00 - 64	LM :Level	
			ENH:---	
			SG :---	
			TR :---	
	00 00 00 02	00 - 64	DF :Effect Level	
			RM :---	
	00 00 00 02	00 - 71	FB :Vibrato Rate	*Refer to "Table Rate"
** ** 00 0E			PW :---	
	00 00 00 02	00 - 64	AW :Depth	
			TM :---	
			ACS:---	
			LM :---	
			ENH:---	
			SG :---	
			TR :---	
	00 00 00 02	00 - 64	DF :Direct Level	
			RM :---	
	00 00 00 02	00 - 64	FB :Vibrato Depth	
** ** 00 10			PW :---	
	00 00 00 02	00 - 64	AW :Level	
			TM :---	
			ACS:---	
			LM :---	
			ENH:---	
			TR :---	
			SG :---	
			DF :---	
			RM :---	
			FB :---	

--- COMP ---				
** ** 01 00	00 00 00 02	00 - 64	CS :Sustain	
** ** 01 02	00 00 00 02	00 - 64	CS :Level	
--- OD/DS ---				
** ** 02 00	00 00 00 02	00 - 18	OD :Type	*Refer to "Table OD Type"
** ** 02 02	00 00 00 02	00 - 64	OD :Drive	
** ** 02 04	00 00 00 02	00 - 64	OD :Bass	
** ** 02 06	00 00 00 02	00 - 64	OD :Treble	
** ** 02 08	00 00 00 02	00 - 64	OD :EffectLevel	
** ** 02 0A	00 00 00 02	00 - 64	OD :DirectLevel	
--- PREAMP/SP SIM ---				
** ** 03 00	00 00 00 02	00 - 2F	PRE/SP:Type	*Refer to "Table PRE/SP Type"
** ** 03 02	00 00 00 02	00 - 78	PRE/SP:Gain	
** ** 03 04	00 00 00 02	00 - 64	PRE/SP:Bass	
** ** 03 06	00 00 00 02	00 - 64	PRE/SP:Middle	
** ** 03 08	00 00 00 02	00 - 64	PRE/SP:Treble	
** ** 03 0A	00 00 00 02	00 - 64	PRE/SP:Presence	
** ** 03 0C	00 00 00 02	00 - 64	PRE/SP:Amp Level	
** ** 03 1E	00 00 00 02	00 - 01	PRE/SP:Bright	
** ** 03 10	00 00 00 02	00 - 02	PRE/SP:Gain Switch	
** ** 03 12	00 00 00 02	00 - 09	PRE/SP:Speaker Type	*Refer to "Table Patch"
** ** 03 14	00 00 00 02	00 - 04	PRE/SP:Mic Type	*Refer to "Table Patch"
** ** 03 16	00 00 00 02	00 - 01	PRE/SP:Mic Distance	*Refer to "Table Patch"
** ** 03 18	00 00 00 02	00 - 0A	PRE/SP:Mic Position	*Refer to "Table Patch"
** ** 03 1A	00 00 00 02	00 - 64	PRE/SP:Mic Level	
** ** 03 1C	00 00 00 02	00 - 64	PRE/SP:Direct Level	
--- EQ ---				
** ** 04 00	00 00 00 02	00 - 28	EQ :Low EQ	
** ** 04 02	00 00 00 02	00 - 1B	EQ :Low-Middle Frequency	*Refer to "Table EQ Middle Frequency"
** ** 04 04	00 00 00 02	00 - 05	EQ :Low-Middle Q	*Refer to "Table EQ Middle Q"
** ** 04 06	00 00 00 02	00 - 28	EQ :Low-Middle EQ	
** ** 04 08	00 00 00 02	00 - 1B	EQ :High-Middle Frequency	*Refer to "Table EQ Middle Frequency"
** ** 04 0A	00 00 00 02	00 - 05	EQ :High-Middle Q	*Refer to "Table EQ Middle Q"
** ** 04 0C	00 00 00 02	00 - 28	EQ :High-Middle EQ	
** ** 04 0E	00 00 00 02	00 - 28	EQ :High EQ	
** ** 04 10	00 00 00 02	00 - 28	EQ :Level	
--- FX-2 ---				
** ** 05 00	00 00 00 02	00 - 11	FX2:FX Select	
** ** 05 02	00 00 00 02	00 - 03	PH :Type	*Refer to "Table Patch"
	00 00 00 02	00 - 71	FL :Rate	*Refer to "Table Rate"
	00 00 00 02	00 - 02	HR :Voice	*Refer to "Table Patch"
	00 00 00 02	00 - 02	PS :Voice	*Refer to "Table Patch"
	00 00 00 02	00 - 03	OC :Range	*Refer to "Table OC Range"
	00 00 00 02	00 - 30	PB :Pitch Min	
	00 00 00 02	00 - 10	2CE:Xover Frequency	*Refer to "Table Xover Frequency"
	00 00 00 02	00 - 64	PAN:Wave Shape	
	00 00 00 02	00 - 71	VB :Rate	*Refer to "Table Rate"
	00 00 00 02	00 - 71	UV :Rate	*Refer to "Table Rate"
	00 00 00 02	00 - 01	RT :Speed Select	*Refer to "Table Patch"
	00 00 00 04	00 00 - 03 17	SDD:Delay Time	*Refer to "Table SDD Delay Time"
	00 00 00 02	00 - 02	HU :Mode	*Refer to "Table Patch"
	00 00 00 02	00 - 13	SL :Pattern	*Refer to "Table Patch"
	00 00 00 02	00 - 27	AR :Phrase	*Refer to "Table Patch"
	00 00 00 02	00 - 64	SYN:Sensitivity	
	00 00 00 02	00 - 01	BS :Character	*Refer to "Table Patch"
	00 00 00 02	00 - 28	SEQ:Low EQ	
** ** 05 04	00 00 00 02	00 - 71	PH :Rate	*Refer to "Table Rate"
	00 00 00 02	00 - 64	FL :Depth	
	00 00 00 02	00 - 39	HR :HR1 Harmony	*Refer to "Table HR Harmony"
	00 00 00 02	00 - 03	PS :PS1 Mode	*Refer to "Table Patch"
	00 00 00 02	00 - 64	OC :Octave Level	
	00 00 00 02	00 - 30	PB :Pitch Max	
	00 00 00 02	00 - 71	2CE:Low Rate	*Refer to "Table Rate"
	00 00 00 02	00 - 71	PAN:Rate	*Refer to "Table Rate"
	00 00 00 02	00 - 64	VB :Depth	
	00 00 00 02	00 - 64	UV :Depth	
	00 00 00 02	00 - 71	RT :Rate(Slow)	*Refer to "Table Rate"
			SDD:Delay Time (LSB)	
	00 00 00 02	00 - 04	HU :Vowel 1	*Refer to "Table Patch"
	00 00 00 02	00 - 71	SL :Rate	*Refer to "Table Rate"
	00 00 00 02	00 - 01	AR :Loop	*Refer to "Table Patch"
	00 00 00 02	00 - 03	SYN:Wave	*Refer to "Table Patch"
	00 00 00 02	00 - 64	BS :Level	
	00 00 00 02	00 - 1B	SEQ:Low-Middle Frequency	*Refer to "Table EQ Middle Frequency"
** ** 05 06	00 00 00 02	00 - 64	PH :Depth	
	00 00 00 02	00 - 64	FL :Manual	
	00 00 00 04	00 00 - 02 33	HR :HR1 Pre Delay	*Refer to "Table Pre Delay"
	00 00 00 02	00 - 30	PS :PS1 Pitch	
	00 00 00 02	00 - 64	OC :Direct Level	
	00 00 00 02	00 - 64	PB :Pdl Position	
	00 00 00 02	00 - 64	2CE:Low Depth	
	00 00 00 02	00 - 64	PAN:Depth	
	00 00 00 02	00 - 01	VB :Trigger	*Refer to "Table Patch"
	00 00 00 02	00 - 64	UV :Level	
	00 00 00 02	00 - 64	RT :Rate(Fast)	*Refer to "Table Rate"
	00 00 00 02	00 - 64	SDD:Feedback	
	00 00 00 02	00 - 04	HU :Vowel 2	*Refer to "Table Patch"
	00 00 00 02	00 - 64	SL :Trigger Sensitivity	
	00 00 00 02	00 - 71	AR :Tempo	*Refer to "Table Rate"
	00 00 00 02	00 - 01	SYN:Chromatic	*Refer to "Table Patch"
			BS :---	
	00 00 00 02	00 - 05	SEQ:Low-Middle Q	*Refer to "Table EQ Middle Q"
** ** 05 08	00 00 00 02	00 - 64	PH :Manual	
	00 00 00 02	00 - 64	FL :Resonance	
			HR :HR1 Pre Delay (LSB)	
	00 00 00 02	00 - 64	PS :PS1 Fine	
			OC :---	
	00 00 00 02	00 - 64	PB :Effect Level	
	00 00 00 02	00 - 50	2CE:Low Pre Delay	*Refer to "Table Patch"
			PAN:---	
	00 00 00 02	00 - 64	VB :Rise Time	
			UV :---	
	00 00 00 02	00 - 64	RT :Rise Time	
	00 00 00 02	00 - 78	SDD:Effect Level	
	00 00 00 02	00 - 64	HU :Sensitivity	
			SL :---	

	00 00 00 02	00 - 64	AR :Sensitivity	
	00 00 00 02	00 - 02	SYN:Octave Shift	*Refer to "Table Patch"
			BS :---	
	00 00 00 02	00 - 28	SEQ:Low-Middle EQ	
** ** 05 0A	00 00 00 02	00 - 64	PH :Resonance	
	00 00 00 02	00 - 64	FL :Separation	
	00 00 00 02	00 - 64	HR :HR1 Feedback	
	00 00 00 04	00 00 - 02 33	PS :PS1 Pre Delay	*Refer to "Table Pre Delay"
			OC :---	
	00 00 00 02	00 - 64	PB :Direct Level	
	00 00 00 02	00 - 64	2CE:Low Level	
			PAN:---	
			VB :---	
			UV :---	
	00 00 00 02	00 - 64	RT :Fall Time	
			SDD:---	
	00 00 00 02	00 - 71	HU :Rate	*Refer to "Table Rate"
			SL :---	
	00 00 00 02	00 - 0B	AR :Key	*Refer to "Table Patch"
	00 00 00 02	00 - 64	SYN:PWM Rate	
			BS :---	
	00 00 00 02	00 - 1B	SEQ:High-Middle Frequency	*Refer to "Table EQ Middle Frequency"
** ** 05 0C	00 00 00 02	00 - 72	PH :Step Rate	*Refer to "Table Step Rate"
	00 00 00 02	00 - 0A	FL :Low Cut Filter	*Refer to "Table Low Cut"
	00 00 00 02	00 - 64	HR :HR1 Level	
			PS :PS1 Pre Delay(LSB)	
			OC :---	
			PB :---	
	00 00 00 02	00 - 71	2CE:High Rate	*Refer to "Table Rate"
			PAN:---	
			VB :---	
			UV :---	
	00 00 00 02	00 - 64	RT :Depth	
			SDD:---	
	00 00 00 02	00 - 64	HU :Depth	
			SL :---	
	00 00 00 02	00 - 64	AR :Attack	
	00 00 00 02	00 - 64	SYN:PWM Depth	
			BS :---	
	00 00 00 02	00 - 05	SEQ:High-Middle Q	*Refer to "Table EQ Middle Q"
** ** 05 0E	00 00 00 02	00 - 64	PH :Effect Level	
	00 00 00 02	00 - 64	FL :Effect Level	
	00 00 00 02	00 - 39	HR :HR2 Harmony	*Refer to "Table HR Harmony"
	00 00 00 02	00 - 64	PS :PS1 Feedback	
			OC :---	
			PB :---	
	00 00 00 02	00 - 64	2CE:High Depth	
			PAN:---	
			VB :---	
			UV :---	
			RT :---	
			SDD:---	
	00 00 00 02	00 - 64	HU :Manual	
			SL :---	
	00 00 00 02	00 - 01	AR :Hold	*Refer to "Table Patch"
	00 00 00 02	00 - 64	SYN:Cutoff Frequency	
			BS :---	
	00 00 00 02	00 - 28	SEQ:High-Middle EQ	
** ** 05 10	00 00 00 02	00 - 64	PH :Direct Level	
	00 00 00 02	00 - 64	FL :Direct Level	
	00 00 00 04	00 00 - 02 33	HR :HR2 Pre Delay	*Refer to "Table Pre Delay"
	00 00 00 02	00 - 64	PS :PS1 Level	
			OC :---	
			PB :---	
	00 00 00 02	00 - 64	2CE:High Pre Delay	*Refer to "Table Patch"
			PAN:---	
			VB :---	
			UV :---	
			RT :---	
			SDD:---	
	00 00 00 02	00 - 64	HU :Level	
			SL :---	
	00 00 00 02	00 - 64	AR :Effect Level	
	00 00 00 02	00 - 64	SYN:Resonance	
			BS :---	
	00 00 00 02	00 - 28	SEQ:High EQ	
** ** 05 12			PH :---	
			FL :---	
			HR :HR2 HR2 Pre Delay (LSB)	
	00 00 00 02	00 - 03	PS :PS2 Mode	*Refer to "Table Patch"
			OC :---	
			PB :---	
	00 00 00 02	00 - 64	2CE:High Level	
			PAN:---	
			VB :---	
			UV :---	
			RT :---	
			SDD:---	
			HU :---	
			SL :---	
	00 00 00 02	00 - 64	AR :Direct Level	
	00 00 00 02	00 - 64	SYN:FLT.Sensitivity	
			BS :---	
	00 00 00 02	00 - 28	SEQ:Level	
** ** 05 14			PH :---	
			FL :---	
	00 00 00 02	00 - 64	HR :HR2 Level	
	00 00 00 02	00 - 30	PS :PS2 Pitch	
			OC :---	
			PB :---	
			2CE:---	
			PAN:---	
			VB :---	
			UV :---	
			RT :---	
			SDD:---	
			HU :---	
			SL :---	
			AR :---	

```
                00 00 00 02     00 - 64         SYN:FLT.Decay
                                                BS :---
                                                SEQ:---

** ** 05 16                                     PH :---
                                                FL :---
                00 00 00 02     00 - 0B         HR :Key         *Refer to "Table Patch"
                00 00 00 02     00 - 64         PS :PS2 Fine
                                                OC :---
                                                PB :---
                                                2CE:---
                                                PAN:---
                                                VB :---
                                                UV :---
                                                RT :---
                                                SDD:---
                                                HU :---
                                                SL :---
                                                AR :---
                00 00 00 02     00 - 64         SYN:FLT.Depth   *Refer to "Table Patch"
                                                BS :---
                                                SEQ:---

** ** 05 18                                     PH :---
                                                FL :---
                00 00 00 02     00 - 64         HR :Direct Level
                00 00 00 04     00 00 -         PS :PS2 Pre Delay       *Refer to "Table Pre Delay"
                                - 02 33
                                                OC :---
                                                PB :---
                                                2CE:---
                                                PAN:---
                                                VB :---
                                                UV :---
                                                RT :---
                                                SDD:---
                                                HU :---
                                                SL :---
                                                AR :---
                00 00 00 02     00 - 65         SYN:Attack              *Refer to "Table Patch"
                                                BS :---
                                                SEQ:---

** ** 05 1A                                     PH :---
                                                FL :---
                                                HR :---
                                                PS :PS2 Pre Delay (LSB)
                                                OC :---
                                                PB :---
                                                2CE:---
                                                PAN:---
                                                VB :---
                                                UV :---
                                                RT :---
                                                SDD:---
                                                HU :---
                                                SL :---
                                                AR :---
                00 00 00 02     00 - 64         SYN:Release
                                                BS :---
                                                SEQ:---

** ** 05 1C                                     PH :---
                                                FL :---
                                                HR :---
                00 00 00 02     00 - 64         PS :PS2 Level
                                                OC :---
                                                PB :---
                                                2CE:---
                                                PAN:---
                                                VB :---
                                                UV :---
                                                RT :---
                                                SDD:---
                                                HU :---
                                                SL :---
                                                AR :---
                00 00 00 02     00 - 64         SYN:Velocity
                                                BS :---
                                                SEQ:---

** ** 05 1E                                     PH :---
                                                FL :---
                                                HR :---
                00 00 00 02     00 - 64         PS :Direct Level
                                                OC :---
                                                PB :---
                                                2CE:---
                                                PAN:---
                                                VB :---
                                                UV :---
                                                RT :---
                                                SDD:---
                                                HU :---
                                                SL :---
                                                AR :---
                00 00 00 02     00 - 01         SYN:Hold                *Refer to "Table Patch"
                                                BS :---
                                                SEQ:---

** ** 05 20                                     PH :---
                                                FL :---
                                                HR :---
                                                PS :---
                                                OC :---
                                                PB :---
                                                2CE:---
                                                PAN:---
                                                VB :---
                                                UV :---
                                                RT :---
                                                SDD:---
                                                HU :---
                                                SL :---
                                                AR :---
```

```
                00 00 00 02     00 - 64         SYN:Synth Level
                                                BS :---
                                                SEQ:---

** ** 05 22                                     PH :---
                                                FL :---
                                                HR :---
                                                PS :---
                                                OC :---
                                                PB :---
                                                2CE:---
                                                PAN:---
                                                VB :---
                                                UV :---
                                                RT :---
                                                SDD:---
                                                HU :---
                                                SL :---
                                                AR :---
                00 00 00 02     00 - 64         SYN:Direct Level
                                                BS :---
                                                SEQ:---

--- DELAY ---
** ** 06 00     00 00 00 02     00 - 02         DD :Type                *Refer to "Table Patch"
** ** 06 02     00 00 00 02     00 - 66         DD :DlyTime             *Refer to "Table DD Delay Time"
** ** 06 04     00 00 00 02     00 - 14         DD :DlyTime(Fine)
** ** 06 06     00 00 00 02     00 - 64         DD :Tap Time
** ** 06 08     00 00 00 02     00 - 64         DD :Feedback
** ** 06 0A     00 00 00 02     00 - 09         DD :High Cut Filter     *Refer to "Table High Cut"
** ** 06 0C     00 00 00 02     00 - 78         DD :Effect Level

--- CHORUS ---
** ** 07 00     00 00 00 02     00 - 02         CE :Mode                *Refer to "Table Patch"
** ** 07 02     00 00 00 02     00 - 71         CE :Rate                *Refer to "Table Rate"
** ** 07 04     00 00 00 02     00 - 64         CE :Depth
** ** 07 06     00 00 00 02     00 - 50         CE :Pre Delay           *Refer to "Table Patch"
** ** 07 08     00 00 00 02     00 - 0A         CE :Low Cut Filter      *Refer to "Table Low Cut"
** ** 07 0A     00 00 00 02     00 - 09         CE :High Cut Filter     *Refer to "Table High Cut"
** ** 07 0C     00 00 00 02     00 - 64         CE :Effect Level

--- REVERB ---
** ** 08 00     00 00 00 02     00 - 04         RV :Type                *Refer to "Table Reverb Type"
** ** 08 02     00 00 00 02     00 - 63         RV :Reverb Time         *Refer to "Table Patch"
** ** 08 04     00 00 00 02     00 - 64         RV :Pre Delay
** ** 08 06     00 00 00 02     00 - 0A         RV :Low Cut Filter      *Refer to "Table Low Cut"
** ** 08 08     00 00 00 02     00 - 09         RV :High Cut Filter     *Refer to "Table High Cut"
** ** 08 0A     00 00 00 02     00 - 0A         RV :Density
** ** 08 0C     00 00 00 02     00 - 64         RV :Effect Level

--- ASSIGN ---
** ** 09 00     00 00 00 04     00 00 00 00 -   Assign:Target           *Refer to "Table Quick Fx Target"
** ** 09 02                     - 00 00 0F 0F
** ** 09 04     00 00 00 04     xx xx -         Assign:Target Min       [Target Param Min <= Data <= Target Param Max]
** ** 09 06                     - xx xx
** ** 09 08     00 00 00 04     xx xx -         Assign:Target Max       [Target Param Min <= Data <= Target Param Max]
** ** 09 0A                     - xx xx
** ** 09 0C     00 00 00 02     00 - 41         Assign:Source           *Refer to "Table Source"
** ** 09 0E     00 00 00 02     00 - 01         Assign:Source Mode      *Refer to "Table Patch"
** ** 09 10     00 00 00 02     00 - 7F         Assign:Source Act.Range Low
** ** 09 12     00 00 00 02     00 - 7F         Assign:Source Act.Range High
```

Table Quick Fx Name <Quick Fx Name>

```
-------------------------------------------------------------------------------------------------------------
Address(H)      Size(H)         Data(H)         Parameter       Description
-------------------------------------------------------------------------------------------------------------
05 00 ** **                                                     P1(Read Only)
05 01 ** **                                                     P2(Read Only)
05 02 ** **                                                     P3(Read Only)
05 03 ** **                                                     P4(Read Only)
↑  ↑                                                                 :
↑  ↑
↑  ↑
↑  ↑
↑  ↑

--- FX-1 ---
** ** 00 00     00 00 00 01     20 - 7F         Name 1          *Refer to "Table Name"
** ** 00 01#    00 00 00 01     20 - 7F         Name 2
** ** :  :      :               :               :
** ** 00 0B#    00 00 00 01     20 - 7F         Name 12


--- COMP ---
** ** 01 00     00 00 00 01     20 - 7F         Name 1          *Refer to "Table Name"
** ** 01 01#    00 00 00 01     20 - 7F         Name 2
** ** :  :      :               :               :
** ** 01 0B#    00 00 00 01     20 - 7F         Name 12


--- OD/DS ---
** ** 02 00     00 00 00 01     20 - 7F         Name 1          *Refer to "Table Name"
** ** 02 01#    00 00 00 01     20 - 7F         Name 2
** ** :  :      :               :               :
** ** 02 0B#    00 00 00 01     20 - 7F         Name 12


--- PREAMP/SP SIM ---
** ** 03 00     00 00 00 01     20 - 7F         Name 1          *Refer to "Table Name"
** ** 03 01#    00 00 00 01     20 - 7F         Name 2
** ** :  :      :               :               :
** ** 03 0B#    00 00 00 01     20 - 7F         Name 12


--- EQ ---
** ** 04 00     00 00 00 01     20 - 7F         Name 1          *Refer to "Table Name"
** ** 04 01#    00 00 00 01     20 - 7F         Name 2
** ** :  :      :               :               :
** ** 04 0B#    00 00 00 01     20 - 7F         Name 12
```

```
--- FX-2 ---
** ** 05 00     00 00 00 01     20 - 7F         Name 1          *Refer to "Table Name"
** ** 05 01#    00 00 00 01     20 - 7F         Name 2
** ** :  :      :               :               :
** ** 05 0B#    00 00 00 01     20 - 7F         Name 12

--- DELAY ---
** ** 06 00     00 00 00 01     20 - 7F         Name 1          *Refer to "Table Name"
** ** 06 01#    00 00 00 01     20 - 7F         Name 2
** ** :  :      :               :               :
** ** 06 0B#    00 00 00 01     20 - 7F         Name 12

--- CHORUS ---
** ** 07 00     00 00 00 01     20 - 7F         Name 1          *Refer to "Table Name"
** ** 07 01#    00 00 00 01     20 - 7F         Name 2
** ** :  :      :               :               :
** ** 07 0B#    00 00 00 01     20 - 7F         Name 12

--- REVERB ---
** ** 08 00     00 00 00 01     20 - 7F         Name 1          *Refer to "Table Name"
** ** 08 01#    00 00 00 01     20 - 7F         Name 2
** ** :  :      :               :               :
** ** 08 0B#    00 00 00 01     20 - 7F         Name 12

--- ASSIGN ---
** ** 09 00     00 00 00 01     20 - 7F         Name 1          *Refer to "Table Name"
** ** 09 01#    00 00 00 01     20 - 7F         Name 2
** ** :  :      :               :               :
** ** 09 0B#    00 00 00 01     20 - 7F         Name 12
```

Table Patch <Patch>

```
-------------------------------------------------------------------------------------------------------------
Address(H)      Size(H)         Data(H)         Parameter               Description
-------------------------------------------------------------------------------------------------------------
06 00 ** **                                                             Patch 001 (User Patch)
06 01 ** **                                                             Patch 002 (User Patch)
      :                                                                       :
06 63 ** **                                                             Patch 100 (User Patch)
07 00 ** **                                                             Patch 101 (Preset Patch)
      :                                                                       :
07 63 ** **                                                             Patch 200 (Preset Patch)
08 00 ** **                                                             Temporary Buffer (Bulk)
09 00 ** **                                                             Temporary Buffer (Individual)
↑  ↑
↑  ↑
↑  ↑
↑  ↑
↑  ↑

--- FX-1 ---
** ** 00 00     00 00 00 01     00 - 01         FX1:On/Off              00 : Off
                                                                        01 : On
** ** 00 01     00 00 00 01     00 - 0A         FX1:FX Select           00 : PW
                                                                        01 : AW
                                                                        02 : TM
                                                                        03 : ACS
                                                                        04 : LM
                                                                        05 : ENH
                                                                        06 : SG
                                                                        07 : TR
                                                                        08 : DF
                                                                        09 : RM
                                                                        0A : FB
** ** 00 02     00 00 00 01     00 - 09         PW :Type                00 : CRY WAH
                                                                        01 : VO WAH
                                                                        02 : Fat WAH
                                                                        03 : Light WAH
                                                                        04 : 7String WAH
                                                                        05 : Resonance WAH
                                                                        06 : Bass WAH
                                                                        07 : Custom1
                                                                        08 : Custom2
                                                                        09 : Custom3
** ** 00 03     00 00 00 01     00 - 64         PW :Pdl Position        0 - 100
** ** 00 04     00 00 00 01     00 - 64         PW :Level               0 - 100
** ** 00 05     00 00 00 01     00 - 01         AW :Mode                00 : LPF
                                                                        01 : BPF
** ** 00 06     00 00 00 01     00 - 01         AW :Polarity            00 : Down
                                                                        01 : Up
** ** 00 07     00 00 00 01     00 - 64         AW :Sensitivity         0 - 100
** ** 00 08     00 00 00 01     00 - 64         AW :Frequency           0 - 100
** ** 00 09     00 00 00 01     00 - 64         AW :Peak                0 - 100
** ** 00 0A     00 00 00 01     00 - 71         AW :Rate                *Refer to "Table Rate"
** ** 00 0B     00 00 00 01     00 - 64         AW :Depth               0 - 100
** ** 00 0C     00 00 00 01     00 - 64         AW :Level               0 - 100
** ** 00 0D     00 00 00 01     00 - 0C         TM :Type                00 : Fat
                                                                        01 : Presence
                                                                        02 : Mild
                                                                        03 : Tight
                                                                        04 : Enhance
                                                                        05 : 'S' to 'H'
                                                                        06 : 'H' to 'S'
                                                                        07 : 'H' to 'HF'
                                                                        08 : 'S' to Hollow
                                                                        09 : 'H' to Hollow
                                                                        0A : 'S' to Acoustic
                                                                        0B : 'H' to Acoustic
                                                                        0C : 'P' to Acoustic
** ** 00 0E     00 00 00 01     00 - 64         TM :Low                 -50 - +50
** ** 00 0F     00 00 00 01     00 - 64         TM :High                -50 - +50
** ** 00 10     00 00 00 01     00 - 64         TM :Level               0 - 100
** ** 00 11     00 00 00 01     00 - 02         ACS:Type                00 : Stereo Comp
                                                                        01 : BOSS Comp
                                                                        02 : D-Comp
** ** 00 12     00 00 00 01     00 - 64         ACS:Sustain             0 - 100
** ** 00 13     00 00 00 01     00 - 64         ACS:Attack              0 - 100
** ** 00 14     00 00 00 01     00 - 64         ACS:Tone                -50 - +50
** ** 00 15     00 00 00 01     00 - 64         ACS:Level               0 - 100
** ** 00 16     00 00 00 01     00 - 02         LM :Type                00 : Stereo Limiter
```

					01 : Rack 160D
					02 : Vtg Rack U
** ** 00 17	00 00 00 01	00 - 64	LM :Attack		0 - 100
** ** 00 18	00 00 00 01	00 - 64	LM :Threshold		0 - 100
** ** 00 19	00 00 00 01	00 - 11	LM :Ratio		*Refer to "Table Ratio"
** ** 00 1A	00 00 00 01	00 - 64	LM :Release		0 - 100
** ** 00 1B	00 00 00 01	00 - 64	LM :Level		0 - 100
** ** 00 1C	00 00 00 01	00 - 64	ENH:Sensitivity 0 - 100		
** ** 00 1D	00 00 00 01	00 - 0B	ENH:Frequency		*Refer to "Table ENH Frequency"
** ** 00 1E	00 00 00 01	00 - 64	ENH:Mix Level		0 - 100
** ** 00 1F	00 00 00 01	00 - 64	SG :Sensitivity		0 - 100
** ** 00 20	00 00 00 01	00 - 64	SG :Rise Time		0 - 100
** ** 00 21	00 00 00 01	00 - 64	TR :Wave Shape		0 - 100
** ** 00 22	00 00 00 01	00 - 71	TR :Rate		*Refer to "Table Rate"
** ** 00 23	00 00 00 01	00 - 64	TR :Depth		0 - 100
** ** 00 24	00 00 00 01	00 - 64	DF :Tone		-50 - +50
** ** 00 25	00 00 00 01	00 - 64	DF :Sensitivity		0 - 100
** ** 00 26	00 00 00 01	00 - 64	DF :Attack		0 - 100
** ** 00 27	00 00 00 01	00 - 64	DF :Depth		0 - 100
** ** 00 28	00 00 00 01	00 - 64	DF :Resonance		0 - 100
** ** 00 29	00 00 00 01	00 - 64	DF :Effect Level		0 - 100
** ** 00 2A	00 00 00 01	00 - 64	DF :Direct Level		0 - 100
** ** 00 2B	00 00 00 01	00 - 01	RM :Mode		00 : Normal
					01 : Intelligent
** ** 00 2C	00 00 00 01	00 - 64	RM :Frequency		0 - 100
** ** 00 2D	00 00 00 01	00 - 64	RM :Effect Level		0 - 100
** ** 00 2E	00 00 00 01	00 - 64	RM :Direct Level		0 - 100
** ** 00 2F	00 00 00 01	00 - 01	FB :Mode		00 : OSC
					01 : Natural
** ** 00 30	00 00 00 01	00 - 64	FB :Rise Time		0 - 100 Mode=OSC
** ** 00 31	00 00 00 01	00 - 64	FB :Rise Time(▲)		0 - 100 Mode=OSC
** ** 00 32	00 00 00 01	00 - 64	FB :F.B.Level		0 - 100
** ** 00 33	00 00 00 01	00 - 64	FB :F.B.Level(▲)		0 - 100 Mode=OSC
** ** 00 34	00 00 00 01	00 - 71	FB :Vibrato Rate		0 - 100 Mode=OSC *Refer to "Table Rate"
** ** 00 35	00 00 00 01	00 - 64	FB :Vibrato Depth		0 - 100 Mode=OSC
--- COMP ---					
** ** 01 00	00 00 00 01	00 - 01	CS :On/Off		00 : Off
					01 : On
** ** 01 01	00 00 00 01	00 - 64	CS :Sustain		0 - 100
** ** 01 02	00 00 00 01	00 - 64	CS :Level		0 - 100
--- OD/DS ---					
** ** 02 00	00 00 00 01	00 - 01	OD :On/Off		00 : Off
					01 : On
** ** 02 01	00 00 00 01	00 - 18	OD :Type		*Refer to "Table OD Type"
** ** 02 02	00 00 00 01	00 - 64	OD :Drive		0 - 100
** ** 02 03	00 00 00 01	00 - 64	OD :Bass		-50 - +50
** ** 02 04	00 00 00 01	00 - 64	OD :Treble		-50 - +50
** ** 02 05	00 00 00 01	00 - 64	OD :Effect Level		0 - 100
** ** 02 06	00 00 00 01	00 - 64	OD :Direct Level		0 - 100
--- PREAMP/SP SIM ---					
** ** 03 00	00 00 00 01	00 - 01	PRE/SP:On/Off		00 : Off
					01 : On
** ** 03 01	00 00 00 02	00 - 02	PRE/SP:Channel Select		A, B, C
** ** 03 02	00 00 00 01	00 - 2F	PRE/SP:Type	(Ach)	*Refer to "Table PRE/SP Type"
** ** 03 03	00 00 00 01	00 - 78	PRE/SP:Gain	(Ach)	0 - 120
** ** 03 04	00 00 00 01	00 - 64	PRE/SP:Bass	(Ach)	0 - 100
** ** 03 05	00 00 00 01	00 - 64	PRE/SP:Middle	(Ach)	0 - 100
** ** 03 06	00 00 00 01	00 - 64	PRE/SP:Treble	(Ach)	0 - 100
** ** 03 07	00 00 00 01	00 - 64	PRE/SP:Presence	(Ach)	0 - 100 (-100 - 0)
** ** 03 08	00 00 00 01	00 - 64	PRE/SP:Amp Level	(Ach)	0 - 100
** ** 03 09	00 00 00 01	00 - 01	PRE/SP:Bright	(Ach)	00 : Off
					01 : On
** ** 03 0A	00 00 00 01	00 - 02	PRE/SP:Gain SW	(Ach)	00 : Low
					01 : Middle
					02 : High
** ** 03 0B	00 00 00 01	00 - 0E	PRE/SP:Speaker Type	(Ach)	00 : OFF
					01 : ORIGINAL
					02 : 1x8"
					03 : 1x10"
					04 : 1x12"
					05 : 1x15"
					06 : 1x18"
					07 : 2x12"
					08 : 2x15"
					09 : 4x10"
					0A : 4x12"
					0B : 8x10"
					0C : 8x12"
					0D : Custom1
					0E : Custom2
** ** 03 0C	00 00 00 01	00 - 04	PRE/SP:Mic Type	(Ach)	00 : DYN57
					01 : DYN421
					02 : CND451
					03 : CND87
					04 : FLAT
** ** 03 0D	00 00 00 01	00 - 01	PRE/SP:Mic Distance	(Ach)	00 : Off Mic
					01 : On Mic
** ** 03 0E	00 00 00 01	00 - 0A	PRE/SP:Mic Position	(Ach)	00 : Center
					01 : 1
					02 : 2
					03 : 3
					04 : 4
					05 : 5
					06 : 6
					07 : 7
					08 : 8
					09 : 9
					0A : 10
** ** 03 0F	00 00 00 01	00 - 64	PRE/SP:Mic Level	(Ach)	0 - 100
** ** 03 10	00 00 00 01	00 - 64	PRE/SP:Direct Level	(Ach)	0 - 100
** ** 03 11	00 00 00 01	00 - 2F	PRE/SP:Type	(Bch)	
** ** 03 12	00 00 00 01	00 - 78	PRE/SP:Gain	(Bch)	
** ** 03 13	00 00 00 01	00 - 64	PRE/SP:Bass	(Bch)	
** ** 03 14	00 00 00 01	00 - 64	PRE/SP:Middle	(Bch)	
** ** 03 15	00 00 00 01	00 - 64	PRE/SP:Treble	(Bch)	
** ** 03 16	00 00 00 01	00 - 64	PRE/SP:Presence	(Bch)	
** ** 03 17	00 00 00 01	00 - 64	PRE/SP:Amp Level	(Bch)	

** ** 03 18	00 00 00 01	00 - 01	PRE/SP:Bright	(Bch)
** ** 03 19	00 00 00 01	00 - 02	PRE/SP:Gain SW	(Bch)
** ** 03 1A	00 00 00 01	00 - 09	PRE/SP:Speaker Type	(Bch)
** ** 03 1B	00 00 00 01	00 - 04	PRE/SP:Mic Type	(Bch)
** ** 03 1C	00 00 00 01	00 - 01	PRE/SP:Mic Distance	(Bch)
** ** 03 1D	00 00 00 01	00 - 0A	PRE/SP:Mic Position	(Bch)
** ** 03 1E	00 00 00 01	00 - 64	PRE/SP:Mic Level	(Bch)
** ** 03 1F	00 00 00 01	00 - 64	PRE/SP:Direct Level	(Bch)
** ** 03 20	00 00 00 01	00 - 2F	PRE/SP:Type	(Cch)
** ** 03 21	00 00 00 01	00 - 78	PRE/SP:Gain	(Cch)
** ** 03 22	00 00 00 01	00 - 64	PRE/SP:Bass	(Cch)
** ** 03 23	00 00 00 01	00 - 64	PRE/SP:Middle	(Cch)
** ** 03 24	00 00 00 01	00 - 64	PRE/SP:Treble	(Cch)
** ** 03 25	00 00 00 01	00 - 64	PRE/SP:Presence	(Cch)
** ** 03 26	00 00 00 01	00 - 64	PRE/SP:Amp Level	(Cch)
** ** 03 27	00 00 00 01	00 - 01	PRE/SP:Bright	(Cch)
** ** 03 28	00 00 00 01	00 - 02	PRE/SP:Gain SW	(Cch)
** ** 03 29	00 00 00 01	00 - 09	PRE/SP:Speaker Type	(Cch)
** ** 03 2A	00 00 00 01	00 - 04	PRE/SP:Mic Type	(Cch)
** ** 03 2B	00 00 00 01	00 - 01	PRE/SP:Mic Distance	(Cch)
** ** 03 2C	00 00 00 01	00 - 0A	PRE/SP:Mic Position	(Cch)
** ** 03 2D	00 00 00 01	00 - 64	PRE/SP:Mic Level	(Cch)
** ** 03 2E	00 00 00 01	00 - 64	PRE/SP:Direct Level	(Cch)
--- EQ ---				
** ** 04 00	00 00 00 01	00 - 01	EQ :On/Off	00 : Off 01 : On
** ** 04 01	00 00 00 01	00 - 28	EQ :Low EQ	-20dB - +20dB
** ** 04 02	00 00 00 01	00 - 1B	EQ :Low-Middle Frequency	*Refer to "Table EQ Middle Frequency"
** ** 04 03	00 00 00 01	00 - 05	EQ :Low-Middle Q	*Refer to "Table EQ Middle Q"
** ** 04 04	00 00 00 01	00 - 28	EQ :Low-Middle EQ	-20dB - +20dB
** ** 04 05	00 00 00 01	00 - 1B	EQ :High-Middle Frequency	*Refer to "Table EQ Middle Frequency"
** ** 04 06	00 00 00 01	00 - 05	EQ :High-Middle Q	*Refer to "Table EQ Middle Q"
** ** 04 07	00 00 00 01	00 - 28	EQ :High-Middle EQ	-20dB - +20dB
** ** 04 08	00 00 00 01	00 - 28	EQ :High EQ	-20dB - +20dB
** ** 04 09	00 00 00 01	00 - 28	EQ :Level	-20dB - +20dB
--- FX-2 ---				
** ** 05 00	00 00 00 01	00 - 01	FX2:On/Off	00 : Off 01 : On
** ** 05 01	00 00 00 01	00 - 11	FX2:FX Select	00 : PH 01 : FL 02 : HR 03 : PS 04 : OC 05 : PB 06 : 2CE 07 : PAN 08 : VB 09 : UV 0A : RT 0B : SDD 0C : HU 0D : SL 0E : AR 0F : SYN 10 : BS 11 : SEQ
** ** 05 02	00 00 00 01	00 - 03	PH :Type	00 : 4 Stage 01 : 8 Stage 02 : 12 Stage 03 : Bi-Phase
** ** 05 03	00 00 00 01	00 - 71	PH :Rate	*Refer to "Table Rate"
** ** 05 04	00 00 00 01	00 - 64	PH :Depth	0 - 100
** ** 05 05	00 00 00 01	00 - 64	PH :Manual	0 - 100
** ** 05 06	00 00 00 01	00 - 64	PH :Resonance	0 - 100
** ** 05 07	00 00 00 01	00 - 72	PH :Step Rate	*Refer to "Table Step Rate"
** ** 05 08	00 00 00 01	00 - 64	PH :Effect Level	0 - 100
** ** 05 09	00 00 00 01	00 - 64	PH :Direct Level	0 - 100
** ** 05 0A	00 00 00 01	00 - 71	FL :Rate	*Refer to "Table Rate"
** ** 05 0B	00 00 00 01	00 - 64	FL :Depth	0 - 100
** ** 05 0C	00 00 00 01	00 - 64	FL :Manual	0 - 100
** ** 05 0D	00 00 00 01	00 - 64	FL :Resonance	0 - 100
** ** 05 0E	00 00 00 01	00 - 64	FL :Separation	0 - 100
** ** 05 0F	00 00 00 01	00 - 0A	FL :Low Cut Filter	*Refer to "Table Low Cut"
** ** 05 10	00 00 00 01	00 - 64	FL :Effect Level	0 - 100
** ** 05 11	00 00 00 01	00 - 64	FL :Direct Level	0 - 100
** ** 05 12	00 00 00 01	00 - 02	HR :Voice	00 : 1-Voice 01 : 2-Mono 02 : 2-Stereo
** ** 05 13	00 00 00 01	00 - 39	HR :HR1 Harmony	*Refer to "Table HR Harmony"
** ** 05 14	00 00 00 02	00 00 -	HR :HR1 Pre Delay	*Refer to "Table Pre Delay"
** ** 05 15#		- 02 33		
** ** 05 16	00 00 00 01	00 - 64	HR :HR1 Feedback	0 - 100
** ** 05 17	00 00 00 01	00 - 64	HR :HR1 Level	0 - 100
** ** 05 18	00 00 00 01	00 - 39	HR :HR2 Harmony	*Refer to "Table HR Harmony"
** ** 05 19	00 00 00 02	00 00 -	HR :HR2 Pre Delay	*Refer to "Table Pre Delay"
** ** 05 1A#		- 02 33		
** ** 05 1B	00 00 00 01	00 - 64	HR :HR2 Level	0 - 100
** ** 05 1C	00 00 00 01	00 - 0B	HR :Key	C(Am) - B(G#m)
** ** 05 1D	00 00 00 01	00 - 64	HR :Direct Level	0 - 100
** ** 05 1E	00 00 00 01	00 - 02	PS :Voice	00 : 1-Voice 01 : 2-Mono 02 : 2-Stereo
** ** 05 1F	00 00 00 01	00 - 03	PS :PS1 Mode	00 : Fast 01 : Medium 02 : Slow 03 : Mono
** ** 05 20	00 00 00 01	00 - 30	PS :PS1 Pitch	-24 - +24
** ** 05 21	00 00 00 01	00 - 64	PS :PS1 Fine	-50 - +50
** ** 05 22	00 00 00 02	00 00 -	PS :PS1 Pre Delay	*Refer to "Table Pre Delay"
** ** 05 23#		- 02 33		
** ** 05 24	00 00 00 01	00 - 64	PS :PS1 Feedback	0 - 100
** ** 05 25	00 00 00 01	00 - 64	PS :PS1 Level	0 - 100
** ** 05 26	00 00 00 01	00 - 03	PS :PS2 Mode	00 : Fast 01 : Medium 02 : Slow 03 : Mono
** ** 05 27	00 00 00 01	00 - 30	PS :PS2 Pitch	-24 - +24
** ** 05 28	00 00 00 01	00 - 64	PS :PS2 Fine	-50 - +50
** ** 05 29	00 00 00 02	00 00 -	PS :PS2 Pre Delay	*Refer to "Table Pre Delay"
** ** 05 2A#		- 02 33		

** ** 05 2B	00 00 00 01	00 - 64	PS :PS2 Level	0 - 100
** ** 05 2C	00 00 00 01	00 - 64	PS :Direct Level	0 - 100
** ** 05 2D	00 00 00 01	00 - 03	OC :Range	*Refer to "Table OC Range"
** ** 05 2E	00 00 00 01	00 - 64	OC :Octave Level	0 - 100
** ** 05 2F	00 00 00 01	00 - 64	OC :Direct Level	0 - 100
** ** 05 30	00 00 00 01	00 - 30	PB :Pitch Min	-24 - +24
** ** 05 31	00 00 00 01	00 - 30	PB :Pitch Max	-24 - +24
** ** 05 32	00 00 00 01	00 - 64	PB :Pdl Position	0 - 100
** ** 05 33	00 00 00 01	00 - 64	PB :Effect Level	0 - 100
** ** 05 34	00 00 00 01	00 - 64	PB :Direct Level	0 - 100
** ** 05 35	00 00 00 01	00 - 10	2CE:Xover Frequency	*Refer to "Table Xover Frequency"
** ** 05 36	00 00 00 01	00 - 71	2CE:Low Rate	*Refer to "Table Rate"
** ** 05 37	00 00 00 01	00 - 64	2CE:Low Depth	0 - 100
** ** 05 38	00 00 00 01	00 - 50	2CE:Low Pre Delay	0.0ms - 40.0ms (0.5ms step)
** ** 05 39	00 00 00 01	00 - 64	2CE:Low Level	0 - 100
** ** 05 3A	00 00 00 01	00 - 71	2CE:High Rate	*Refer to "Table Rate"
** ** 05 3B	00 00 00 01	00 - 64	2CE:High Depth	0 - 100
** ** 05 3C	00 00 00 01	00 - 50	2CE:High Pre Delay	0.0ms - 40.0ms (0.5ms step)
** ** 05 3D	00 00 00 01	00 - 64	2CE:High Level	0 - 100
** ** 05 3E	00 00 00 01	00 - 64	PAN:Wave Shape	0 - 100
** ** 05 3F	00 00 00 01	00 - 71	PAN:Rate	*Refer to "Table Rate"
** ** 05 40	00 00 00 01	00 - 64	PAN:Depth	0 - 100
** ** 05 41	00 00 00 01	00 - 71	VB :Rate	*Refer to "Table Rate"
** ** 05 42	00 00 00 01	00 - 64	VB :Depth	0 - 100
** ** 05 43	00 00 00 01	00 - 01	VB :Trigger	00 : Off 01 : On
** ** 05 44	00 00 00 01	00 - 64	VB :Rise Time	0 - 100
** ** 05 45	00 00 00 01	00 - 71	UV :Rate	*Refer to "Table Rate"
** ** 05 46	00 00 00 01	00 - 64	UV :Depth	0 - 100
** ** 05 47	00 00 00 01	00 - 64	UV :Level	0 - 100
** ** 05 48	00 00 00 01	00 - 01	RT :Speed Select	00:slow, 01:fast
** ** 05 49	00 00 00 01	00 - 71	RT :Rate(Slow)	*Refer to "Table Rate"
** ** 05 4A	00 00 00 01	00 - 71	RT :Rate(Fast)	*Refer to "Table Rate"
** ** 05 4B	00 00 00 01	00 - 64	RT :Rise Time	0 - 100
** ** 05 4C	00 00 00 01	00 - 64	RT :Fall Time	0 - 100
** ** 05 4D	00 00 00 01	00 - 64	RT :Depth	0 - 100
** ** 05 4E	00 00 00 02	00 00 -	SDD:Delay Time	*Refer to "Table SDD Delay Time"
** ** 05 4F#		- 03 17		
** ** 05 50	00 00 00 01	00 - 64	SDD:Feedback	0 - 100
** ** 05 51	00 00 00 01	00 - 78	SDD:Effect Level	0 - 120
** ** 05 52	00 00 00 01	00 - 02	HU :Mode	00 : Picking 01 : Auto 02 : Random
** ** 05 53	00 00 00 01	00 - 04	HU :Vowel 1	00 : 'a' Mode = Picking, Auto 01 : 'e' 02 : 'i' 03 : 'o' 04 : 'u'
** ** 05 54	00 00 00 01	00 - 04	HU :Vowel 2	00 : 'a' Mode = Picking, Auto 01 : 'e' 02 : 'i' 03 : 'o' 04 : 'u'
** ** 05 55	00 00 00 01	00 - 64	HU :Sensitivity	0 - 100 Mode = Picking
** ** 05 56	00 00 00 01	00 - 71	HU :Rate	*Refer to "Table Rate"
** ** 05 57	00 00 00 01	00 - 64	HU :Depth	0 - 100
** ** 05 58	00 00 00 01	00 - 64	HU :Manual	0 - 100 Mode = Auto
** ** 05 59	00 00 00 01	00 - 64	HU :Level	0 - 100
** ** 05 5A	00 00 00 01	00 - 13	SL :Pattern	00 : P1 : 13 : P20
** ** 05 5B	00 00 00 01	00 - 71	SL :Rate	*Refer to "Table Rate"
** ** 05 5C	00 00 00 01	00 - 64	SL :Trigger Sensitivity	0 - 100
** ** 05 5D	00 00 00 01	00 - 27	AR :Phrase	Preset1 - Preset30, User1 - User10
** ** 05 5E	00 00 00 01	00 - 01	AR :Loop	00 : Off 01 : On
** ** 05 5F	00 00 00 01	00 - 71	AR :Tempo	*Refer to "Table Rate"
** ** 05 60	00 00 00 01	00 - 64	AR :Sensitivity	0 - 100
** ** 05 61	00 00 00 01	00 - 0B	AR :Key	C(Am) - B(G#m), Phrase = Preset1-30
** ** 05 62	00 00 00 01	00 - 64	AR :Attack	0 - 100
** ** 05 63	00 00 00 01	00 - 01	AR :Hold	00 : Off 01 : On
** ** 05 64	00 00 00 01	00 - 64	AR :Effect Level	0 - 100
** ** 05 65	00 00 00 01	00 - 64	AR :Direct Level	0 - 100
** ** 05 66	00 00 00 01	00 - 64	SYN:Sensitivity	0 - 100
** ** 05 67	00 00 00 01	00 - 03	SYN:Wave	00 : Square 01 : Saw 02 : Brass 03 : Bow
** ** 05 68	00 00 00 01	00 - 01	SYN:Chromatic	00 : Off Wave = Square, Saw 01 : On
** ** 05 69	00 00 00 01	00 - 02	SYN:Octave Shift	00 : 0 Wave = Square, Saw 01 : -1 02 : -2
** ** 05 6A	00 00 00 01	00 - 64	SYN:PWM Rate	0 - 100 Wave = Square
** ** 05 6B	00 00 00 01	00 - 64	SYN:PWM Depth	0 - 100 Wave = Square
** ** 05 6C	00 00 00 01	00 - 64	SYN:Cutoff Frequency	0 - 100
** ** 05 6D	00 00 00 01	00 - 64	SYN:Resonance	0 - 100
** ** 05 6E	00 00 00 01	00 - 64	SYN:FLT.Sensitivity	0 - 100
** ** 05 6F	00 00 00 01	00 - 64	SYN:FLT.Decay	0 - 100
** ** 05 70	00 00 00 01	00 - 64	SYN:FLT.Depth	00 : -100 01 : -98 : 63 : +98 64 : +100
** ** 05 71	00 00 00 01	00 - 65	SYN:Attack	00 : Decay 01 : 0 : 65 : 100
** ** 05 72	00 00 00 01	00 - 64	SYN:Release	0 - 100
** ** 05 73	00 00 00 01	00 - 64	SYN:Velocity	0 - 100
** ** 05 74	00 00 00 01	00 - 01	SYN:Hold	00 : Off Wave = Square, Saw 01 : On
** ** 05 75	00 00 00 01	00 - 64	SYN:Synth Level	0 - 100
** ** 05 76	00 00 00 01	00 - 64	SYN:Direct Level	0 - 100
** ** 05 77	00 00 00 01	00 - 01	BS :Character	00 : Loose 01 : Tight
** ** 05 78	00 00 00 01	00 - 64	BS :Level	0 - 100
** ** 05 79	00 00 00 01	00 - 28	SEQ:Low EQ	-20dB - +20dB
** ** 05 7A	00 00 00 01	00 - 1B	SEQ:Low-Middle Frequency	*Refer to "Table EQ Middle Frequency"
** ** 05 7B	00 00 00 01	00 - 05	SEQ:Low-Middle Q	*Refer to "Table EQ Middle Q"
** ** 05 7C	00 00 00 01	00 - 28	SEQ:Low-Middle EQ	-20dB - +20dB
** ** 05 7D	00 00 00 01	00 - 1B	SEQ:High-Middle Frequency	*Refer to "Table EQ Middle Frequency"
** ** 05 7E	00 00 00 01	00 - 05	SEQ:High-Middle Q	*Refer to "Table EQ Middle Q"
** ** 05 7F	00 00 00 01	00 - 28	SEQ:High-Middle EQ	-20dB - +20dB

```
** ** 06 00     00 00 00 01     00 - 28         SEQ:High EQ             -20dB - +20dB
** ** 06 01     00 00 00 01     00 - 28         SEQ:Level               -20dB - +20dB


--- DELAY ---
** ** 07 00     00 00 00 01     00 - 01         DD :On/Off              00 : Off
                                                                       01 : On
** ** 07 01     00 00 00 01     00 - 02         DD :Type                00 : Single
                                                                       01 : Pan
                                                                       02 : Stereo
** ** 07 02     00 00 00 01     00 - 66         DD :DlyTime             *Refer to "Table DD Delay Time"
** ** 07 03     00 00 00 01     00 - 14         DD :DlyTime.F           0 - 20ms
** ** 07 04     00 00 00 01     00 - 64         DD :Tap Time            0% - 100%       Type = Pan
** ** 07 05     00 00 00 01     00 - 64         DD :Feedback            0 - 100
** ** 07 06     00 00 00 01     00 - 09         DD :High Cut Filter     *Refer to "Table High Cut"
** ** 07 07     00 00 00 01     00 - 78         DD :Effect Level        0 - 120


--- CHORUS ---
** ** 08 00     00 00 00 01     00 - 01         CE :On/Off              00 : Off
                                                                       01 : On
** ** 08 01     00 00 00 01     00 - 02         CE :Mode                00 : Mono
                                                                       01 : Stereo1
                                                                       02 : Stereo2
** ** 08 02     00 00 00 01     00 - 71         CE :Rate                *Refer to "Table Rate"
** ** 08 03     00 00 00 01     00 - 64         CE :Depth               0 - 100
** ** 08 04     00 00 00 01     00 - 50         CE :Pre Delay           0.0ms - 40.0ms(0.5ms step)
** ** 08 05     00 00 00 01     00 - 0A         CE :Low Cut Filter      *Refer to "Table Low Cut"
** ** 08 06     00 00 00 01     00 - 09         CE :High Cut Filter     *Refer to "Table High Cut"
** ** 08 07     00 00 00 01     00 - 64         CE :Effect Level        0 - 100


--- REVERB ---
** ** 09 00     00 00 00 01     00 - 01         RV :On/Off              00 : Off
                                                                       01 : On
** ** 09 01     00 00 00 01     00 - 04         RV :Type                *Refer to "Table Reverb Type"
** ** 09 02     00 00 00 01     00 - 63         RV :Reverb Time         0.1s - 10.0s(0.1s step)
** ** 09 03     00 00 00 01     00 - 64         RV :Pre Delay           0ms - 100ms
** ** 09 04     00 00 00 01     00 - 0A         RV :Low Cut Filter      *Refer to "Table Low Cut"
** ** 09 05     00 00 00 01     00 - 09         RV :High Cut Filter     *Refer to "Table High Cut"
** ** 09 06     00 00 00 01     00 - 0A         RV :Density             0 - 10
** ** 09 07     00 00 00 01     00 - 64         RV :Effect Level        0 - 100


--- MASTER ---
** ** 0A 00     00 00 00 01     00 - 64         Patch Level             00 : 0
                                                                       01 : 2
                                                                         :
                                                                       64 : 200
** ** 0A 01     00 00 00 02     00 00 -         Master BPM              00 00 : 40
** ** 0A 02#                    - 01 52                                    :
                                                                       00 7F : 167
                                                                       01 00 : 168
                                                                         :
                                                                       01 52 : 250
** ** 0A 03     00 00 00 01     00 - 01         NS :On/Off              00 : Off
                                                                       01 : On
** ** 0A 04     00 00 00 01     00 - 64         NS :Threshold           0 - 100
** ** 0A 05     00 00 00 01     00 - 64         NS :Release             0 - 100
** ** 0A 06     00 00 00 01     00 - 64         FV : Level              0 - 100


--- INPUT SELECT ---
** ** 0B 00     00 00 00 01     00 - 05         Input Select            00 : Guitar
                                                                       01 : Bass
                                                                       02 : Microphone
                                                                       03 : USB(Gtr/Mic)
                                                                       04 : USB(Bass)
                                                                       05 : AUX


--- EFFECT CHAIN ---
** ** 0C 00     00 00 00 01     00 - 0B         Chain 1                 *Refer to "Table Chain"
** ** 0C 01#    00 00 00 01     00 - 0B         Chain 2                 *Refer to "Table Chain"
** ** 0C 02#    00 00 00 01     00 - 0B         Chain 3                 *Refer to "Table Chain"
** ** 0C 03#    00 00 00 01     00 - 0B         Chain 4                 *Refer to "Table Chain"
** ** 0C 04#    00 00 00 01     00 - 0B         Chain 5                 *Refer to "Table Chain"
** ** 0C 05#    00 00 00 01     00 - 0B         Chain 6                 *Refer to "Table Chain"
** ** 0C 06#    00 00 00 01     00 - 0B         Chain 7                 *Refer to "Table Chain"
** ** 0C 07#    00 00 00 01     00 - 0B         Chain 8                 *Refer to "Table Chain"
** ** 0C 08#    00 00 00 01     00 - 0B         Chain 9                 *Refer to "Table Chain"
** ** 0C 09#    00 00 00 01     00 - 0B         Chain 10                *Refer to "Table Chain"
** ** 0C 0A#    00 00 00 01     00 - 0B         Chain 11                *Refer to "Table Chain"
** ** 0C 0B#    00 00 00 01     00 - 0B         Chain 12                *Refer to "Table Chain"
```

* Rules for exchanging effect positions

The same effect cannot be used more than once.

```
--- NAME ---
** ** 0D 00     00 00 00 01     20 - 7F         Name 1                  *Refer to "Table Name"
** ** 0D 01     00 00 00 01     20 - 7F         Name 2                  *Refer to "Table Name"
       :        :               :              :                           :
** ** 0D 0F     00 00 00 01     20 - 7F         Name 16                 *Refer to "Table Name"


--- ASSIGN 1 ---
** ** 0E 00     00 00 00 01     00 - 01         ASSIGN 1:On/Off         00 : Off
                                                                       01 : On
** ** 0E 01     00 00 00 02     00 00 -         ASSIGN 1:Target         *Refer to "Table Target"
** ** 0E 02#                    - 01 7F
** ** 0E 03     00 00 00 02     xx xx -         ASSIGN 1:Target Min     [Target Param Min <= Data <= Target Param Max]
** ** 0E 04#                    - xx xx
** ** 0E 05     00 00 00 02     xx xx -         ASSIGN 1:Target Max     [Target Param Min <= Data <= Target Param Max]
** ** 0E 06#                    - xx xx
** ** 0E 07     00 00 00 01     00 - 41         ASSIGN 1:Source         *Refer to "Table Source"
** ** 0E 08     00 00 00 01     00 - 01         ASSIGN 1:Source Mode    00 : Normal
                                                                       01 : Toggle
** ** 0E 09     00 00 00 01     00 - 7F         ASSIGN 1:Source Act.Range Low   0 - 127
** ** 0E 0A     00 00 00 01     00 - 7F         ASSIGN 1:Source Act.Range High  0 - 127
```

```
--- ASSIGN 2 ---
** ** 0F 00     00 00 00 01     00 - 01         ASSIGN 2:On/Off         00 : Off
                                                                       01 : On
** ** 0F 01     00 00 00 02     00 00 -         ASSIGN 2:Target         *Refer to "Table Target"
** ** 0F 02#                    - 01 7F
** ** 0F 03     00 00 00 02     xx xx -         ASSIGN 2:Target Min     [Target Param Min <= Data <= Target Param Max]
** ** 0F 04#                    - xx xx
** ** 0F 05     00 00 00 02     xx xx -         ASSIGN 2:Target Max     [Target Param Min <= Data <= Target Param Max]
** ** 0F 06#                    - xx xx
** ** 0F 07     00 00 00 01     00 - 41         ASSIGN 2:Source         *Refer to "Table Source"
** ** 0F 08     00 00 00 01     00 - 01         ASSIGN 2:Source Mode    00 : Normal
                                                                       01 : Toggle
** ** 0F 09     00 00 00 01     00 - 7F         ASSIGN 2:Source Act.Range Low   0 - 127
** ** 0F 0A     00 00 00 01     00 - 7F         ASSIGN 2:Source Act.Range High  0 - 127

--- ASSIGN 3 ---
** ** 10 00     00 00 00 01     00 - 01         ASSIGN 3:On/Off         00 : Off
                                                                       01 : On
** ** 10 01     00 00 00 02     00 00 -         ASSIGN 3:Target         *Refer to "Table Target"
** ** 10 02#                    - 01 7F
** ** 10 03     00 00 00 02     xx xx -         ASSIGN 3:Target Min     [Target Param Min <= Data <= Target Param Max]
** ** 10 04#                    - xx xx
** ** 10 05     00 00 00 02     xx xx -         ASSIGN 3:Target Max     [Target Param Min <= Data <= Target Param Max]
** ** 10 06#                    - xx xx
** ** 10 07     00 00 00 01     00 - 41         ASSIGN 3:Source         *Refer to "Table Source"
** ** 10 08     00 00 00 01     00 - 01         ASSIGN 3:Source Mode    00 : Normal
                                                                       01 : Toggle
** ** 10 09     00 00 00 01     00 - 7F         ASSIGN 3:Source Act.Range Low   0 - 127
** ** 10 0A     00 00 00 01     00 - 7F         ASSIGN 3:Source Act.Range High  0 - 127

--- ASSIGN 4 ---
** ** 11 00     00 00 00 01     00 - 01         ASSIGN 4:On/Off         00 : Off
                                                                       01 : On
** ** 11 01     00 00 00 02     00 00 -         ASSIGN 4:Target         *Refer to "Table Target"
** ** 11 02#                    - 01 7F
** ** 11 03     00 00 00 02     xx xx -         ASSIGN 4:Target Min     [Target Param Min <= Data <= Target Param Max]
** ** 11 04#                    - xx xx
** ** 11 05     00 00 00 02     xx xx -         ASSIGN 4:Target Max     [Target Param Min <= Data <= Target Param Max]
** ** 11 06#                    - xx xx
** ** 11 07     00 00 00 01     00 - 41         ASSIGN 4:Source         *Refer to "Table Source"
** ** 11 08     00 00 00 01     00 - 01         ASSIGN 4:Source Mode    00 : Normal
                                                                       01 : Toggle
** ** 11 09     00 00 00 01     00 - 7F         ASSIGN 4:Source Act.Range Low   0 - 127
** ** 11 0A     00 00 00 01     00 - 7F         ASSIGN 4:Source Act.Range High  0 - 127

--- ASSIGN 5 ---
** ** 12 00     00 00 00 01     00 - 01         ASSIGN 5:On/Off         00 : Off
                                                                       01 : On
** ** 12 01     00 00 00 02     00 00 -         ASSIGN 5:Target         *Refer to "Table Target"
** ** 12 02#                    - 01 7F
** ** 12 03     00 00 00 02     xx xx -         ASSIGN 5:Target Min     [Target Param Min <= Data <= Target Param Max]
** ** 12 04#                    - xx xx
** ** 12 05     00 00 00 02     xx xx -         ASSIGN 5:Target Max     [Target Param Min <= Data <= Target Param Max]
** ** 12 06#                    - xx xx
** ** 12 07     00 00 00 01     00 - 41         ASSIGN 5:Source         *Refer to "Table Source"
** ** 12 08     00 00 00 01     00 - 01         ASSIGN 5:Source Mode    00 : Normal
                                                                       01 : Toggle
** ** 12 09     00 00 00 01     00 - 7F         ASSIGN 5:Source Act.Range Low   0 - 127
** ** 12 0A     00 00 00 01     00 - 7F         ASSIGN 5:Source Act.Range High  0 - 127

--- ASSIGN 6 ---
** ** 13 00     00 00 00 01     00 - 01         ASSIGN 6:On/Off         00 : Off
                                                                       01 : On
** ** 13 01     00 00 00 02     00 00 -         ASSIGN 6:Target         *Refer to "Table Target"
** ** 13 02#                    - 01 7F
** ** 13 03     00 00 00 02     xx xx -         ASSIGN 6:Target Min     [Target Param Min <= Data <= Target Param Max]
** ** 13 04#                    - xx xx
** ** 13 05     00 00 00 02     xx xx -         ASSIGN 6:Target Max     [Target Param Min <= Data <= Target Param Max]
** ** 13 06#                    - xx xx
** ** 13 07     00 00 00 01     00 - 41         ASSIGN 6:Source         *Refer to "Table Source"
** ** 13 08     00 00 00 01     00 - 01         ASSIGN 6:Source Mode    00 : Normal
                                                                       01 : Toggle
** ** 13 09     00 00 00 01     00 - 7F         ASSIGN 6:Source Act.Range Low   0 - 127
** ** 13 0A     00 00 00 01     00 - 7F         ASSIGN 6:Source Act.Range High  0 - 127

--- ASSIGN 7 ---
** ** 14 00     00 00 00 01     00 - 01         ASSIGN 7:On/Off         00 : Off
                                                                       01 : On
** ** 14 01     00 00 00 02     00 00 -         ASSIGN 7:Target         *Refer to "Table Target"
** ** 14 02#                    - 01 7F
** ** 14 03     00 00 00 02     xx xx -         ASSIGN 7:Target Min     [Target Param Min <= Data <= Target Param Max]
** ** 14 04#                    - xx xx
** ** 14 05     00 00 00 02     xx xx -         ASSIGN 7:Target Max     [Target Param Min <= Data <= Target Param Max]
** ** 14 06#                    - xx xx
** ** 14 07     00 00 00 01     00 - 41         ASSIGN 7:Source         *Refer to "Table Source"
** ** 14 08     00 00 00 01     00 - 01         ASSIGN 7:Source Mode    00 : Normal
                                                                       01 : Toggle
** ** 14 09     00 00 00 01     00 - 7F         ASSIGN 7:Source Act.Range Low   0 - 127
** ** 14 0A     00 00 00 01     00 - 7F         ASSIGN 7:Source Act.Range High  0 - 127

--- ASSIGN 8 ---
** ** 15 00     00 00 00 01     00 - 01         ASSIGN 8:On/Off         00 : Off
                                                                       01 : On
** ** 15 01     00 00 00 02     00 00 -         ASSIGN 8:Target         *Refer to "Table Target"
** ** 15 02#                    - 01 7F
** ** 15 03     00 00 00 02     xx xx -         ASSIGN 8:Target Min     [Target Param Min <= Data <= Target Param Max]
** ** 15 04#                    - xx xx
** ** 15 05     00 00 00 02     xx xx -         ASSIGN 8:Target Max     [Target Param Min <= Data <= Target Param Max]
** ** 15 06#                    - xx xx
** ** 15 07     00 00 00 01     00 - 41         ASSIGN 8:Source         *Refer to "Table Source"
** ** 15 08     00 00 00 01     00 - 01         ASSIGN 8:Source Mode    00 : Normal
                                                                       01 : Toggle
** ** 15 09     00 00 00 01     00 - 7F         ASSIGN 8:Source Act.Range Low   0 - 127
** ** 15 0A     00 00 00 01     00 - 7F         ASSIGN 8:Source Act.Range High  0 - 127
```

Table Patch Change <Patch Change>

Address(H)	Size(H)	Data(H)	Parameter	Description
--- PatchChange ---				
0A 00 00 00	00 00 00 02	00 00 -	Patch No.	00 00 : U001
0A 00 00 01#		- 01 47		:
				01 47 : P200

Table Patch Write <Patch Write>

Address(H)	Size(H)	Data(H)	Parameter	Description
--- PatchWrite ---				
0A 01 00 00	00 00 00 02	00 00 -	Patch No.	00 00 : U001
0A 01 00 01#		- 00 63	(user area)	:
				00 63 : U100

Table Current Patch <Current Patch>

Address(H)	Size(H)	Data(H)	Parameter	Description
--- CurrentPatch ---				
0A 02 00 00	00 00 00 02	00 00 -	Patch No.	00 00 : U001
0A 02 00 01#		- 01 47		:
				01 47 : P200

Table Patch Initialize <Patch Initialize>

Address(H)	Size(H)	Data(H)	Parameter	Description
--- PatchInitialize ---				
0A 03 00 00	00 00 00 01	00 - 01	Patch Initialize	00 : none
				01 : Patch Initialize

Table AMP Ch Copy <AMP Ch Copy>

Address(H)	Size(H)	Data(H)	Parameter	Description
--- AMPChCopy ---				
0A 04 00 00	00 00 00 01	00 - 02	AMP Ch Copy	00 : A ch
				01 : B ch
				02 : C ch

Table Quick Fx Number <Quick Fx Number>

Address(H)	Size(H)	Data(H)	Parameter	Description
--- QuickSelect ---				
0B 00 00 00	00 00 00 01	00 - **	FX-1 Quick Fx Number	00 : temp
				01 : P01
				02 : P02
				:
0B 00 01 00	00 00 00 01	00 - **	COMP Quick Fx Number	
0B 00 02 00	00 00 00 01	00 - **	OD/DS Quick Fx Number	
0B 00 03 00	00 00 00 01	00 - **	PRE Quick Fx Number	
0B 00 04 00	00 00 00 01	00 - **	EQ Quick Fx Number	
0B 00 05 00	00 00 00 01	00 - **	FX-2 Quick Fx Number	
0B 00 06 00	00 00 00 01	00 - **	DELAY Quick Fx Number	
0B 00 07 00	00 00 00 01	00 - **	CHORUS Quick Fx Number	
0B 00 08 00	00 00 00 01	00 - **	REVERB Quick Fx Number	
0B 00 09 00	00 00 00 01	00 - **	ASSSIGN1 Quick Fx Number	
0B 00 0A 00	00 00 00 01	00 - **	ASSSIGN2 Quick Fx Number	
0B 00 0B 00	00 00 00 01	00 - **	ASSSIGN3 Quick Fx Number	
0B 00 0C 00	00 00 00 01	00 - **	ASSSIGN4 Quick Fx Number	
0B 00 0D 00	00 00 00 01	00 - **	ASSSIGN5 Quick Fx Number	
0B 00 0E 00	00 00 00 01	00 - **	ASSSIGN6 Quick Fx Number	
0B 00 0F 00	00 00 00 01	00 - **	ASSSIGN7 Quick Fx Number	
0B 00 10 00	00 00 00 01	00 - **	ASSSIGN8 Quick Fx Number	

Table Quick Fx Count <Quick Fx Count>

Address(H)	Size(H)	Data(H)	Parameter	Description
--- QuickSelect ---				
0B 01 00 00	00 00 00 01	00 - **	FX-1 Quick Fx Count	
0B 01 01 00	00 00 00 01	00 - **	COMP Quick Fx Count	
0B 01 02 00	00 00 00 01	00 - **	OD/DS Quick Fx Count	
0B 01 03 00	00 00 00 01	00 - **	PRE Quick Fx Count	
0B 01 04 00	00 00 00 01	00 - **	EQ Quick Fx Count	
0B 01 05 00	00 00 00 01	00 - **	FX-2 Quick Fx Count	
0B 01 06 00	00 00 00 01	00 - **	DELAY Quick Fx Count	
0B 01 07 00	00 00 00 01	00 - **	CHORUS Quick Fx Count	
0B 01 08 00	00 00 00 01	00 - **	REVERB Quick Fx Count	
0B 01 09 00	00 00 00 01	00 - **	ASSSIGN Quick Fx Count	

Table TUNER/METER <TUNER/METER Mode>

Address(H)	Size(H)	Data(H)	Parameter	Description
--- TUNER/METER Mode ---				
0C 00 00 00	00 00 00 01	00 - 02	Mode	00 : exit
				01 : tuner mode ON
				02 : meter mode ON
0C 00 00 01	00 00 00 02	00 ** - 0C **	TUNER Note	C,C#,D,D#,E,F,F#,G,G#,A,A#,B,NO SIGNAL
		↓ ↓		
0C 00 00 02#		** 00 - ** 7F	TUNER Cent	00 : NO SIGNAL
				:
				40 : 0
				:
				7f : +63
0C 00 00 03	00 00 00 02	00 ** - 30 **	METER peak data	00 - 30
		↓ ↓		
0C 00 00 04#		** 00 - ** 30	METER data	00 - 30

Table Quick Fx Target <Quick Fx: Assign Target>

Data(H)	Description
00 00 00 00	FX1:On/Off
00 00 00 01	FX1:FX Select
00 00 00 02	PW :Type
00 00 00 03	PW :Pdl Position
00 00 00 04	PW :Level
00 00 00 05	AW :Mode
00 00 00 06	AW :Polarity
00 00 00 07	AW :Sensitivity
00 00 00 08	AW :Frequency
00 00 00 09	AW :Peak
00 00 00 0A	AW :Rate
00 00 00 0B	AW :Depth
00 00 00 0C	AW :Level
00 00 00 0D	TM :Type
00 00 00 0E	TM :Low
00 00 00 0F	TM :High
00 00 01 00	TM :Level
00 00 01 01	ACS:Type
00 00 01 02	ACS:Sustain
00 00 01 03	ACS:Attack
00 00 01 04	ACS:Tone
00 00 01 05	ACS:Level
00 00 01 06	LM :Type
00 00 01 07	LM :Attack
00 00 01 08	LM :Threshold
00 00 01 09	LM :Ratio
00 00 01 0A	LM :Release
00 00 01 0B	LM :Level
00 00 01 0C	ENH :Sensitivity
00 00 01 0D	ENH :Frequency
00 00 01 0E	ENH :Mix Level
00 00 01 0F	SG :Sensitivity
00 00 02 00	SG :Rise Time
00 00 02 01	TR :Wave Shape
00 00 02 02	TR :Rate
00 00 02 03	TR :Depth
00 00 02 04	DF :Tone
00 00 02 05	DF :Sensitivity
00 00 02 06	DF :Attack
00 00 02 07	DF :Depth
00 00 02 08	DF :Resonance
00 00 02 09	DF :Effect Level
00 00 02 0A	DF :Direct Level
00 00 02 0B	RM :Mode
00 00 02 0C	RM :Frequency
00 00 02 0D	RM :Effect Level
00 00 02 0E	RM :Direct Level
00 00 02 0F	FB :Mode
00 00 03 00	FB :Rise Time
00 00 03 01	FB :Rise Time(Å£)
00 00 03 02	FB :F.B.Level
00 00 03 03	FB :F.B.Level(Å£)
00 00 03 04	FB :Vibrato Rate
00 00 03 05	FB :Vibrato Dept
00 00 03 06	CS :On/Off
00 00 03 07	CS :Sustain
00 00 03 08	CS :Level
00 00 03 09	OD :On/Off
00 00 03 0A	OD :Type
00 00 03 0B	OD :Drive
00 00 03 0C	OD :Bass
00 00 03 0D	OD :Treble
00 00 03 0E	OD :Effect Level
00 00 03 0F	OD :Direct Level
00 00 04 00	PRE/SP:On/Off
00 00 04 01	PRE/SP:Channel Select
00 00 04 02	PRE/SP:Type
00 00 04 03	PRE/SP:Gain
00 00 04 04	PRE/SP:Bass
00 00 04 05	PRE/SP:Middle
00 00 04 06	PRE/SP:Treble
00 00 04 07	PRE/SP:Presence
00 00 04 08	PRE/SP:Amp Level
00 00 04 09	PRE/SP:Bright
00 00 04 0A	PRE/SP:Gain SW
00 00 04 0B	PRE/SP:Speaker Type
00 00 04 0C	PRE/SP:Mic Type
00 00 04 0D	PRE/SP:Mic Distance
00 00 04 0E	PRE/SP:Mic Position
00 00 04 0F	PRE/SP:Mic Level
00 00 05 00	PRE/SP:Direct Level
00 00 05 01	EQ :On/Off
00 00 05 02	EQ :Low EQ
00 00 05 03	EQ :Low-Middle Frequency
00 00 05 04	EQ :Low-Middle Q
00 00 05 05	EQ :Low-Middle EQ
00 00 05 06	EQ :High-Middle Frequency
00 00 05 07	EQ :High-Middle Q
00 00 05 08	EQ :High-Middle EQ
00 00 05 09	EQ :High EQ
00 00 05 0A	EQ :Level
00 00 05 0B	FX2:On/Off
00 00 05 0C	FX2:FX Select
00 00 05 0D	PH :Type
00 00 05 0E	PH :Rate
00 00 05 0F	PH :Depth
00 00 06 00	PH :Manual
00 00 06 01	PH :Resonance
00 00 06 02	PH :Step Rate
00 00 06 03	PH :Effect Level
00 00 06 04	PH :Direct Level
00 00 06 05	FL :Rate
00 00 06 06	FL :Depth
00 00 06 07	FL :Manual
00 00 06 08	FL :Resonance
00 00 06 09	FL :Separation
00 00 06 0A	FL :Low Cut Filter
00 00 06 0B	FL :Effect Level
00 00 06 0C	FL :Direct Level
00 00 06 0D	HR :Voice
00 00 06 0E	HR :HR1 Harmony
00 00 06 0F	HR :HR1 Pre Delay
00 00 07 00	HR :HR1 Feedback
00 00 07 01	HR :HR1 Level
00 00 07 02	HR :HR2 Harmony
00 00 07 03	HR :HR2 Pre Delay
00 00 07 04	HR :HR2 Level
00 00 07 05	HR :Key
00 00 07 06	HR :Direct Level
00 00 07 07	PS :Voice
00 00 07 08	PS :PS1 Mode
00 00 07 09	PS :PS1 Pitch
00 00 07 0A	PS :PS1 Fine
00 00 07 0B	PS :PS1 Pre Delay
00 00 07 0C	PS :PS1 Feedback
00 00 07 0D	PS :PS1 Level
00 00 07 0E	PS :PS2 Mode
00 00 07 0F	PS :PS2 Pitch
00 00 08 00	PS :PS2 Fine
00 00 08 01	PS :PS2 Pre Delay
00 00 08 02	PS :PS2 Level
00 00 08 03	PS :Direct Level
00 00 08 04	OC :Range
00 00 08 05	OC :Octave Level
00 00 08 06	OC :Direct Level
00 00 08 07	PB :Pitch Min
00 00 08 08	PB :Pitch Max
00 00 08 09	PB :Pdl Position
00 00 08 0A	PB :Effect Level
00 00 08 0B	PB :Direct Level
00 00 08 0C	2CE:Xover Frequency
00 00 08 0D	2CE:Low Rate
00 00 08 0E	2CE:Low Depth
00 00 08 0F	2CE:Low Pre Delay
00 00 09 00	2CE:Low Level
00 00 09 01	2CE:High Rate
00 00 09 02	2CE:High Depth
00 00 09 03	2CE:High Pre Delay
00 00 09 04	2CE:High Level
00 00 09 05	PAN:Wave Shape
00 00 09 06	PAN:Rate
00 00 09 07	PAN:Depth
00 00 09 08	VB :Rate
00 00 09 09	VB :Depth
00 00 09 0A	VB :Trigger
00 00 09 0B	VB :Rise Time
00 00 09 0C	UV :Rate
00 00 09 0D	UV :Depth
00 00 09 0E	UV :Level
00 00 09 0F	RT :Speed Select
00 00 0A 00	RT :Rate(Slow)
00 00 0A 01	RT :Rate(Fast)
00 00 0A 02	RT :Rise Time
00 00 0A 03	RT :Fall Time
00 00 0A 04	RT :Depth
00 00 0A 05	SDD:Delay Time
00 00 0A 06	SDD:Feedback
00 00 0A 07	SDD:Effect Level
00 00 0A 08	HU :Mode
00 00 0A 09	HU :Vowel 1
00 00 0A 0A	HU :Vowel 2
00 00 0A 0B	HU :Sensitivity
00 00 0A 0C	HU :Rate
00 00 0A 0D	HU :Depth
00 00 0A 0E	HU :Manual
00 00 0A 0F	HU :Level
00 00 0B 00	SL :Pattern
00 00 0B 01	SL :Rate
00 00 0B 02	SL :Trigger Sensitivity
00 00 0B 03	AR :Phrase
00 00 0B 04	AR :Loop
00 00 0B 05	AR :Tempo
00 00 0B 06	AR :Sensitivity
00 00 0B 07	AR :Key
00 00 0B 08	AR :Attack
00 00 0B 09	AR :Hold
00 00 0B 0A	AR :Effect Level
00 00 0B 0B	AR :Direct Level
00 00 0B 0C	SYN:Sensitivity
00 00 0B 0D	SYN:Wave
00 00 0B 0E	SYN:Chromatic
00 00 0B 0F	SYN:Octave Shift
00 00 0C 00	SYN:PWM Rate
00 00 0C 01	SYN:PWM Depth
00 00 0C 02	SYN:Cutoff Frequency
00 00 0C 03	SYN:Resonance
00 00 0C 04	SYN:FLT.Sensitivity
00 00 0C 05	SYN:FLT.Decay
00 00 0C 06	SYN:FLT.Depth
00 00 0C 07	SYN:Attack
00 00 0C 08	SYN:Release
00 00 0C 09	SYN:Velocity
00 00 0C 0A	SYN:Hold
00 00 0C 0B	SYN:Synth Level
00 00 0C 0C	SYN:Direct Level
00 00 0C 0D	BS :Character
00 00 0C 0E	BS :Level
00 00 0C 0F	SEQ:Low EQ
00 00 0D 00	SEQ:Low-Middle Frequency
00 00 0D 01	SEQ:Low-Middle Q
00 00 0D 02	SEQ:Low-Middle EQ
00 00 0D 03	SEQ:High-Middle Frequency
00 00 0D 04	SEQ:High-Middle Q
00 00 0D 05	SEQ:High-Middle EQ
00 00 0D 06	SEQ:High EQ
00 00 0D 07	SEQ:Level
00 00 0D 08	DD :On/Off
00 00 0D 09	DD :Type
00 00 0D 0A	DD :DlyTime
00 00 0D 0B	DD :DlyTime.F
00 00 0D 0C	DD :Tap Time
00 00 0D 0D	DD :Feedback
00 00 0D 0E	DD :High Cut Filter
00 00 0D 0F	DD :Effect Level
00 00 0E 00	CE :On/Off

00 00 0E 01	CE :Mode
00 00 0E 02	CE :Rate
00 00 0E 03	CE :Depth
00 00 0E 04	CE :Pre Delay
00 00 0E 05	CE :Low Cut Filter
00 00 0E 06	CE :High Cut Filter
00 00 0E 07	CE :Effect Level
00 00 0E 08	RV :On/Off
00 00 0E 09	RV :Type
00 00 0E 0A	RV :Reverb Time
00 00 0E 0B	RV :Pre Delay
00 00 0E 0C	RV :Low Cut Filter
00 00 0E 0D	RV :High Cut Filter
00 00 0E 0E	RV :Density
00 00 0E 0F	RV :Effect Level
00 00 0F 00	NS :On/Off
00 00 0F 01	NS :Threshold
00 00 0F 02	NS :Release
00 00 0F 03	FV : Level
00 00 0F 04	Patch Level
00 00 0F 05	Master BPM
00 00 0F 06	TUNER On/Off
00 00 0F 07	Master BPM(Tap)
00 00 0F 08	Delay Time(Tap)
00 00 0F 09	Remote Start/Stop
00 00 0F 0A	Patch Level Inc1
00 00 0F 0B	Patch Level Inc2
00 00 0F 0C	Patch Level Dec1
00 00 0F 0D	Patch Level Dec2
00 00 0F 0E	CH Select Inc
00 00 0F 0F	CH Select Dec

Table Rate <Rate>

Data(H)	Description
00	0
:	:
64	100
65	whole note
66	doted half note
67	whole note triplet
68	half note
69	doted quarter note
6A	half note triplet
6B	quarter note
6C	doted eighth note
6D	quarter note triplet
6E	eighth note
6F	doted sixteenth note
70	eighth note triplet
71	sixteenth note

Table High Cut <High Cut>

Data(H)	Description
00	700Hz
01	1.00kHz
02	1.40kHz
03	2.00kHz
04	3.00kHz
05	4.00kHz
06	6.00kHz
07	8.00kHz
08	11.0kHz
09	Flat

Table Low Cut <Low Cut>

Data(H)	Description
00	FLAT
01	55.0Hz
02	110Hz
03	165Hz
04	200Hz
05	280Hz
06	340Hz
07	400Hz
08	500Hz
09	630Hz
0A	800Hz

Table Ratio <Quick Fx, Patch>

Data(H)	Description
00	1:1
01	1.2:1
02	1.4:1
03	1.6:1
04	1.8:1
05	2:1
06	2.3:1
07	2.6:1
08	3:1
09	3.5:1
0A	4:1
0B	5:1
0C	6:1
0D	8:1
0E	10:1
0F	12:1
10	20:1
11	oo:1

Table ENH Frequency <ENH Frequency>

Data(H)	Description
00	800Hz
01	1.00kHz
02	1.25kHz
03	1.60kHz
04	2.00kHz
05	2.50kHz
06	3.15kHz
07	4.00kHz
08	5.00kHz
09	6.30kHz
0A	8.00kHz
0B	10.0kHz

Table OD Type <Quick Fx, Patch : OD Type>

Data(H)	Description
00	Blues OD
01	Turbo OD
02	Booster
03	OD-1
04	T-Scream
05	Natural OD
06	Bass OD
07	Distortion
08	RAT
09	GUV DS
0A	Mild DS
0B	Solid DS
0C	DST+
0D	Metal Zone
0E	R-MAN
0F	Heavy Metal
10	Loud
11	Sharp
12	Mechanical
13	'60s FUZZ
14	Oct FUZZ
15	MUFF FUZZ
16	Custom1
17	Custom2
18	Custom3

Table PRE/SP Type <Quick Fx, Patch : PRE/SP Type>

Data(H)	Description
00	JC-120
01	Jazz Combo
02	Full Range
03	Warm Clean
04	Clean TWIN
05	Pro Crunch
06	Tweed
07	Crunch
08	Blues
09	Wild Crunch
0A	VO Drive
0B	VO Lead
0C	MATCH Drive
0D	Fat MATCH
0E	BG Lead
0F	BG Drive
10	BG Rhythm
11	Smooth Drive
12	MS1959(I)
13	MS1959(II)
14	MS1959(I+II)
15	MS HiGain
16	Power Stack
17	R-FIER Red
18	R-FIER Orng
19	R-FIER Vint
1A	T-Amp Clean
1B	T-Amp Crunch
1C	T-Amp Lead
1D	SLDN
1E	Drive Stack
1F	Lead Stack
20	5150 Drive
21	Metal Stack
22	Metal Lead
23	CONCERT 810
24	SESSION
25	BASS 360
26	T. E.
27	B-MAN
28	FLIP TOP
29	Bass Clean
2A	Bass Crunch
2B	Bass HiGain
2C	Mic Preamp
2D	Custom1
2E	Custom2
2F	Custom3

Table EQ Middle Frequency <EQ(SEQ): Lo(Hi)-Mid f>

Data(H)	Description
00	20.0Hz
01	25.0Hz
02	31.5Hz
03	40.0Hz
04	50.0Hz
05	63.0Hz
06	80.0Hz
07	100Hz
08	125Hz
09	160Hz
0A	200Hz
0B	250Hz
0C	315Hz
0D	400Hz
0E	500Hz
0F	630Hz
10	800Hz
11	1.00kHz
12	1.25kHz
13	1.60kHz
14	2.00kHz
15	2.50kHz
16	3.15kHz
17	4.00kHz
18	5.00kHz
19	6.30kHz
1A	8.00kHz
1B	10.0kHz

Table EQ Middle Q <EQ: Lo(Hi)-Mid Q>

Data(H)	Description
00	0.5
01	1
02	2
03	4
04	8
05	16

Table Pre Delay <Pre Delay>

Data(H)	Description
00 00	0ms
00 01	1ms
:	:
00 7F	127ms
01 00	128ms
:	:
01 7F	255ms
02 00	256ms
:	:
02 2C	300ms
02 2D	sixteenth note
02 2E	eighth note triplet
02 2F	doted sixteenth note
02 30	eighth note
02 31	quarter note triplet
02 32	doted eighth note
02 33	quarter note

Table Step Rate <PH: Step Rate>

Data(H)	Description
00	OFF
01	0
:	:
65	100
66	whole note
67	doted half note
68	whole note triplet
69	half note
6A	doted quarter note
6B	half note triplet
6C	quarter note
6D	doted eighth note
6E	quarter note triplet
6F	eighth note
70	doted sixteenth note
71	eighth note triplet
72	sixteenth note

Table HR Harmony <HR: HR1(HR2) Harm>

Data(H)	Description	
00	-2oct	
01	-14th	
02	-13th	
03	-12th	
04	-11th	
05	-10th	
06	-9th	
07	-1oct	
08	-7th	
09	-6th	
0A	-5th	
0B	-4th	
0C	-3rd	
0D	-2nd	
0E	Unison	
0F	+2nd	
10	+3rd	
11	+4th	
12	+5th	
13	+6th	
14	+7th	
15	+1oct	
16	+9th	
17	+10th	
18	+11th	
19	+12th	
1A	+13th	
1B	+14th	
1C	+2oct	
1D	Scale 1	*Refer to "Table HR Scale"
1E	Scale 2	
1F	Scale 3	
20	Scale 4	
21	Scale 5	
22	Scale 6	
23	Scale 7	
24	Scale 8	
25	Scale 9	
26	Scale 10	
27	Scale 11	
28	Scale 12	
29	Scale 13	
2A	Scale 14	
2B	Scale 15	
2C	Scale 16	
2D	Scale 17	
2E	Scale 18	
2F	Scale 19	
30	Scale 20	
31	Scale 21	
32	Scale 22	
33	Scale 23	
34	Scale 24	
35	Scale 25	
36	Scale 26	
37	Scale 27	
38	Scale 28	
39	Scale 29	

Table HR Scale <Harmony Scale>

Harmony		Input note											
		C	C#	D	D#	E	F	F#	G	G#	A	A#	B
	User Scale	Harmony note (Default)											
-2oct	Scale 1	-C↓↓	-C#↓↓	-D↓↓	-D#↓↓	-E↓↓	-F↓↓	-F#↓↓	-G↓↓	-G#↓↓	-A↓↓	-A#↓↓	-B↓↓
-14th	Scale 2	-D↓	-D#↓	-E↓	-F↓	-F↓	-G↓	-G#↓	-A↓	-A#↓	-B↓	-C↓	-C↓
-13th	Scale 3	-E↓	-E↓	-F↓	-F#↓	-G↓	-A↓	-A#↓	-B↓	-B↓	-C↓	-C#↓	-D↓
-12th	Scale 4	-F↓	-F#↓	-G↓	-G#↓	-A↓	-B↓	-B↓	-C↓	-C#↓	-D↓	-D#↓	-E↓
-11th	Scale 5	-G↓	-G↓	-A↓	-A↓	-B↓	-C↓	-C↓	-D↓	-D↓	-E↓	-E↓	-F↓
-10th	Scale 6	-A↓	-A#↓	-B↓	-B↓	-C↓	-D↓	-D↓	-E↓	-E↓	-F↓	-F↓	-G↓
-9th	Scale 7	-B↓	-B↓	-C↓	-C↓	-D↓	-E↓	-E↓	-F↓	-F↓	-G↓	-G↓	-A↓
-1oct	Scale 8	-C↓	-C#↓	-D↓	-D#↓	-E↓	-F↓	-F#↓	-G↓	-G#↓	-A↓	-A#↓	-B↓
-7th	Scale 9	-D	-D#	-E	-F	-F	-G	-G#	-A	-A#	-B	-B	-C
-6th	Scale 10	-E	-E	-F	-F#	-G	-A	-A#	-B	-B	-C	-C#	-D
-5th	Scale 11	-F	-F#	-G	-G#	-A	-B	-B	-C	-C#	-D	-D#	-E
-4th	Scale 12	-G	-G	-A	-A	-B	-C	-C	-D	-D	-E	-E	-F
-3rd	Scale 13	-A	-A#	-B	-B	-C	-D	-D	-E	-E	-F	-F#	-G
-2nd	Scale 14	-B	-B	-C	-C	-D	-E	-E	-F	-F	-G	-G	-A
Unison	Scale 15	C	C#	D	D#	E	F	F#	G	G#	A	A#	B
+2nd	Scale 16	+D	+D#	+E	+F	+F	+G	+G#	+A	+A#	+B	+C	+C
+3rd	Scale 17	+E	+E	+F	+F#	+G	+A	+A#	+B	+B	+C	+C#	+D
+4th	Scale 18	+F	+F#	+G	+G#	+A	+B	+B	+C	+C#	+D	+D#	+E
+5th	Scale 19	+G	+G	+A	+A	+B	+C	+C	+D	+D	+E	+E	+F
+6th	Scale 20	+A	+A#	+B	+B	+C	+D	+D	+E	+E	+F	+F#	+G
+7th	Scale 21	+B	+B	+C	+C	+D	+E	+E	+F	+F	+G	+G	+A
+1oct	Scale 22	+C↑	+C#↑	+D↑	+D#↑	+E↑	+F↑	+F#↑	+G↑	+G#↑	+A↑	+A#↑	+B↑
+9th	Scale 23	+D↑	+D#↑	+E↑	+F↑	+F↑	+G↑	+G#↑	+A↑	+A#↑	+B↑	+C↑	+C↑
+10th	Scale 24	+E↑	+E↑	+F↑	+F#↑	+G↑	+A↑	+A#↑	+B↑	+B↑	+C↑	+C#↑	+D↑
+11th	Scale 25	+F↑	+F#↑	+G↑	+G#↑	+A↑	+B↑	+B↑	+C↑	+C#↑	+D↑	+D#↑	+E↑
+12th	Scale 26	+G↑	+G↑	+A↑	+A↑	+B↑	+C↑	+C↑	+D↑	+D↑	+E↑	+E↑	+F↑
+13th	Scale 27	+A↑	+A#↑	+B↑	+B↑	+C↑	+D↑	+D↑	+E↑	+E↑	+F↑	+F#↑	+G↑
+14th	Scale 28	+B↑	+B↑	+C↑	+C↑	+D↑	+E↑	+E↑	+F↑	+F↑	+G↑	+G↑	+A↑
+2oct	Scale 29	+C↑↑	+C#↑↑	+D↑↑	+D#↑↑	+E↑↑	+F↑↑	+F#↑↑	+G↑↑	+G#↑↑	+A↑↑	+A#↑↑	+B↑↑

Table OC Range <OC: Range>

Data(H)	Description
	Gt. or Mic Bass
00	1 (Gt. or Mic) 7th string, open to 1st string, 24th fret (Bass) 24th fret LoB, open to HiC, 24th fret
01	2 (Gt. or Mic) 7th string, open to 1st string, 12th fret (Bass) LoB, open to 1st string, 19th fret
02	3 (Gt. or Mic) 7th string, open to 1st string, open (Bass) LoB, open to 1st string, 9th fret
03	4 (Gt. or Mic) 7th string, open to 4th string, 2nd fret (Bass) LoB, open to 2nd string, 2nd fret

Table Xover Frequency <2CE: Xover f>

Data(H)	Description
00	100Hz
01	125Hz
02	160Hz
03	200Hz
04	250Hz
05	315Hz
06	400Hz
07	500Hz
08	630Hz
09	800Hz
0A	1.00kHz
0B	1.25kHz
0C	1.60kHz
0D	2.00kHz
0E	2.50kHz
0F	3.15kHz
10	4.00kHz

Table SDD Delay Time <SDD: DlyTime>

Data(H)	Description
00 00	0ms
00 01	1ms
:	:
00 7F	127ms
01 00	128ms
:	:
01 7F	255ms
02 00	256ms
:	:
02 7F	383ms
03 00	384ms
:	:
03 10	400ms
03 11	sixteenth note
03 12	eighth note triplet
03 13	doted sixteenth note
03 14	eighth note
03 15	quarter note triplet
03 16	doted eighth note
03 17	quarter note

Table DD Delay Time <DD: Delay Time>

Data(H)	Description
00	0ms
01	20ms
:	:
59	1780ms
5A	sixteenth note
5B	eighth note triplet
5C	doted sixteenth note
5D	eighth note
5E	quarter note triplet
5F	doted eighth note
60	quarter note
61	half note triplet
62	doted quarter note
63	half note
64	whole note triplet
65	doted half note
66	whole note

Table Reverb Type <RV: Type>

Data(H)	Description
00	Ambience
01	Room
02	Hall1
03	Hall2
04	Plate

Table Chain <Effect Chain>

Data(H)	Description
00	FX-1
01	Compressor
02	Overdrive/Distortion
03	Preamp/Speaker Simulator
04	Equalizer
05	FX-2
06	Delay
07	Chorus
08	Reverb
09	Noise Suppressor
0A	Foot Volume
0B	USB

Table Name <Name Edit>

Data(H)	Description
20	
21	!
22	"
23	#
24	$
25	%
26	&
27	'
28	(
29	)
2A	*
2B	+
2C	,
2D	-
2E	.
2F	/
30	0
31	1
32	2
33	3
34	4
35	5
36	6
37	7
38	8
39	9
3A	:
3B	;
3C	<
3D	=
3E	>
3F	?
40	@
41	A
42	B
43	C
44	D
45	E
46	F
47	G
48	H
49	I
4A	J
4B	K
4C	L
4D	M
4E	N
4F	O
50	P
51	Q
52	R
53	S
54	T
55	U
56	V
57	W
58	X
59	Y
5A	Z
5B	[
5C	\
5D	]
5E	^
5F	_
60	`
61	a
62	b
63	c
64	d
65	e
66	f
67	g
68	h
69	I
6A	j
6B	k
6C	l
6D	m
6E	n
6F	o
70	p
71	q
72	r
73	s
74	t
75	u
76	v
77	w
78	x
79	y
7A	z
7B	{
7C	|
7D	}

Table Target <Patch: Assign Target>

Data(H)	Description
00 00	FX1:On/Off
00 01	FX1:FX Select
00 02	PW :Type
00 03	PW :Pdl Position
00 04	PW :Level
00 05	AW :Mode
00 06	AW :Polarity
00 07	AW :Sensitivity
00 08	AW :Frequency
00 09	AW :Peak
00 0A	AW :Rate
00 0B	AW :Depth
00 0C	AW :Level
00 0D	TM :Type
00 0E	TM :Low
00 0F	TM :High
00 10	TM :Level
00 11	ACS:Type
00 12	ACS:Sustain
00 13	ACS:Attack
00 14	ACS:Tone
00 15	ACS:Level
00 16	LM :Type
00 17	LM :Attack
00 18	LM :Threshold
00 19	LM :Ratio
00 1A	LM :Release
00 1B	LM :Level
00 1C	ENH :Sensitivity
00 1D	ENH :Frequency
00 1E	ENH :Mix Level
00 1F	SG :Sensitivity
00 20	SG :Rise Time
00 21	TR :Wave Shape
00 22	TR :Rate
00 23	TR :Depth
00 24	DF :Tone
00 25	DF :Sensitivity
00 26	DF :Attack
00 27	DF :Depth
00 28	DF :Resonance
00 29	DF :Effect Level
00 2A	DF :Direct Level
00 2B	RM :Mode
00 2C	RM :Frequency
00 2D	RM :Effect Level
00 2E	RM :Direct Level
00 2F	FB :Mode
00 30	FB :Rise Time
00 31	FB :Rise Time(Å£)
00 32	FB :F.B.Level
00 33	FB :F.B.Level(Å£)
00 34	FB :Vibrato Rate
00 35	FB :Vibrato Dept
00 36	CS :On/Off
00 37	CS :Sustain
00 38	CS :Level
00 39	OD :On/Off
00 3A	OD :Type
00 3B	OD :Drive
00 3C	OD :Bass
00 3D	OD :Treble
00 3E	OD :Effect Level
00 3F	OD :Direct Level
00 40	PRE/SP:On/Off
00 41	PRE/SP:Channel Select
00 42	PRE/SP:Type
00 43	PRE/SP:Gain
00 44	PRE/SP:Bass
00 45	PRE/SP:Middle
00 46	PRE/SP:Treble
00 47	PRE/SP:Presence
00 48	PRE/SP:Amp Level
00 49	PRE/SP:Bright
00 4A	PRE/SP:Gain SW
00 4B	PRE/SP:Speaker Type
00 4C	PRE/SP:Mic Type
00 4D	PRE/SP:Mic Distance
00 4E	PRE/SP:Mic Position
00 4F	PRE/SP:Mic Level
00 50	PRE/SP:Direct Level
00 51	EQ :On/Off
00 52	EQ :Low EQ
00 53	EQ :Low-Middle Frequency
00 54	EQ :Low-Middle Q
00 55	EQ :Low-Middle EQ
00 56	EQ :High-Middle Frequency
00 57	EQ :High-Middle Q
00 58	EQ :High-Middle EQ
00 59	EQ :High EQ
00 5A	EQ :Level
00 5B	FX2:On/Off
00 5C	FX2:FX Select
00 5D	PH :Type
00 5E	PH :Rate
00 5F	PH :Depth
00 60	PH :Manual
00 61	PH :Resonance
00 62	PH :Step Rate
00 63	PH :Effect Level
00 64	PH :Direct Level
00 65	FL :Rate
00 66	FL :Depth
00 67	FL :Manual
00 68	FL :Resonance
00 69	FL :Separation
00 6A	FL :Low Cut Filter
00 6B	FL :Effect Level
00 6C	FL :Direct Level
00 6D	HR :Voice

00 6E	HR :HR1 Harmony
00 6F	HR :HR1 Pre Delay
00 70	HR :HR1 Feedback
00 71	HR :HR1 Level
00 72	HR :HR2 Harmony
00 73	HR :HR2 Pre Delay
00 74	HR :HR2 Level
00 75	HR :Key
00 76	HR :Direct Level
00 77	PS :Voice
00 78	PS :PS1 Mode
00 79	PS :PS1 Pitch
00 7A	PS :PS1 Fine
00 7B	PS :PS1 Pre Delay
00 7C	PS :PS1 Feedback
00 7D	PS :PS1 Level
00 7E	PS :PS2 Mode
00 7F	PS :PS2 Pitch
01 00	PS :PS2 Fine
01 01	PS :PS2 Pre Delay
01 02	PS :PS2 Level
01 03	PS :Direct Level
01 04	OC :Range
01 05	OC :Octave Level
01 06	OC :Direct Level
01 07	PB :Pitch Min
01 08	PB :Pitch Max
01 09	PB :Pdl Position
01 0A	PB :Effect Level
01 0B	PB :Direct Level
01 0C	2CE:Xover Frequency
01 0D	2CE:Low Rate
01 0E	2CE:Low Depth
01 0F	2CE:Low Pre Delay
01 10	2CE:Low Level
01 11	2CE:High Rate
01 12	2CE:High Depth
01 13	2CE:High Pre Delay
01 14	2CE:High Level
01 15	PAN:Wave Shape
01 16	PAN:Rate
01 17	PAN:Depth
01 18	VB :Rate
01 19	VB :Depth
01 1A	VB :Trigger
01 1B	VB :Rise Time
01 1C	UV :Rate
01 1D	UV :Depth
01 1E	UV :Level
01 1F	RT :Speed Select
01 20	RT :Rate(Slow)
01 21	RT :Rate(Fast)
01 22	RT :Rise Time
01 23	RT :Fall Time
01 24	RT :Depth
01 25	SDD:Delay Time
01 26	SDD:Feedback
01 27	SDD:Effect Level
01 28	HU :Mode
01 29	HU :Vowel 1
01 2A	HU :Vowel 2
01 2B	HU :Sensitivity
01 2C	HU :Rate
01 2D	HU :Depth
01 2E	HU :Manual
01 2F	HU :Level
01 30	SL :Pattern
01 31	SL :Rate
01 32	SL :Trigger Sensitivity
01 33	AR :Phrase
01 34	AR :Loop
01 35	AR :Tempo
01 36	AR :Sensitivity
01 37	AR :Key
01 38	AR :Attack
01 39	AR :Hold
01 3A	AR :Effect Level
01 3B	AR :Direct Level
01 3C	SYN:Sensitivity
01 3D	SYN:Wave
01 3E	SYN:Chromatic
01 3F	SYN:Octave Shift
01 40	SYN:PWM Rate
01 41	SYN:PWM Depth
01 42	SYN:Cutoff Frequency
01 43	SYN:Resonance
01 44	SYN:FLT.Sensitivity
01 45	SYN:FLT.Decay
01 46	SYN:FLT.Depth
01 47	SYN:Attack
01 48	SYN:Release
01 49	SYN:Velocity
01 4A	SYN:Hold
01 4B	SYN:Synth Level
01 4C	SYN:Direct Level
01 4D	BS :Character
01 4E	BS :Level
01 4F	SEQ:Low EQ
01 50	SEQ:Low-Middle Frequency
01 51	SEQ:Low-Middle Q
01 52	SEQ:Low-Middle EQ
01 53	SEQ:High-Middle Frequency
01 54	SEQ:High-Middle Q
01 55	SEQ:High-Middle EQ
01 56	SEQ:High EQ
01 57	SEQ:Level
01 58	DD :On/Off
01 59	DD :Type
01 5A	DD :DlyTime
01 5B	DD :DlyTime.F
01 5C	DD :Tap Time
01 5D	DD :Feedback
01 5E	DD :High Cut Filter
01 5F	DD :Effect Level
01 60	CE :On/Off
01 61	CE :Mode
01 62	CE :Rate
01 63	CE :Depth
01 64	CE :Pre Delay
01 65	CE :Low Cut Filter
01 66	CE :High Cut Filter
01 67	CE :Effect Level
01 68	RV :On/Off
01 69	RV :Type
01 6A	RV :Reverb Time
01 6B	RV :Pre Delay
01 6C	RV :Low Cut Filter
01 6D	RV :High Cut Filter
01 6E	RV :Density
01 6F	RV :Effect Level
01 70	NS :On/Off
01 71	NS :Threshold
01 72	NS :Release
01 73	FV : Level
01 74	Patch Level
01 75	Master BPM
01 76	TUNER On/Off
01 77	Master BPM(Tap)
01 78	Delay Time(Tap)
01 79	Remote Start/Stop
01 7A	Patch Level Inc1
01 7B	Patch Level Inc2
01 7C	Patch Level Dec1
01 7D	Patch Level Dec2
01 7E	CH Select Inc
01 7F	CH Select Dec

Table Source <Assign Source>

Data(H)	Description
00	EXP PEDAL
01	CTL 1
02	CTL 2
03	MIDI CC# 01
:	:
21	MIDI CC# 31
22	MIDI CC# 64
:	:
41	MIDI CC# 95

Table METER Point <METER Point>

Data(H)	Description
00	Input
01	FX-1
02	CS
03	OD
04	PRE
05	EQ
06	FX-2
07	DD
08	CE
09	RV
0A	NS
0B	FV
0C	USB
0D	Output

GUITAR EFFECTS SYSTEM with USB AUDIO INTERFACE — Date: Jul. 15, 2003

Model GS-10

MIDI Implementation Chart

Version: 1.00

Function...		Transmitted	Recognized	Remarks
Basic Channel	Default	1–16	1–16	Memorized
	Changed	1–16	1–16	
Mode	Default	X	OMNI ON/OFF	Memorized
	Messages	X	X	
	Altered	**********	X	
Note Number :	True Voice	X	X	
		**********	X	
Velocity	Note ON	X	X	
	Note OFF	X	X	
After Touch	Key's	X	X	
	Ch's	X	X	
Pitch Bend		X	X	
Control Change	0, 32	O (0–1)	O * 1	Bank Select
	1–31	O	O * 2	
	33–63	O	X	
	64–95	O	O * 2	
Prog Change	: True #	O	O	Program Number
		**********	0–127	1–128
System Exclusive		O	O	
System Common	: Song Pos	X	X	
	: Song Sel	X	X	
	: Tune	X	X	
System Real Time	: Clock	X	O	
	: Command	O	X	
Aux Message	: All sound off	X	X	
	: Reset All Controller	X	X	
	: Local ON/OFF	X	X	
	: All Notes OFF	X	X	
	: Active Sense	X	O	
	: Reset	X	X	
Notes		* 1 00H: For values of 01H or lower, the Program Change Map will be switched according to the value. For values of 02H or higher, the received data will be ignored. 20H: The received data will be ignored, regardless of the value. * 2 Rcognizes messages designated by specifying this as a source for Assign (p. 60).		

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

GS-10: Guitar Effects System with USB Audio Interface

Rated Power Output
1.5 W + 1.5 W

Signal Processing
AD Conversion: 24 bit + AF method
DA Conversion: 24 bit
Digital Out/USB Audio: 24 bit

Sampling Frequency
44.1 kHz

Program Memories
200: 100 (User) + 100 (Preset)

Nominal Input Level
GUITAR/BASS INPUT: -10 dBu
MIC INPUT: -40 dBu (BALANCE)
AUX INPUT L/R: -10 dBu

Input Impedance
GUITAR/BASS INPUT: 1 MΩ
MIC INPUT: 2.2 kΩ
AUX INPUT L/R: 33 kΩ

Nominal Output Level
OUTPUT L/R: -10 dBu
GUITAR AMP OUT: -10 dBu

Output Impedance
OUTPUT L/R: 1 kΩ
GUITAR AMP OUT: 1.5 kΩ

Speaker
Internal Speaker x 2

Digital Output
EIAJ CP1201, S/P DIF

USB
AUDIO IN/OUT: Stereo, 44.1 kHz, 24 bit (Capable of simultaneous recording and playback)
MIDI Control IN/OUT
MIDI IN/OUT

Display
16 characters, 2 lines (backlit LCD)

Connectors
GUITAR/BASS input jack
PHONES jack
MIC INPUT jack (TRS balanced, 1/4 inch phone type)
MIC INPUT connector (XLR balanced)
AUX INPUT jack L/R (RCA Phono type)
OUTPUT jack L/R (RCA Phono type)
GUITAR AMP OUT jack
EXP PEDAL/CTL 1,2 jack
DIGITAL OUT connector (Coaxial)
USB connector
MIDI connector IN/OUT
AC Adaptor jack

Control
(PREAMP/SPEAKER)
GAIN knob
BASS knob
MIDDLE knob
TREBLE knob
PRESENCE knob
LEVEL knob
On/Off button
CHANNEL SELECT button A/B/C

(COMP)
SUSTAIN knob
On/Off button

(OD/DS)
DRIVE knob
LEVEL knob
On/Off button

(DELAY)
FEEDBACK knob
LEVEL knob
On/Off button
TAP button

(CHORUS)
LEVEL knob
On/Off button

(REVERB)
LEVEL knob
On/Off button

FX-1 button
FX-2 button
EQ button
NAME/NS/MASTER button
ASSIGN button
INPUT SELECT button
QUICK FX button
PARAMETER button L/R
EXIT button
WRITE button
TUNER button
USB button
SPEAKER ON/OFF button
METER button
SYSTEM button
DIRECT PATCH button 1–4
AUX INPUT LEVEL knob
OUTPUT LEVEL knob
PATCH/VALUE dial

Power Supply
AC 14 V; Supply AC adaptor (BOSS BRC series)

Current Draw
800 mA

Dimensions
329 (W) x 231 (D) x 85 (H) mm
13 (W) x 9-1/8 (D) x 3-3/8 (H) inches

Weight
2.25 kg/5 lbs

Accessories
AC Adaptor (BRC series)
Read This First (Leaflet)
Owner's Manual
USB cable
GS-10 Software CD-ROM
Cakewalk Music Creator set (CD-ROM, Owner's Manual)

Options
Expression Pedal: EV-5 (Roland)
Foot Switch: FS-5U
Connection Cord: PCS-31 (Roland)
(1/4 inches Phone Plug (stereo) – 1/4 inches Phone Plug (mono) x 2)

* *0 dBu= 0.775 Vrms*

NOTE
In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.

AF Method (Adaptive Focus method)
This is a proprietary method from Roland that vastly improves the signal-to-noise (S/N) ratio of the A/D and D/A converters.

Installing & Setup the USB Driver

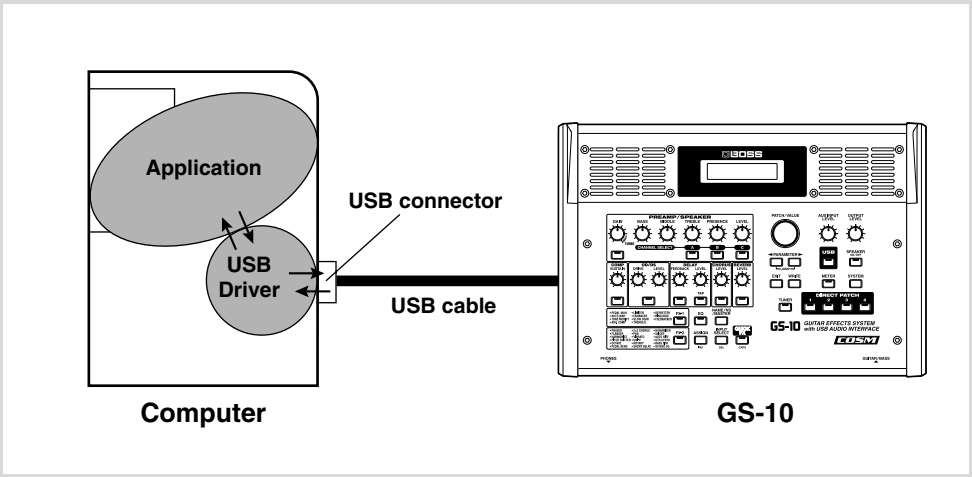
In order to use the GS-10 USB, you must first install the USB driver.
The USB Driver is included in the "GS-10 SOFTWARE CD-ROM."

■ What is USB Driver?

The USB Driver is software which passes data between the GS-10 and the application (sequencer software etc.) that is running on the USB-connected computer.

The GS-10 Driver sends data from the application to the GS-10, and passes data from the GS-10 to the application.

The GS-10 can receive and transmit both digital audio signals and MIDI messages.



The explanation about installing and setup the driver is organized according to the computer and driver mode that you are using. Please proceed to the following pages.

Installing & Setting Up the Driver (Windows) ..... (p. 126)

Installing & Setting Up the Driver (Macintosh) ..... (p. 146)

Installing & Setting Up the Driver (Windows)

Special Driver and Standard Driver

The GS-10 features two operational modes, each of which uses a different type of driver, with one mode using the special driver on the CD-ROM included with the GS-10 and the other mode using the standard Windows driver.

Before installing the drivers, you must first switch the GS-10's driver mode.

For instructions on switching the GS-10's driver modes, refer to "Switching the Driver Mode" (p. 80).

■ Special Driver

Special Driver mode allows audio to be recorded/played/edited with high quality and stable timing.

Audio signals can be transferred between the GS-10 and the computer at a resolution of 24 bits and sampling frequencies of 44.1 kHz.

And in addition to audio, you can also control the GS-10 using MIDI messages and connect external MIDI devices and computers.

Select this mode if you are using an application that allows high-quality audio recording/playback/editing, such as an application that supports 24 bit audio (e.g., the Cakewalk series or Cool Edit) or an ASIO-compatible application (e.g., Cubase VST, Logic Audio, or SingerSongWriter).

→ "Installing the special driver" (p. 127)

■ Standard Driver

In Standard Driver mode, audio signals are transferred between the GS-10 and the computer at a resolution of 16 bits and sampling frequencies of 44.1 kHz.

Select this mode if you are using an application that uses Window's own functionality, such as an application that uses the computer's CD-ROM drive to play back CD-audio, or an application that uses the software synthesizer included with Windows.

→ "Installing the OS-standard driver" (p. 136)

* *If you want to use MIDI, use special driver mode.*

* *The standard driver included with Windows does not support ASIO.*

Installing the special driver

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

- **Windows XP/2000 users..... (p. 127)**
- **Windows Me/98 users ..... (p. 135)**

■ Windows XP/2000 users

Windows XP

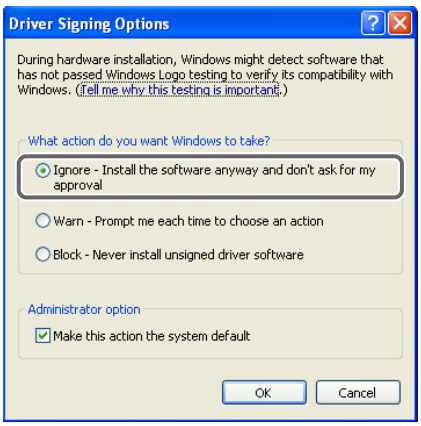
1. With the GS-10 disconnected, start up Windows.

Disconnect all USB cables except for a USB keyboard and USB mouse (if used).

2. Open "Control Panel" from the Windows Start menu, then open the "System Properties" dialog.

3. Click "Hardware" tab, and then click [Driver Signing].

Open the "Driver Signing Options" dialog box.



4. Make sure that "What action do you want Windows to take?" is set to "Ignore".

If currently set to "Warn" or "Block," set it to "Ignore" here, then after installing the driver, restore the original setting.

5. Click [OK] to close the "System Properties" dialog box.

6. Exit all currently running software (applications).

Also close any open windows. If you are using virus checking or similar software, be sure to exit it as well.

7. Insert the CD-ROM into the CD-ROM drive of your computer.

8. Click the Windows start button. From the menu that appears, select "Run...".

Open the "Run..." dialog box.

NOTE

If you are using Windows XP Professional, you must log on using a user name with an administrative account type (e.g., Administrator).

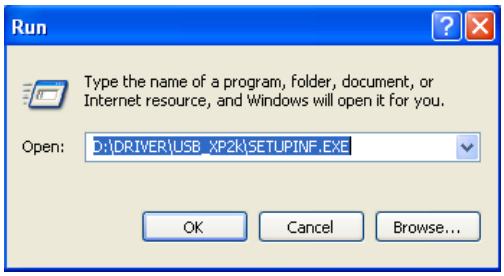
MEMO

Depending on how your system is set up, the System icon may be displayed directly in the Control Panel (the Classic display). In this case, double-click the System icon.

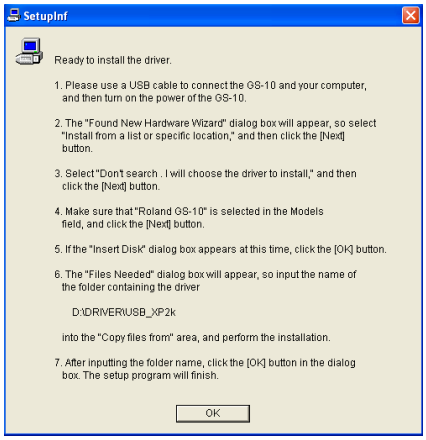
9. In the dialog box that appears, input the following into the "Open" field, and click [OK].

D:\DRIVER\USB_XP2k\SETUPINF.EXE

* *The drive name "D:" may be different for your system. Specify the drive name of your CD-ROM drive.*



The "SetupInf" dialog box will appear, with "Ready to install the driver" appearing in the box.



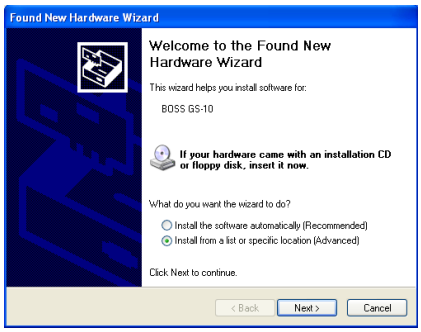
10. Before connecting the USB cable, switch the GS-10's driver mode to "Advanced."

For instructions on switching the GS-10's driver modes, refer to "Switching the Driver Mode" (p. 80).

11. With the power switch turned OFF, use the USB cable to connect the GS-10 to your computer.

12. Make sure that the GS-10's OUTPUT LEVEL is set to the lowest setting, then switch ON the POWER switch.

The "Found New Hardware Wizard" will appear.



13. Make sure that the screen indicates "BOSS GS-10", select "Install from a list or specific location (Advanced)", and click [Next].

The screen will indicate "Please choose your search and installation options".

MEMO

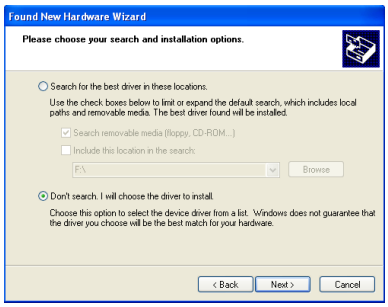
In this manual, the location of folders and files is given in terms of the file path, using \ as the delimiter. For example, WinXP_2k\SETUPINF.EXE indicates the SETUPINF.EXE file found in the WinXP_2k folder.

NOTE

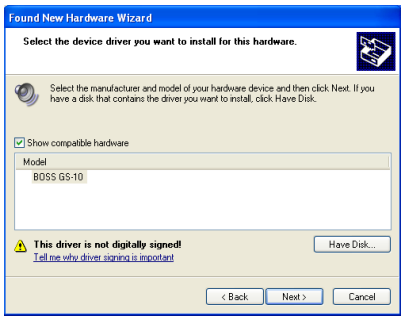
Turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and/or damage to other devices.

NOTE

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



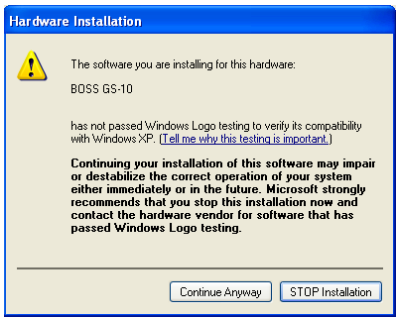
14. **Select "Don't search. I will choose the driver to install", and click [Next].**



15. **Make sure that the "Model" field indicates "BOSS GS-10", and click [Next].**

Driver installation will begin.

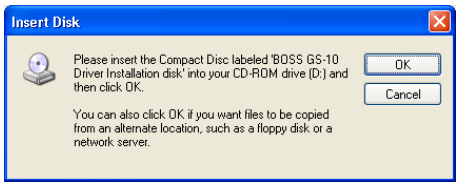
If the "What action do you want Windows to take?" setting in step 4 was not set to "Ignore", a "Hardware Installation" dialog box will appear.



If the [Continue Anyway] button appears, click the [Continue Anyway] button to continue with the installation.

If you are unable to continue, click [STOP Installation] or [OK] to begin the driver installation over again from Step 1.

The Insert Disk dialog box will appear.



16. **Click [OK].**

The "Files Needed" dialog box will appear.

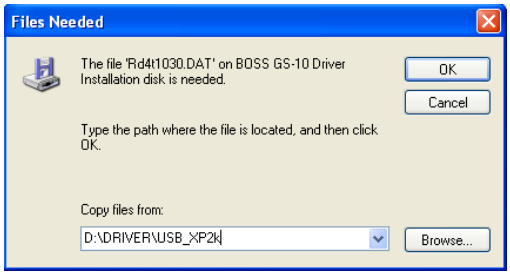
MEMO

The Insert Disk dialog may not appear. In that case, proceed to step 17.

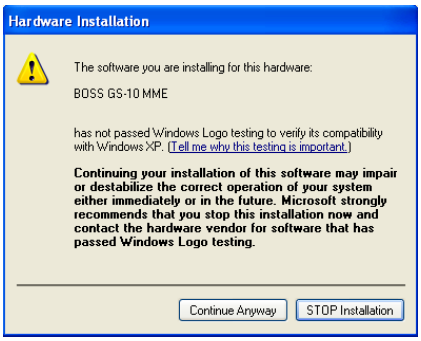
17. **Input the following into the "Copy files from" field, and click [OK].**

D:\DRIVER\USB_XP2k

* *The drive name "D:" may be different for your system. Specify the drive name of your CD-ROM drive.*



If the "What action do you want Windows to take?" setting in step 4 was not set to "Ignore", a "Hardware Installation" dialog box will appear.



If the [Continue Anyway] button appears, click the [Continue Anyway] button to continue with the installation.

The Found New Hardware Wizard will appear.

18. **Verify that "BOSS GS-10" is displayed, and click [Finish].**

Wait until "Found New Hardware" appears near the taskbar.

When driver installation has been completed, the "System Settings Change" dialog box will appear.

19. **Click [Yes].**

Windows will restart automatically.

→ Next, you need to make the driver settings (p. 141).

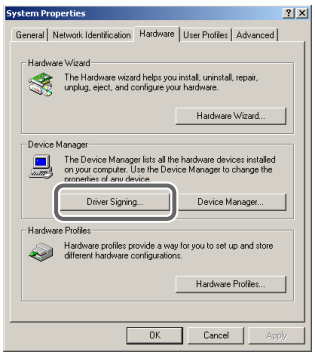
Windows 2000

1. With the GS-10 disconnected, start up Windows.

Disconnect all USB cables except for a USB keyboard and USB mouse (if used).

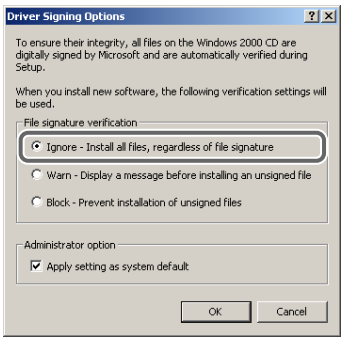
2. Click the Windows Start button, and from the menu that appears, select "Settings | Control Panel." In "Control Panel," double-click the System icon.

The "System Properties" dialog box will appear.



3. Click the "Hardware" tab, and then click [Driver Signature].

Open the "Driver Signing Options" dialog box.



4. the "File signature verification" is set to "Ignore," and click [OK].

If currently set to "Warn" or "Block," set it to "Ignore" here, then after installing the driver, restore the original setting.

5. Click [OK] to close the "System Properties" dialog box.

6. Exit all currently running software (applications).

Also close any open windows. If you are using virus checking or similar software, be sure to exit it as well.

7. Insert the CD-ROM into the CD-ROM drive of your computer.

8. Click the Windows start button. From the menu that appears, select "Run...".

Open the "Run..." dialog box.

NOTE

If the GS-10 is already connected to your computer and a message of "Add New Hardware Wizard" is displayed, go to the included CD-ROM folder named DRIVER\USB_XP2k, open the file Readme_e.htm, and read the "Troubleshooting" section entitled "You attempted to install using the above procedure, but were not able to."

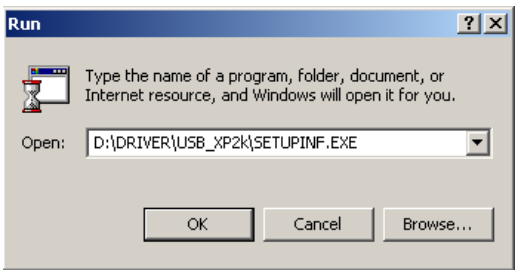
NOTE

You must log on using a user name with an administrative account type (e.g., Administrator).

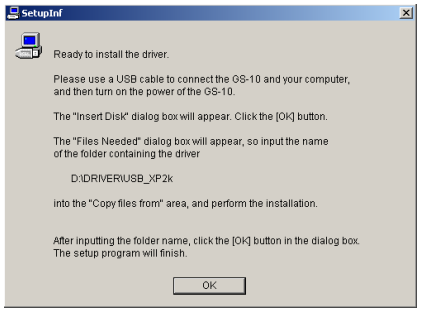
9. **In the dialog box that appears, input the following into the "Open" field, and click [OK].**

D:\DRIVER\USB_XP2k\SETUPINF.EXE

* *The drive name "D:" may be different for your system. Specify the drive name of your CD-ROM drive.*



The "SetupInf" dialog box will appear, with "Ready to install the driver" appearing in the box.



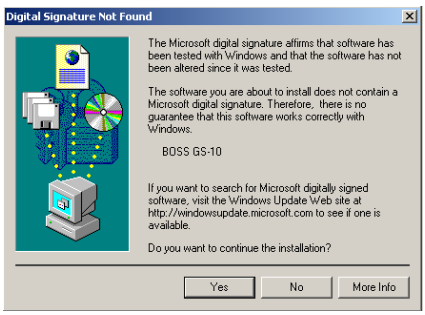
10. **Before connecting the USB cable, switch the GS-10's driver mode to "Advanced."**

For instructions on switching the GS-10's driver modes, refer to "Switching the Driver Mode" (p. 80).

11. **With the power switch turned OFF, use the USB cable to connect the GS-10 to your computer.**

12. **Make sure that the GS-10's OUTPUT LEVEL is set to the lowest setting, then switch ON the POWER switch.**

If the "File signature verification" setting in step 4 was not set to "Ignore", a "Digital Signature Not Found" dialog box will appear.



If the [Yes] button appears, click the [Yes] button to continue with the installation.

If you are unable to continue, click [No] or [OK] to begin the driver installation over again from Step 1.

The "Insert Disk" dialog box will appear.

MEMO

In this manual, the location of folders and files is given in terms of the file path, using \ as the delimiter. For example, WinXP_2k\SETUPINF.EXE indicates the SETUPINF.EXE file found in the WinXP_2k folder.

NOTE

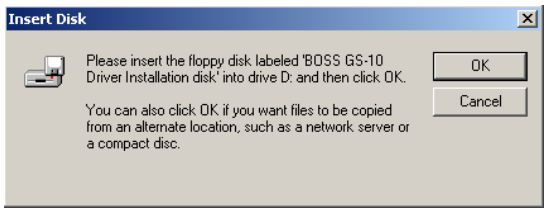
Turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and/or damage to other devices.

MEMO

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

NOTE

If the Insert Disk dialog box does not appear, please read The "Insert Disk" dialog box does not appear (p. 167)



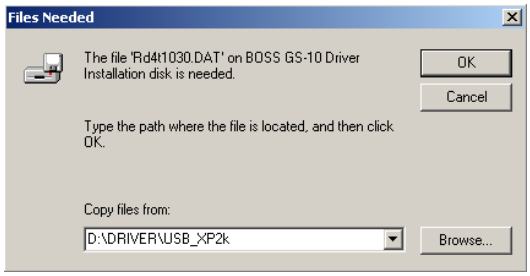
13. **Click [OK].**

The "Files Needed" dialog box will appear.

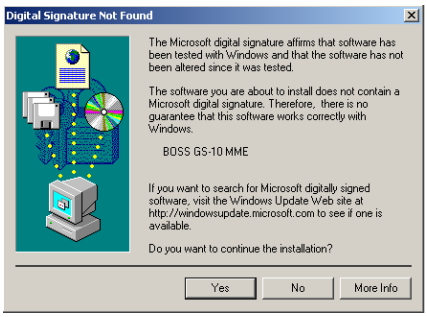
14. **In the Copy files from field, type the folder name that is shown in the dialog box, and click [OK].**

D:\DRIVER\USB_XP2k

* *The drive name "D:" may be different for your system. Specify the drive name of your CD-ROM drive.*

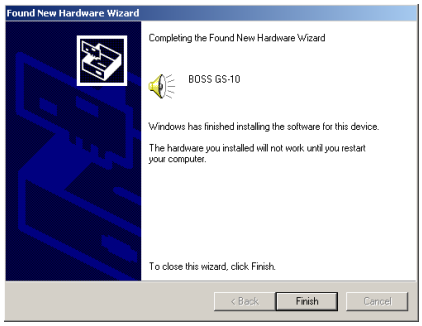


If the "File signature verification" setting in step 4 was not set to "Ignore", a "Digital Signature Not Found" dialog box will appear.



Click [Yes], and continue the installation.

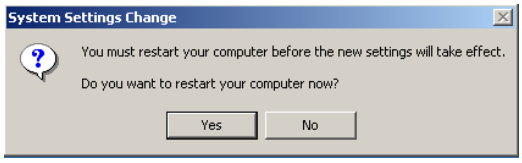
The "Find New Hardware Wizard" may be displayed.



15. **Verify that "BOSS GS-10" is displayed, and click [Finish].**

Driver installation will begin.

When driver installation has been completed, the "System Settings Change" dialog box will appear.



16. **Click [Yes].**

Windows will restart automatically.

→ **Next, you need to make the driver settings (p. 141).**

■ Windows Me/98 users

1. With the GS-10 disconnected, start up Windows.

Disconnect all USB cables except for a USB keyboard and USB mouse (if used).

2. Exit all currently running software (applications).

Also close any open windows. If you are using virus checking or similar software, be sure to exit it as well.

3. Insert the CD-ROM into the CD-ROM drive of your computer.

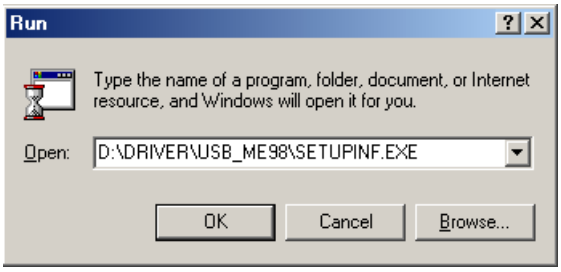
4. Click the Windows start button. From the menu that appears, select "Run...".

Open the "Run..." dialog box.

5. In the dialog box that appears, input the following into the "Open" field, and click [OK].

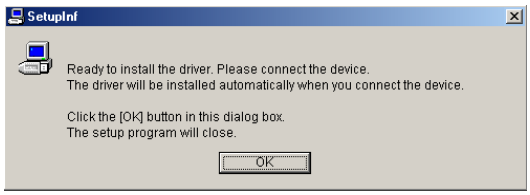
D:\DRIVER\USB_ME98\SETUPINF.EXE

* *The drive name "D:" may be different for your system. Specify the drive name of your CD-ROM drive.*



The "SetupInf" dialog box will appear, with "Ready to install the driver" appearing in the box.

* *If a message prompting you to restart Windows appears, restart Windows in accordance with the message instructions, then proceed to the following step.*



6. Before connecting the USB cable, switch the GS-10's driver mode to "Advanced."

For instructions on switching the GS-10's driver modes, refer to "Switching the Driver Mode" (p. 80).

7. With the power switch turned OFF, use the USB cable to connect the GS-10 to your computer.

8. Make sure that the GS-10's OUTPUT LEVEL is set to the lowest setting, then switch ON the POWER switch.

The driver is installed automatically.

9. Click [OK].

* *If a message prompting you to restart Windows appears, restart Windows in accordance with the message instructions.*

→ Next, you need to make the driver settings (p. 141).

NOTE

If the GS-10 is already connected to your computer and a message of "Add New Hardware Wizard" is displayed, go to the included CD-ROM folder named DRIVER\USB_XP2k, open the file Readme_e.htm, and read the "Troubleshooting" section entitled "You attempted to install using the above procedure, but were not able to."

MEMO

In this manual, the location of folders and files is given in terms of the file path, using \ as the delimiter. For example, ME98\SETUPINF.EXE indicates the SETUPINF.EXE file found in the ME98 folder.

NOTE

Turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and/or damage to other devices.

NOTE

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

Installing the OS-standard driver

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

- **Windows XP/2000 users..... (p. 136)**
- **Windows Me users..... (p. 137)**
- **Windows 98 users..... (p. 138)**

■ Windows XP/2000 users

1. With the GS-10 disconnected, start up Windows.

Disconnect all USB cables except for a USB keyboard and USB mouse (if used).

2. Exit all currently running software (applications).

Also close any open windows. If you are using virus checking or similar software, be sure to exit it as well.

3. Before connecting the USB cable, switch the GS-10's driver mode to "Standard."

For instructions on switching the GS-10's driver modes, refer to "Switching the Driver Mode" (p. 80).

4. With the power switch turned OFF, use the USB cable to connect the GS-10 to your computer.

5. Make sure that the GS-10's OUTPUT LEVEL is set to the lowest setting, then switch ON the POWER switch.

The GS-10 will be detected automatically, and the driver will be installed.

6. When installation is complete, restart Windows.

→ **Next, you need to make the driver settings (p. 141).**

NOTE

Turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and/or damage to other devices.

MEMO

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

■ Windows Me users

1. With the GS-10 disconnected, start up Windows.

Disconnect all USB cables except for a USB keyboard and USB mouse (if used).

2. Exit all currently running software (applications).

Also close any open windows. If you are using virus checking or similar software, be sure to exit it as well.

3. Before connecting the USB cable, switch the GS-10's driver mode to "Standard."

For instructions on switching the GS-10's driver modes, refer to "Switching the Driver Mode" (p. 80).

4. With the power switch turned OFF, use the USB cable to connect the GS-10 to your computer.

5. Make sure that the GS-10's OUTPUT LEVEL is set to the lowest setting, then switch ON the POWER switch.

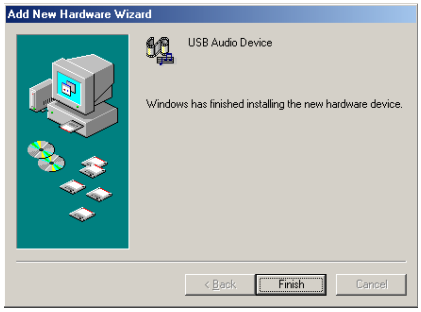
Windows will detect the GS-10, and the "Add New Hardware Wizard" dialog box will appear.

6. Make sure that Automatic search for a better driver (Recommended) is selected, and click [Next].

Driver detection will begin.

When the driver has been found, driver installation will begin.

Once the driver has been installed, a dialog box will inform you of this.



7. Click [Finish].

8. Restart Windows.

→ Next, you need to make the driver settings (p. 141).

NOTE

Turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and/or damage to other devices.

MEMO

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

■ Windows 98 users

The USB composite device driver is installed first, then the USB audio device driver is installed. Use the following procedure to install the drivers.

1. With the GS-10 disconnected, start up Windows.

Disconnect all USB cables except for a USB keyboard and USB mouse (if used).

2. Exit all currently running software (applications).

Also close any open windows. If you are using virus checking or similar software, be sure to exit it as well.

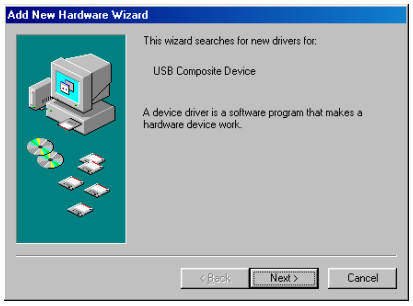
3. Before connecting the USB cable, switch the GS-10's driver mode to "Standard."

For instructions on switching the GS-10's driver modes, refer to "Switching the Driver Mode" (p. 80).

4. With the power switch turned OFF, use the USB cable to connect the GS-10 to your computer.

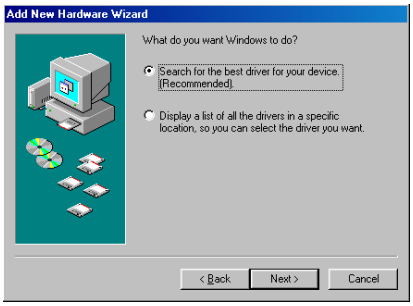
5. Make sure that the GS-10's OUTPUT LEVEL is set to the lowest setting, then switch ON the POWER switch.

USB composite device will be detected automatically, and the "Add New Hardware Wizard" dialog box will appear.



6. Click [Next].

7. When "What do you want Windows to do?" appears, select "Search for the best driver for your device (Recommended)", and click [Next].



A dialog box like the one shown below will appear.

NOTE

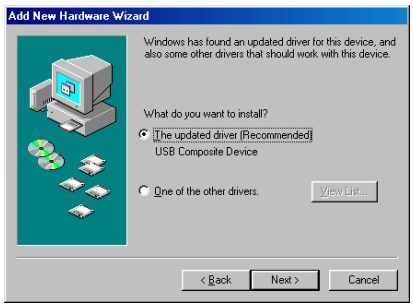
Turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and/or damage to other devices.

MEMO

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

8. **Check CD-ROM drive, and click [Next].**

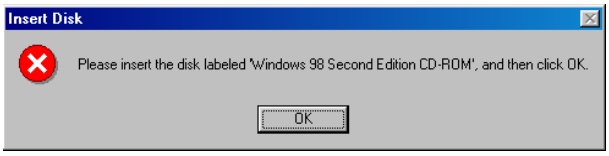
A dialog box like the one shown below will appear.



9. **Click [Next]**

File (driver) copying will begin.

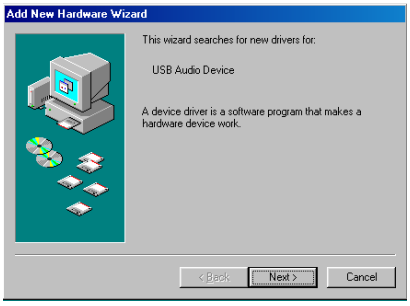
If the Windows CD-ROM is not inserted in the CD-ROM drive, a "Insert Disk" dialog box may appear. In this case, insert the Windows CD-ROM into the CD-ROM drive and click [OK].



When installation of the USB Composite Device driver is completed, a dialog box like the one shown below will appear.

10. **Click [Finish].**

Next, the USB audio device will be detected automatically, and the "Add New Hardware Wizard" dialog box will appear.



11. **Click [Next], and proceed with the installation in the same way as in steps 8–10.**

When installation of the USB audio device driver is complete, a dialog box like the one shown here will appear.

12. **Click [Finish].**

Installation of the USB composite device driver and USB audio device driver has been completed.

13. **Restart Windows.**

→ Next, you need to make the driver settings (p. 141).

Driver settings

■ About the input/output devices

Audio output devices

BOSS GS-10

This sends audio data from the computer to the GS-10. This is the setting you will normally use, such as when using the GS-10 with Media Player. You will also select this setting when using an application such as SONAR in WDM driver mode, or when using a DirectSound application.

MME BOSS GS-10 Out (Windows XP/2000 only)

This sends audio data from the computer to the GS-10. Use this setting if you want to use 24-bit audio with an application that does not have a WDM driver mode or does not support ASIO (such as Cool Edit).

Audio input devices

BOSS GS-10

This receives audio data sent by the GS-10 to the computer. This is the setting you will normally use. You will also select this setting when using an application such as SONAR in WDM driver mode.

MME BOSS GS-10 In (Windows XP/2000 only)

This receives audio data sent by the GS-10 to the computer. Use this setting if you want to use 24-bit audio with an application that does not have a WDM driver mode or does not support ASIO (such as Cool Edit).

ASIO device

If you are using the GS-10 with an ASIO-compatible application such as Cubase, select "BOSS GS-10" as the ASIO setting on your application.

* *To prevent an audio oscillation loop or double monitoring, turn monitoring Off in your application, or use ASIO Direct Monitor.*

MIDI output devices

BOSS GS-10 MIDI OUT

This transmits MIDI data from the computer to the GS-10. Transmitted MIDI data is output from the GS-10's MIDI OUT connector.

BOSS GS-10 Control

This transmits MIDI data from the computer to the GS-10. You can control the GS-10's operations using MIDI data.

MIDI input devices

BOSS GS-10 MIDI IN

This accepts MIDI data transmitted from the GS-10 to the computer. MIDI data input to the GS-10's MIDI IN connector is transmitted to the computer.

BOSS GS-10 MIDI Control

This accepts MIDI data transmitted from the GS-10 to the computer. Data for the GS-10's operations and performance data is transmitted to the computer.

■ Specifying the audio input/output destination

Windows XP/2000/Me users

1. **Open Control Panel.**

Windows XP

1) Click the Windows start button, and from the menu that appears, select "Control Panel."

Windows 2000/Me

1) Click the Windows Start button, and from the menu that appears, select "Settings | Control Panel."

2. **Open the "Sounds and Audio Devices Properties" dialog box (or in Windows 2000/Me, "Sounds and Multimedia Properties").**

Windows XP

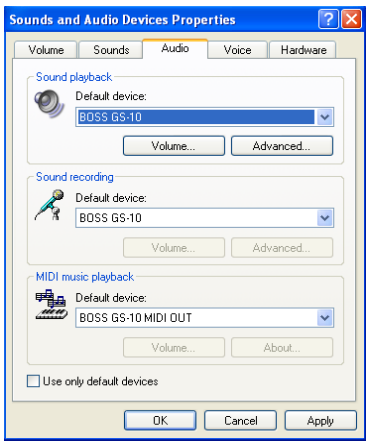
1) In "Pick a category", click "Sound, Speech, and Audio Devices."
2) In "or pick a Control Panel icon", click the sounds and Audio Devices icon.

Windows 2000/Me

1) In Control Panel, double-click the Sounds and Multimedia icon to open the "Sounds and Multimedia Properties" dialog box.

3. **Click the "Audio" tab.**

4. **For "Sound playback," "Sound recording," and "MIDI music playback," click the ▼ located at the right of [Default device] (or in Windows 2000/Me, [Preferred device]), and select the following from the list that appears.**



	Special driver mode	Standard driver mode
Sound playback	BOSS GS-10	GS-10 (Windows XP), USB Audio Device (Windows 2000/Me)
Sound recording	BOSS GS-10	GS-10 (Windows XP), USB Audio Device (Windows 2000/Me)
MIDI music playback	BOSS GS-10 MIDI OUT	MIDI cannot be handled when using Standard Driver mode. ("MIDI in Standard Driver Mode" (p. 80))

5. **Click [OK] to close the "Sounds and Audio Devices Properties" dialog box.**

This concludes the procedure for setting the input and output destinations.

→ Next, set the Windows "Volume Control" (p. 144).

MEMO

Depending on how your system is set up, the "Sounds and Audio Devices" icon may be displayed directly in the Control Panel (the Classic view). In this case, double-click the "Sounds and Audio Devices" icon.

MEMO

If the Sound and Multimedia icon is not displayed, click "Show all control panel options" in the frame at the left.

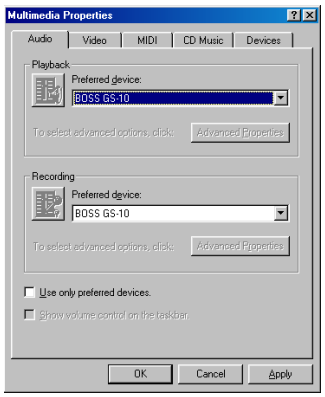
Windows 98 users

1. Click the Windows Start button, and from the menu that appears, select "Settings | Control Panel."

The "Control Panel" will appear.

2. In Control Panel, double-click the "Multimedia" icon.

3. Click the "Audio" tab.

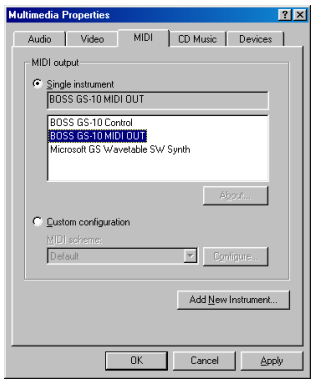


4. Specify the "Preferred device."

Click the Playback field and Recording field, make the following selections from the list that appears, and click [Apply].

	Special driver mode	Standard driver mode
Playback	BOSS GS-10	USB Audio Device
Recording	BOSS GS-10	USB Audio Device

5. Click the MIDI tab.



6. Set "MIDI output."

Select [Single instrument], and choose one of the following from the list that appears, and click [Apply].

	Special driver mode	Standard driver mode
MIDI sound playback	BOSS GS-10 MIDI OUT	MIDI cannot be handled when using Standard Driver mode. ("MIDI in Standard Driver Mode" (p. 80))

7. Click [OK] to close the Multimedia Properties dialog box.

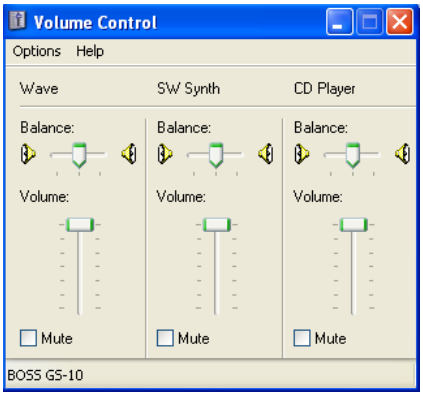
This concludes the procedure for setting the input and output destinations.

→ Next, set the Windows "Volume Control" (p. 144).

■ Volume Control setting

1. Click the Windows Start button, and select "Programs | Accessories | Entertainment | Volume Control."

The "Volume Control" dialog box will apper.



2. Raise or lower the slider to adjust the volume of the GS-10.

The GS-10 can use the Windows "volume control" to adjust the output volume.

Items that can be set

CD Player (CD Audio)	Controls the volume of "audio CDs" on the internal CD-ROM drive of the computer. (*1)
WAVE	Controls the volume of sound output from the "BOSS GS-10" audio output device. Digital output and analog output will change.
Synthesizer SW Synth	Controls the volume of the software synthesizer built into Windows.

*1 If the CD playback volume does not change when you adjust this control, then change the WAVE volume.
If you are using Windows 2000 and the CD Player is not displayed, check "Enable digital music CDs for this CD playback device" in Digital CD Playback.

→ "When playing audio CDs from the computer's internal CD-ROM drive, or using the GS-10 to play game music" (p. 145)

MEMO

If the Volume Control is not installed on your computer, use the Control Panel icon Add or Remove Programs to install it. For details on installation, refer to the Windows manual or Help.

When playing audio CDs from the computer's internal CD-ROM drive, or using the GS-10 to play game music

Windows XP/2000 users:

1. **Open the "System Properties" dialog box.**
   Windows XP- Click the Windows start button, and from the menu that appears, select "Control Panel."
   Windows 2000- Select "Start | Settings | Control Panel," and in the "Control Panel," double-click the System icon.
2. **Click the "Hardware" tab, and click the "Device Manager" button.**
   The "Device Manager" dialog box will apper.
3. **In CD-ROM drive, double-click the CD-ROM drive that you are using.**
   The CD-ROM drive's "Properties" dialog box will appear.
4. **Click the "Properties" tab, then in "Digital CD Playback," check the "Enable digital CD audio for this CD-ROM device" item.**

Windows Me users:

1. **Select "Start | Settings | Control Panel," and in "Control Panel," double-click the System icon.**
   The "System Properties" dialog box will appear.
2. **Double-click the CD-ROM icon, and then double-click the CD-ROM drive that you are using.**
   The CD-ROM drive's "Properties" dialog box will appear.
3. **Click the "Properties" tab, then in "Digital CD Playback," check the "Enable digital CD audio for this CD-ROM device" item.**

Windows 98 users:

1. **Select "Start | Settings | Control Panel," and in "Control Panel," double-click the Multimedia icon.**
   The "Multimedia Properties" dialog box will appear.
2. **Click the "Music CD" tab, and check the "Enable digital CD audio for this CD-ROM device" item.**

* *Depending on your system, playback may still not be possible. For details, please contact the manufacturer of your computer. If you are using a PC-card (PCMCIA) type CD-ROM drive, playing back WAVE data from a CD-ROM or playing an audio CD may cause interrupted sound, or possibly no sound at all.*

Installing & Setting Up the Driver (Macintosh)

Special Driver and Standard Driver

The GS-10 features two operational modes, each of which uses a different type of driver, with one mode using the special driver on the CD-ROM included with the GS-10 and the other mode using the standard Mac OS driver.

Before installing the drivers, you must first switch the GS-10's driver mode.

For instructions on switching the GS-10's driver modes, refer to "Switching the Driver Mode" (p. 80).

■ Special Driver

In Special Driver mode, allowing audio to be recorded/played/edited with high quality and stable timing.

Audio signals can be transferred between the GS-10 and the computer at a resolution of 24 bits and sampling frequencies of 44.1 kHz.

And in addition to audio, you can also control the GS-10 using MIDI messages and connect external MIDI devices and computers.

Select this mode if you are using an application that allows high-quality audio recording/playback/editing, such as an application that supports 24 bit audio or an ASIO-compatible application (e.g., Cubase VST, Logic Audio, or Metro).

→ "Installing the special driver" (p. 146)

■ Standard Driver

In Standard Driver mode, audio signals are transferred between the GS-10 and the computer at a resolution of 16 bits and sampling frequencies of 44.1 kHz.

Select this mode if you are using an application that uses Mac OS's own functionality, such as an application that uses the computer's CD-ROM drive to play back CD-audio, or an application that uses the software synthesizer included with Mac OS.

→ "Installing the OS-standard driver" (p. 157)

* *If you want to use MIDI, use special driver mode.*

Installing the special driver

The installation procedure will differ depending on your system.

Please proceed to one of the following sections, depending on the system you use.

- **Mac OS 9/8 users..... (p. 146)**
- **Mac OS X users ..... (p. 155)**

■ Mac OS 9/8 users

If using the unit in the Special driver mode, use either OMS or FreeMIDI as the MIDI driver.

The included GS-10 driver is an add-on module for using the GS-10 with OMS or FreeMIDI.

* *Either OMS or FreeMIDI must be installed in your Macintosh, as appropriate for the sequencer software you are using.*

MEMO

OMS can be found in the OMS 2.3.8 E folder of the CD-ROM. If you would like to learn more about OMS, refer to OMS_2.3_Mac.pdf in the OMS 2.3.8E folder of the CD-ROM. In order to read "OMS_2.3_Mac.pdf," you will need the Adobe Acrobat Reader.

Disconnect the GS-10 from the Macintosh before you perform the installation.

If the power of the GS-10 is turned on, a message like the following will appear when the Macintosh is started up. Perform the steps described below as appropriate for the message that is displayed.

If the screen indicates:

"Driver required for USB device `unknown device' is not available. Search for driver on the Internet?"

→ Click [Cancel].

If the screen indicates:

"Software required for using device `unknown device' cannot be found. Please refer to the manual included with the device, and install the necessary software."

→ Click [Cancel].

Use the following procedure to install the GS-10 driver.

1. Exit all currently running software (applications).

If you are using a virus checker or similar software, be sure to exit this as well.

2. Insert the CD-ROM into the CD-ROM drive.

3. Double-click the "GS-10 Driver-E Installer" icon (found in the Driver E (Mac OS 9/8) of the CD-ROM) to start up the installer.

4. Verify the Install Location, and click [Install].

* *If a message like the following is displayed, click [Continue].*

The other currently running applications will exit, and installation will continue.

A dialog box will indicate Installation completed.

5. Click [Restart] to restart your Macintosh.

NOTE

The indication for the "Install Location" will differ depending on your system. Make sure that the startup disk for the system you are using is selected.

OMS settings

If other MIDI devices are connected, you must turn off the power on all devices, and then make OMS settings according to the following procedure.

For more on connecting MIDI sound modules, refer to the owner's manual for the MIDI sound module you are using.

1. Before connecting the USB cable, switch the GS-10's driver mode to "Advanced."

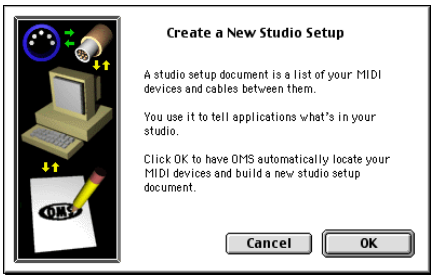
For instructions on switching the GS-10's driver modes, refer to "Switching the Driver Mode" (p. 80).

2. With the power switch turned OFF, use the USB cable to connect the GS-10 to your computer.

3. Make sure that the GS-10's OUTPUT LEVEL is set to the lowest setting, then switch ON the POWER switch.

4. In the "Opcode" folder, open the "OMS Applications" folder, and double-click the "OMS Setup" icon.

* *The first time OMS is started up, a "Create a New Studio Setup" dialog box will appear. Click [OK]. If this is the second or later time, select "New Studio Setup" from the File menu.*



* *If the "Apple Talk" dialog box appears, select [Turn It Off]. Then click [OK] in the dialog box that appears next.*

The "OMS Driver Search" dialog box will appear.

NOTE

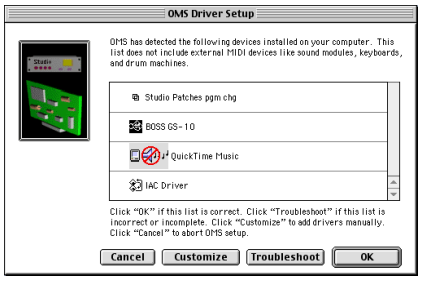
Turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and/or damage to other devices.

MEMO

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

5. **Click [Search].**

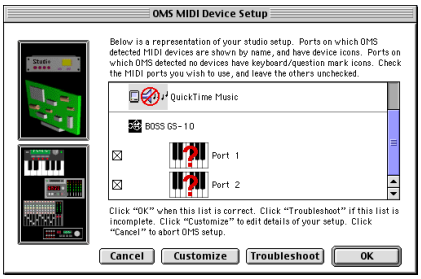
6. **When the search has been completed, verify that the "OMS Driver Setup" dialog box lists the BOSS GS-10, and click [OK].**



* *If the dialog box does not show "BOSS GS-10," check whether the GS-10 is connected correctly, and start up OMS Setup once again.*

7. **Verify that the "OMS MIDI Device Setup" dialog box lists the GS-10. Then click all check boxes from "Port 1" to "Port 2" to check them, and click [OK].**

A dialog box will appear, allowing you to save the settings in a file.



* *For other connected MIDI devices as well, add a check mark to the port(s) you want to use. For details on settings, refer to the manual that came with your MIDI device.*

* *BOSS/Roland can provide no guarantees or support regarding the operation of MIDI device made by another company. Please contact the manufacturer of your MIDI device.*

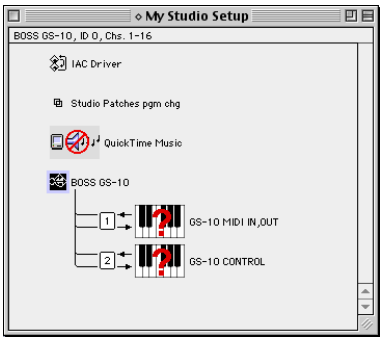
8. **Input the desired file name, and click [Save].**

9. **In the Studio Setup window, change the device name indicating the MIDI device connected to the GS-10 as follows.**

Click the device name, and you will be able to edit it.

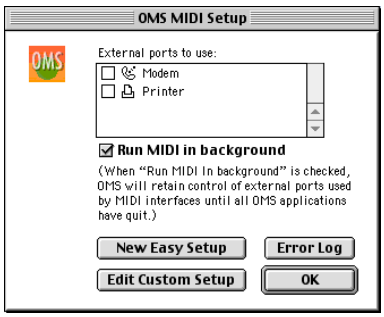
Port 1: GS-10 MIDI IN,OUT

Port 2: GS-10 CONTROL



10. **From the File menu, select "Save."**

11. **From the Edit menu, select "OMS MIDI Setup". In the OMS MIDI Setup dialog box that appears, check "Run MIDI in background," and click [OK].**

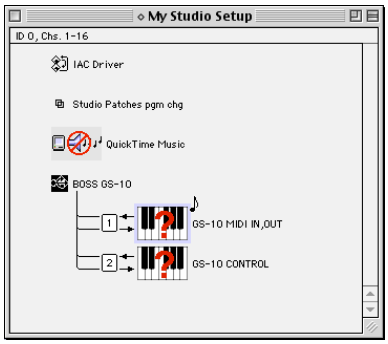


12. **Verify that MIDI transmission and reception occur correctly.**

From the Studio menu, choose [Test Studio].

13. **If a MIDI sound module is connected to the GS-10's MIDI OUT connector, click the GS-10 MIDI IN,OUT icon in the Studio Setup window.**

If you hear sound, the settings have been made correctly.



* *GS-10 MIDI IN,OUT corresponds to the GS-10's MIDI IN,MIDI OUT. GS-10 CONTROL corresponds to the GS-10's control port.*

14. **After you have verified this, and exit OMS Setup.**

15. **Make MIDI device settings on your sequencer software.**

For details on settings, refer to the manual that came with your software.

→ Next, you need to install the ASIO driver (p. 154).

NOTE

If a MIDI sound module is connected to the GS-10, the following step will cause a relatively loud sound to be produced by the sound module, so it is a good idea to turn down the volume on the sound module first.

FreeMIDI settings

If other MIDI devices are connected, you must turn off the power on all devices, and then make FreeMIDI settings according to the following procedure.

For more on connecting MIDI sound modules, refer to the owner's manual for the MIDI sound module you are using.

1. Before connecting the USB cable, switch the GS-10's driver mode to "Advanced."

For instructions on switching the GS-10's driver modes, refer to "Switching the Driver Mode" (p. 80).

2. With the power switch turned OFF, use the USB cable to connect the GS-10 to your computer.

3. Make sure that the GS-10's OUTPUT LEVEL is set to the lowest setting, then switch ON the POWER switch.

4. Open the "FreeMIDI Applications" folder, and double-click the "FreeMIDI Setup" icon.

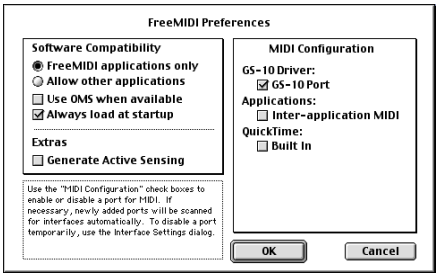
* *The first time FreeMIDI is started up, a "Welcome to FreeMIDI!" dialog box will appear. Click [Continue]. If this is the second or later time, select "FreeMIDI Preferences" from the File menu.*

* *When "OMS is installed on this computer..." appears, click [FreeMIDI].*

5. Make sure that "Use OMS when available" is unchecked in the FreeMIDI Preferences dialog box.

If it is checked, remove the check mark, and restart FreeMIDI.

6. In the FreeMIDI Preferences dialog box, check "GS-10 Port" which is located below GS-10 Driver in MIDI Configuration, and click [OK].



* *If the dialog box does not show "GS-10 Driver," check whether the GS-10 is connected correctly, and start up FreeMIDI Setup once again.*

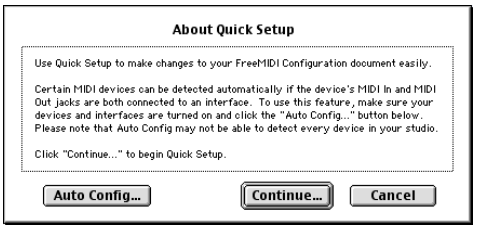
NOTE

Turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and/or damage to other devices.

MEMO

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

The About Quick Setup dialog box will appear.

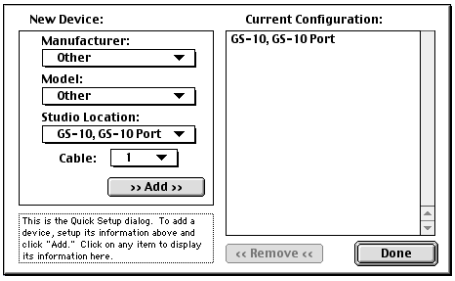


* *If the dialog will not appear, select "Quick Setup" from the Configuration menu.*

7. Click [Continue].

* *If the dialog box does not show "GS-10 Driver," check whether the GS-10 is connected correctly, and start up FreeMIDI Setup once again.*

8. In the dialog box that appears, set "Studio Location:" to "GS-10,GS-10 Port." For the "Cable" field located below it, choose Cable 1 and click [>>Add>>].



9. Repeat step 8 up to Cable 2.

10. When settings are complete, click [Done].

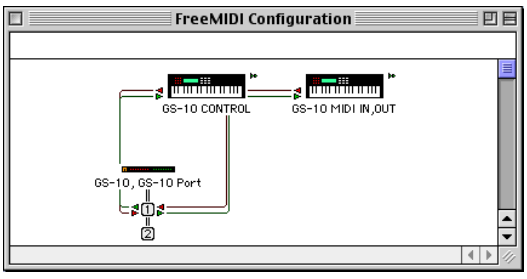
A setting window will appear.

11. In the setting window, change the device name indicating the MIDI device connected to the GS-10 as follows.

Click the device name, and you will be able to edit it.

Device 1: GS-10 MIDI IN,OUT

Device 2: GS-10 CONTROL



12. From the File menu, select [Save], and save your settings.

13. Verify that MIDI transmission and reception occur correctly.

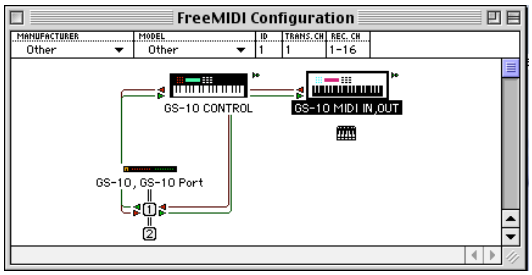
From the MIDI menu, choose "Check Connections."

NOTE

If a MIDI sound module is connected to the GS-10, the following step will cause a relatively loud sound to be produced by the sound module, so it is a good idea to turn down the volume on the sound module first.

14. If a MIDI sound module is connected to the GS-10's MIDI OUT connector, click the GS-10 MIDI IN,OUT icon in the setting window.

If you hear sound, the settings have been made correctly.



GS-10 MIDI IN,OUT corresponds to the GS-10's MIDI IN,MIDI OUT. GS-10 CONTROL corresponds to the GS-10's control port

15. After you have verified this, and exit FreeMIDI Setup.

16. Make MIDI device settings on your sequencer software.

For details on settings, refer to the manual that came with your software.

→ Next, you need to install the ASIO driver (p. 154).

Installing the ASIO driver

You must install the MIDI driver even if you will be using only audio on the GS-10.

* *Be sure to install the MIDI driver before you install the ASIO driver.*

This section explains how to install the ASIO driver that allows the GS-10 to be used by your sequencer software or audio editing software.

In Special mode, the GS-10 cannot play back audio data from the Macintosh's sound manager (such as audio CDs and alert sounds).

The ASIO driver of the GS-10 supports the following audio input/output channels.

- Audio input 24/16 bit 1 stereo ch. (2 mono chs.)
- Audio output 24/16 bit 1 stereo ch. (2 mono chs.)

Here we will explain how to install the ASIO 1.0 16 bit-compatible driver.

If your ASIO-compatible software supports ASIO 2.0 or recording/playback of 24 bit audio data, using the following drivers will provide a higher quality environment.

ASIO-compatible software		Driver to use
ASIO2.0-compatible	24 bit compatible	
x	x	GS-10 ASIO1.0 16 bit
x	o	GS-10 ASIO1.0 24 bit
x	x	GS-10 ASIO2.0 16 bit
o	o	GS-10 ASIO2.0 24 bit

1. From the Driver E (Mac OS 9/8) –ASIO folder of the CD-ROM, copy [GS-10 ASIO1.0 16bit] to the [ASIO Drivers] folder within the ASIO Drivers folder of the ASIO-compatible software you are using (e.g., Cubase VST, Logic Audio, Digital Performer, Metro, or SPARK LE).

2. Start up your ASIO-compatible software (e.g., Cubase VST, Logic Audio, Digital Performer, Metro, or SPARK LE).

3. Open the Audio setting dialog box of your ASIO-compatible software, and select [GS-10 ASIO 16bit] as the ASIO Device.

MEMO

ASIO (Steinberg Audio Stream In/Out Interface) This is an audio interface standard promoted by the Steinberg Corporation. When the GS-10 is used with ASIO-compatible software, the synchronization precision will be improved, allowing a more sophisticated music production environment.

MEMO

The "Audio setting" dialog box will be named differently depending on your software. For details refer to the manual of your software.

■ Mac OS X users

1. With the GS-10 disconnected, start up Mac OS.

Disconnect all USB cables except for a USB keyboard and USB mouse (if used).

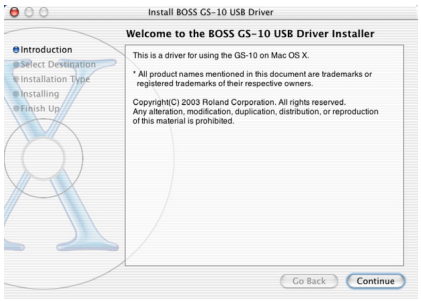
2. Insert the CD-ROM into the CD-ROM drive.

3. Double-click the "GS10USBDriver" icon (found in the Driver (Mac OS X) of the CD-ROM).

In case of Mac OS X v10.1.5, the display will indicate "Authorization," then click on the key symbol.

4. The "Authenticate" dialog box will appear; type your password and click "OK."

The display will indicate "Welcome to the GS-10 USB Driver Installer."

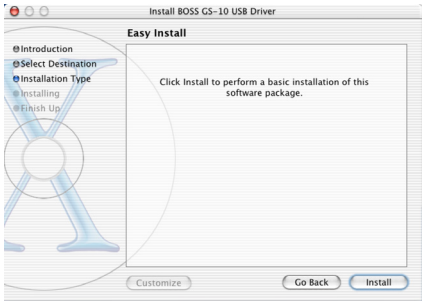


5. Click [Continue].

The display will indicate "Select a Destination."

6. Click the drive on which the system is installed, then click [Continue].

The display will indicate "Easy Install."

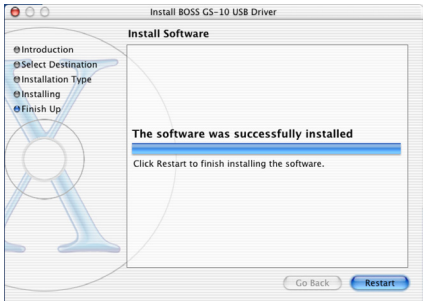


7. Click [Install] or [Update].

The display will indicate "Installing this software requires you to restart...".

8. **Click [Continue Installation].**

The display will indicate "The software was successfully installed."



9. **Click [Restart] to restart your Macintosh.**

Installing the OS-standard driver

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

- **Mac OS 9/8 users..... (p. 157)**
- **Mac OS X users ..... (p. 160)**

■ Mac OS 9/8 users

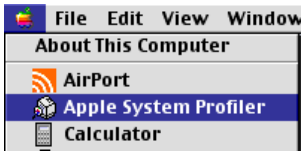
1. With the GS-10 disconnected, start up Mac OS.

2. Exit all currently running software (applications).

If you are using a virus checker or similar software, be sure to exit it as well.

3. After starting up Mac OS, select Apple System Profiler from the Apple menu.

The "Apple System Profiler" dialog box will appear.



4. Click the "Devices and Volumes" tab.

5. Before connecting the USB cable, switch the GS-10's driver mode to "Standard."

For instructions on switching the GS-10's driver modes, refer to "Switching the Driver Mode" (p. 80).

6. With the power switch turned OFF, use the USB cable to connect the GS-10 to your computer.

7. Make sure that the GS-10's OUTPUT LEVEL is set to the lowest setting, then switch ON the POWER switch.

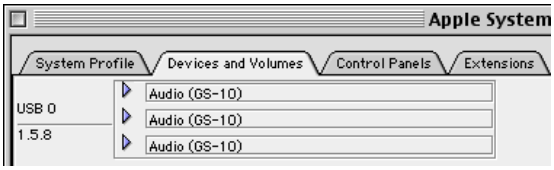
Wait for approximately five seconds.

While you are waiting, the screen display will not change, but the GS-10 is being detected. Do not touch the mouse or keyboard.

8. In order to check that detection has been completed, once again go to "Apple System Profiler", and select "Update all information" from the Commands menu.

In the USB area, three audio devices will be displayed.

If these are displayed correctly, driver installation has succeeded.



9. In the File menu, click Quit to close "Apple System Profiler."

If they are not displayed correctly, disconnect the GS-10, wait for about ten seconds, and then repeat the procedure from step 2.

NOTE

Turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and/or damage to other devices.

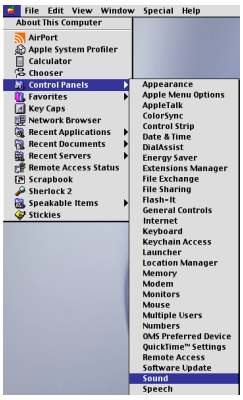
MEMO

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

Settings the sound input/output

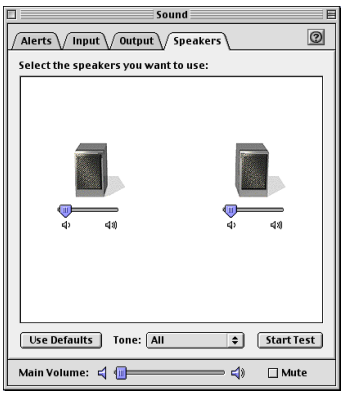
1. From the Apple menu, select "Control Panel" – "Sound."

The "Sound" dialog box will appear.



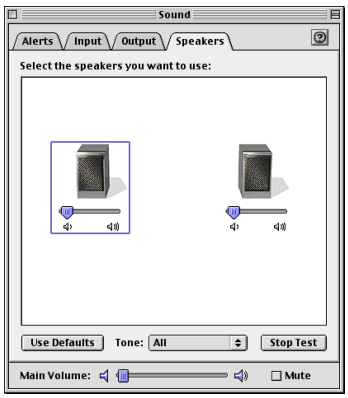
The "Sound" dialog box will appear.

2. Click the "Speakers" tab or "Speaker" Settings.



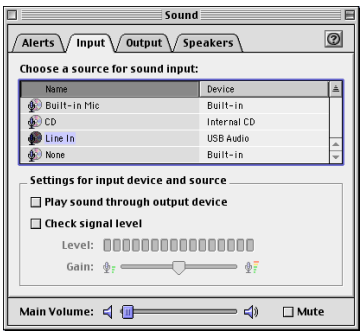
3. With the volume turned down on the GS-10 and on your peripheral audio equipment, click [Start Test].

Test signals will be output from the GS-10; left first, then right, as indicated in the screen.



4. In the Sound dialog box, click the "Input" tab.

5. **In "Choose a source for sound input (Device)," select "USB audio."**



* *Do not check "Play sound through output device".*

6. **When you are finished making settings, close the "Sound" dialog box.**

7. **From the File menu, select "Quit."**

NOTE

If USB audio is not displayed, close the "Sound" dialog box, and disconnect the GS-10's USB cable from the Macintosh. Perform the driver installation (p. 157) once again.

■ Mac OS X users

1. With the GS-10 disconnected, start up Mac OS.

Disconnect all USB cables except for a USB keyboard and USB mouse (if used).

2. Exit all currently running software (applications).

Also close any open windows. If you are using virus checking or similar software, be sure to exit it as well.

3. Before connecting the USB cable, switch the GS-10's driver mode to "Standard."

For instructions on switching the GS-10's driver modes, refer to "Switching the Driver Mode" (p. 80).

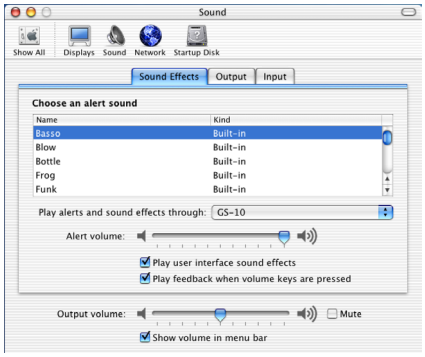
4. With the power switch turned OFF, use the USB cable to connect the GS-10 to your computer.

5. Make sure that the GS-10's OUTPUT LEVEL is set to the lowest setting, then switch ON the POWER switch.

6. Open "System Preferences" and click "Sound."

7. In the "Sound Effects" tab, set "Play alerts and sound effects through" to "GS-10."

Now, try clicking on an alert in the list. If the sound of the alert comes from the GS-10 when you do so, it means that the GS-10 is being recognized and that the driver has been installed properly.



NOTE

Turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and/or damage to other devices.

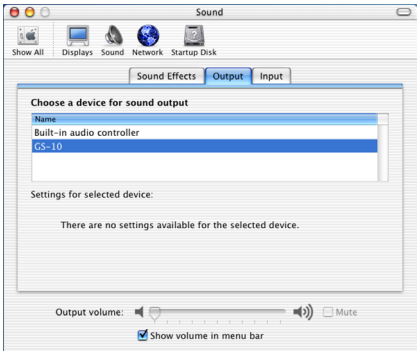
MEMO

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

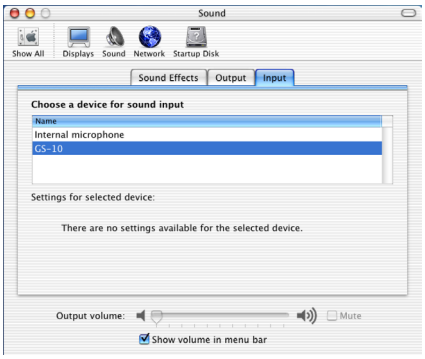
MEMO

Once set this way, all sounds from your Macintosh (including audio alerts) will be output only through the GS-10, not from the speakers of your Macintosh.

8. **In the Output tab, set "Choose a device for sound output" to "GS-10."**



9. **In the Input tab, set "Choose a device for sound input" to "GS-10."**



NOTE

The "Main Volume" slider will not move.

Cautions when using the GS-10

Before you use your software, please note the following points.

- Select "GS-10" in the audio driver setting of your software. For details, refer to the manual that came with your software.
- Connect the GS-10 to your computer via a USB cable before you start up your sequencer or other software.
- Do not disconnect the USB cable from the GS-10 while your sequencer or other software is running.
- Disconnect the USB cable from the GS-10 only after you have quit your sequencer or other software.
- Leave the Sleep function of your Macintosh turned off.
- The GS-10 will not work in the Classic environment of Mac OS X. Use the GS-10 when the Classic environment is not running.

Setting the Special Driver's Functions

Adjusting the audio latency

When using the GS-10 in Advanced mode, you can change the driver settings to adjust the latency of the audio. To adjust the latency, change the Buffer Size in the driver settings dialog box.

1. As described in "Opening the special driver settings dialog box" (p. 163), open the "Driver Settings" dialog box.

2. Adjust the driver buffer size.

The following setting will produce the shortest latency.

Windows:

Set "Audio Buffer Size" to the far left (Min).

Macintosh:

Set "Buffer Size" to the far left (Min).

3. Click [OK] to close the driver settings dialog box.

4. Restart the application that is using the GS-10.

If you are using an application that has a function for testing audio devices, get it to perform its tests.

5. Play back audio data on your application.

If interruptions occur in the sound, repeat this procedure, and gradually increase the buffer size specified in step 2 until interruptions no longer occur.

* *Depending on the application you are using, there may be a buffer size or latency adjustment function among the audio settings of the application as well. For details, refer to the operation manual for your application.*

Using ASIO Direct Monitor

If you are using the GS-10 from an ASIO 2.0 compatible application, switching of the GS-10's output signals ("Switching the Output Signals (Direct Monitor)" (p. 79)) can be controlled from your ASIO 2.0 compatible application.

1. As described in Opening the special driver settings dialog box (p. 163), open the "Driver Settings" dialog box.

2. Check the "Use ASIO Direct Monitor" check box.

3. Click [OK] to close the driver settings dialog box.

* *Depending on the application you are using, there may be a ASIO Direct Monitor among the audio settings of the application as well. For details, refer to the operation manual for your application.*

* *When using ASIO Direct Monitor, monitoring may switch on/off at unexpected times, depending on the application settings and on the recording procedure. If this occurs, uncheck the check box in step 2 to disable ASIO Direct Monitor.*

Opening the special driver settings dialog box

If using Windows:

1. **Open the "Control Panel" and double-click "BOSS GS-10."**
   The "BOSS GS-10 Driver Settings" dialog box will appear.

   * *In Windows XP, click "Switch to classic view" to switch the display to the classic view. BOSS GS-10 will not be displayed unless the classic view is selected.*

   * *In Windows Me, click "View all Control Panel options".*

If using Macintosh:

1. **Open the "ASIO Control Panel" from the "Audio Settings" dialog box of your ASIO-compatible application.**
   The name of the Audio Settings dialog box and the procedure for opening the ASIO Control Panel will differ depending on your application. For details, refer to the operation manual for your application.

Troubleshooting

If there is no sound or other operational problems occur, first check through the following solutions. If this does not resolve the problem, then contact your dealer or a nearby Roland service station.

Problems when using the GS-10

Problems with the sound

No sound / volume too low

❑ **Are the built-in speakers set to OFF?**

→ Press [SPEAKER ON/OFF] to ON (p. 15).

❑ **Are the connection cables broken?**

→ Try using a different set of connection cables.

❑ **Is the GS-10 correctly connected to the other devices?**

→ Check connections with the other devices (p. 14).

❑ **Is the connected amp/mixer turned off, or the volume lowered?**

→ Check the settings of your amp/mixer system.

❑ **Is the OUTPUT LEVEL knob lowered?**

→ Adjust the OUTPUT LEVEL knob to an appropriate position (p. 15).

❑ **Is Tuner set to On?**

→ When the volume is set to "Mute" in the Tuner mode, even the direct sound will not be output by setting the Tuner to "On" (p. 64).

❑ **Is each effect set correctly?**

→ Use the "Meter function" (p. 67) to check the output level of each effect. If there is an effect for which the meter does not move, check the settings for that effect.

❑ **Is "USB/DIG:Out Levl" set to a low value?**

→ Adjust the setting to an appropriate value (p. 78).

❑ **Is "FV: Level" or "MST: Patch Level" specified as an assign Target?**

→ Move the controller to which it is assigned.

❑ **Is the Dir Monitor (p. 79) set to OFF?**

→ Note that turning off this setting will stop the sounds from being output when the application is not recording or if its settings are not correctly made. Set to ON.

Sound from devices connected to the INPUT jack is not heard in the headphones

❑ **Is the AUX INPUT LEVEL raised to suitable level?**

→ Adjust the volume level.

❑ **Is the Dir Monitor (p. 79) set to OFF?**

→ Note that turning off this setting will stop the sounds from being output when the application is not recording or if its settings are not correctly made. Set to ON.

The volume level of the instrument connected to INPUT is too low

❑ **Could you be using a connection cable that contains a resistor?**

→ Use a connection cable that does not contain a resistor.

❑ **Is the AUX INPUT LEVEL knob lowered?**

→ Adjust the AUX INPUT LEVEL knob to an appropriate position (p. 17).

❑ **Is "USB:Input Level" set to a low value?**

→ Adjust the setting to an appropriate value (p. 78).

❑ **Is "Mic Gain" set to a low value?**

→ Adjust the setting to an appropriate value (p. 20).

The sound of a device connected to the AUX INPUT jack is distorted

→ If you are inputting sound through the AUX IN jacks, use AUX INPUT LEVEL knob of the GS-10 to lower the input level.

The sound of a device connected to the MIC INPUT jack is distorted

→ If you are inputting sound through the MIC INPUT jacks, adjust the Mic Gain (p. 20) of the GS-10 to lower the input level.

Oscillating sound occurs

❑ **Is the AUX INPUT LEVEL knob turned up too high?**

→ If inputting audio from AUX INPUT, reduce the input level with the AUX INPUT LEVEL knob.

❑ **Is "Mic Gain" set to a high value?**

→ Lower the Mic Gain (p. 20) value.

❑ **Is the value for any gain- or volume-related effects parameter set too high?**

→ Lower these values.

Other Problems

Patch does not change

❑ **Is something other than the Play screen shown in the display?**

→ On the GS-10, patches can be selected only when the Play screen is displayed. Press [EXIT] to return to the Play screen (p. 15).

Parameters specified with Assign can't be controlled

❑ **Could the effect be switched off?**

→ To control a parameter using the expression pedal or CTL pedal, make sure the effect that contains the parameter you intend to control is switched on.

❑ **Is something other than "Assign 1–8" selected for the Expression Pedal function setting?**

→ When operating an expression pedal connected to the EXP PEDAL/CTL 1, 2 jack, set the Expression Pedal function (p. 58) to "Assign 1–8."

❑ **Is something other than "Assign 1–8" selected for the CTL 1, 2 function setting?**

→ When operating a foot switch connected to the EXP PEDAL/CTL 1, 2 jack, set the CTL 1, 2 function (p. 59) to "Assign 1–8."

❑ **Do the MIDI channel settings of both devices match?**

→ Make sure that the MIDI channels of both devices match (p. 69).

❑ **Do the controller number settings of both devices match?**

→ Make sure that the controller number of both devices match (p. 70).

MIDI messages are not transmitted/ received

❑ **Are the MIDI cables broken?**

→ Try another set of MIDI cables.

❑ **Is the GS-10 correctly connected to the other MIDI device?**

→ Check connections with the other MIDI device.

❑ **Do the MIDI channel settings of both devices match?**

→ Make sure that the MIDI channels of both devices match (p. 69).

❑ **When you send messages from the GS-10, make sure the GS-10 is set to the settings appropriate for sending data.**

→ Check the on/off status for transmission of program change messages and the settings for the controller numbers to be transmitted (p. 70) .

The GS-10 cannot be controlled with the MIDI controller connected to the MIDI IN connector

❑ **Are you connected via USB?**

→ If the GS-10 is connected via USB with the driver mode set to Advanced, messages to MIDI IN are transmitted to the computer via USB. Disconnect the USB cable.

Windows Macintosh Problems common to Windows and Macintosh

Windows Problems occurring only in Windows

Macintosh Problems occurring only in Macintosh

Problems related to the USB driver

Windows

An "Unknown driver found" dialog box appears, and you are unable to install the driver

Windows

"Find new hardware wizard" does not execute automatically

Windows

"Find new hardware wizard" ends before the process is completed

❑ **It may take about 15 seconds (or more) after the USB cable is connected for the GS-10 to be detected.**

❑ **Is the USB cable connected correctly?**

→ Make sure that the GS-10 and your computer are correctly connected via a USB cable.

❑ **Is USB enabled on your computer?**

→ Refer to the operation manual for your computer, and make sure that USB is enabled.

❑ **It has been found that in some cases, not all of the Windows 98 files required to support audio via USB are installed when a computer is shipped.**

→ Please contact the manufacturer of your computer.

❑ **Does your computer meet the USB specifications?**

→ If you are using a computer that does not fulfill the electrical requirements of the USB specifications, operation may be unstable. In this case, you may be able to solve the problem by connecting a USB hub.

❑ **Does "Unknown device" appear for "Other device" or "Universal serial bus controller"?**

→ Use the following procedure to delete "Other device" (Universal Serial Bus Controller) "Unknown device", and then restart your computer.

1. **In the Windows Control Panel, double-click System.**
   The "System Properties" dialog box will appear.
2. **Click the "Device Manager" tab.**
3. **Double-click "Other device" or "Universal Serial Bus Controller" to display a list of devices.**
4. **From the list, select the unknown device and click [Delete].**
5. **In the dialog box that asks you to confirm the deletion, click [OK].**
6. **Verify that "Other device" or "Unknown device" is not displayed in the list, and click [Close] to close the dialog box.**

Windows

"Found unknown device" appears even though you installed the driver

❑ **If your computer or USB hub has two or more USB connectors, and you connect the GS-10 to a USB connector to which the GS-10 has never been connected before, the "Unknown device" dialog box may appear even on a computer onto which you have already installed the driver.**

→ Refer to "Installing & Setting Up the Driver (Windows)" (p. 126), and install the driver once again. This is not a malfunction.

Windows

Driver is not installed correctly

→ As described in "Deleting the special driver" (p. 173), delete the USB audio device driver that is installed in your computer, and then install the GS-10 driver once again as described in "Installing & Setting Up the Driver (Windows)" (p. 126). Also check whether there is an "Unknown device" in "Other devices" or "Universal Serial Bus Controller."
If you find one, delete it.

Windows

Can't install/delete/use the driver in Windows XP/2000

❑ **Did you log on to Windows as a user with administrative privileges?**

→ In order to install/delete/re-install the driver in Windows XP/2000, you must be logged into Windows as a user with administrative privileges, such as Administrator. For details, please contact the system administrator for your computer system.

❑ **Did you make "Driver Signing Options"?**

→ In order to install/re-install the driver, you must make "Driver Signing Options."
(Windows XP → p. 127, Windows 2000 → p. 131)

Windows

Windows XP/2000 displays a "Hardware Installation" or "Digital Signature Not Found" dialog box

❑ **Did you make "Driver Signing Options"?**

→ In order to install/re-install the driver, you must make the settings described in "Driver Signing Options."
(Windows XP → p. 127, Windows 2000 → p. 131)

Windows

Device Manager shows "?", "!", or "USB Composite Device"

Windows

The "Insert Disk" dialog box does not appear

→ Use the following procedure to re-install the driver.

1. **Turn off the power of your computer, and start up Windows with all USB cables disconnected (except for keyboard and mouse).**
2. **After Windows restarts, use a USB cable to connect the GS-10 to your computer.**
3. **Click the Windows [Start] button, and from the menu that appears, choose "Settings | Control Panel."**
4. **Double-click the System icon.**
   The "System Properties" dialog box will appear.
5. **Click the "Device Manager" tab.**
6. **Check whether you can see an indication of "?Composite USB Device", "?USB Device", "!USB Device", or "USB composite device" displayed below "Sound, Video, and Game Controllers", "Other Devices", or "Universal Serial Bus Controller".**
   If you find any such indication, select it and click [Delete].
7. **A dialog box will ask you to confirm deletion of the device. Verify the contents of the dialog box, and then click [OK].**
   In the same way, delete all indications of "?Composite USB Device", "?USB Device", "USB Device", and "USB composite device" that you find.
   If you find BOSS GS-10 with a yellow "!" or a red "?" displayed beside it, delete this in the same way.
8. **When you have finished deleting the unwanted devices, click [OK] in the System Properties dialog box.**
9. **Turn off the power of the GS-10, then delete the driver. (→ Deleting the special driver (p. 173))**
10. **Restart Windows.**
    Then install the driver once again. (→ Installing & Setting Up the Driver (Windows) (p. 126)).

* *If the problem still occurs after you have taken the above measures, please refer also to the Readme file for the USB driver. The Readme file is on the CD-ROM.*

Macintosh

A dialog box says "Can't use driver required by USB device 'BOSS GS-10'"

❑ **[Special driver mode] Are you using only audio?**

→ You must install the MIDI driver even if you are using the GS-10 only with audio. Please install the GS-10 driver for OMS or FreeMIDI.
(→ Installing the special driver (p. 146))

Problems when using the USB driver

Windows Macintosh

Operating system becomes unstable

❑ **Operation becomes unstable when the computer is started up with the GS-10 already connected**

→ Please start up your computer with the GS-10 disconnected, and then connect the GS-10. On a computer that uses a USB keyboard, starting up the computer with the GS-10 already connected may cause operation to become unstable. In this case, start up the computer with the GS-10 disconnected, and then connect the GS-10.

Windows Macintosh

Can't hear sound from the computer

❑ **Is it possible that the GS-10's OUTPUT LEVEL has been placed at 0 (turned fully counterclockwise)?**

❑ **Have you specified the audio and MIDI data output destination for your operating system?**

→ You must specify the GS-10 as the audio data output destination for your computer. For details on how to make this setting, refer to Settings and checking. (Windows, "Driver settings" (p. 141)/ Macintosh, "OMS settings" (p. 148), "FreeMIDI settings" (p. 151))

❑ **In your playback software, have you specified the audio data output destination?**

→ For some software, such as Cakewalk Music Creator, you will need to specify the GS-10 as the output destination for audio data. For details on the procedure for making settings, refer to the owner's manual for your software.

❑ **Are you running multiple applications?**

→ If multiple applications are running simultaneously, an error message may appear. If this occurs, click [OK] and exit the other applications.
Even if an application window is closed, it is still running if it appears in the taskbar. Be sure to exit unneeded applications displayed.

❑ **Was the driver installed correctly?**

→ In order for you to play back audio data via the GS-10, the driver must be installed. For installation and settings, refer to "Installing & Setting Up the Driver" (Windows, p. 126 / Macintosh, p. 146).

❑ **Is your computer in Suspend or Sleep mode?**

→ If so, get your computer to resume normal operation, then exit all applications that are using the GS-10. Next, turn the GS-10's power off, then switch it on again.

❑ **Did you plug in the USB cable, or unplug it while an application was running?**

→ Exit all applications that are using the GS-10, and exit all applications that are using the GS-10, and re-connect the GS-10.

❑ **Have you selected "Game compatible device" or "Voice modem" as the output for the audio track?**

→ If game compatible device or voice modem (the actual name will depend on the computer you are using) is selected for the audio track of your software, the audio track may not play back. Do not select these devices as the port.

❑ **Has your computer been set to enter Sleep mode?**

→ If your computer enters Sleep mode, exit the software you are using, and then restart your computer. We recommend that you set your computer to not use Sleep mode.

Windows

❑ **[Standard driver mode] Are you attempting to play back an audio CD using your computer's CD player?**

→ If you want to play an audio CD from your computer's internal CD-ROM drive, refer to "When playing audio CDs from the computer's internal CD-ROM drive, or using the GS-10 to play game music" (p. 145).

Windows

❑ **Are the "Volume Control" faders raised?**

→ Adjust the volume of the faders as described in "Volume Control setting" (p. 144).

Can't play back / record MIDI

Windows

❑ **Has the MIDI device you are using been set correctly?**

→ In order to record/play MIDI tracks using the GS-10, you must correctly install the GS-10 driver (Installing & Setting Up the Driver (Windows) (p. 126)).
Also make sure that the input port and output port are set as follows in your software.

INPUT port	OUTPUT port
BOSS GS-10 MIDI IN	BOSS GS-10 MIDI OUT

Macintosh

❑ **Has the MIDI device you are using been selected correctly?**

→ Select [GS-10 MIDI IN/OUT] as the MIDI output device.

Windows Macintosh

❑ **Are the track outputs set correctly?**

→ MIDI tracks to which no MIDI playback device is assigned will not be heard. If you want to play back a MIDI track, you must make sure that the MIDI device you want to use is displayed in your software as the MIDI output port. For details, refer to the owner's manual for your software.

Macintosh

❑ **Is OMS/FreeMIDI set correctly?**

→ As described in "OMS settings" (p. 148) or "FreeMIDI settings" (p. 151), check the OMS or FreeMIDI settings. Also make sure that the device for MIDI IN/OUT is correctly selected in the MIDI settings of your MIDI sequencer software.

Macintosh

❑ **Is the OMS setup enabled?**

→ If a diamond-shaped symbol is not displayed at the left edge of the title area in the OMS setup window, the setup is not enabled.
From the OMS File menu, choose "Make Current." ("OMS settings" (p. 148))

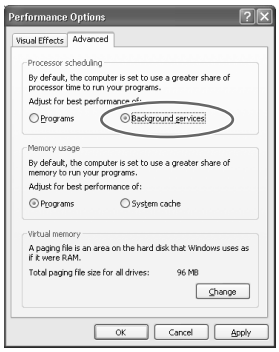
Interrupted notes or delays occur during MIDI playback

Windows

❑ **Make Windows XP settings to enable background processing.**

→ Make the following settings so that MIDI processing will occur smoothly.

1. **Click the Windows start button, and from the menu that appears, select "Control Panel."**
2. **In "Pick a category", click "Performance and Maintenance".**
3. **In "or pick a Control Panel icon", click the System icon.**
4. **Click the "Advanced" tab.**
5. **At the right of the Performance field, click [Settings].**
   The "Performance Options" dialog box will appear.
6. **Click the "Advanced" tab.**



7. **In the Processor Scheduling field, select "Background services", and click [OK].**
8. **In the "System Properties" dialog box, click [OK].**
   The "System Properties" dialog box will close.

Noise is heard during audio playback

Windows Macintosh

❑ **Is the AUX INPUT LEVEL knob raised?**

→ If you are not using any audio devices connected to the AUX INPUT, set the AUX INPUT LEVEL knob to minimum position.

❑ **Is a mic or guitar still connected?**

→ If a mic or guitar is connected to the GS-10, disconnect the mic or guitar. Disconnect any audio devices you are not using.

❑ **Noise is sometimes heard in the line input or mic input.**

→ If a USB-compatible MIDI sound module and the GS-10 are connected via USB to the same computer, and the outputs of the MIDI sound module are connected to the line input jacks of the GS-10, noise from your computer may be heard via the MIDI sound module from the GS-10, depending on the computer you are using. If this occurs, you can either connect the MIDI sound module and the GS-10 in parallel using a self-powered hub, or connect the MIDI sound module via its serial or MIDI interface.

❑ **Are two or more audio devices such as the GS-10 or a mixer connected to your computer?**

→ Try connecting only a single GS-10 unit, and check whether the noise disappears. If numerous audio devices are connected to a computer, noise may occur depending on your system. In such cases, connect only the GS-10 to your computer.

Macintosh

❑ **Does your sequencer software support ASIO 2.0?**

→ If your ASIO-compatible software does not support ASIO 2.0, it will not operate correctly if you use [GS-10 ASIO2.0 16bit] or [GS-10 ASIO2.0 24bit] as the ASIO driver.
In this case, select either [GS-10 ASIO1.0 16bit] or [GS-10 ASIO1.0 24bit] as the ASIO driver.

Macintosh

❑ **Does your sequencer software support 24-bit audio?**

→ If your ASIO-compatible software does not support 24-bit audio input/output, it will not operate correctly if you select [GS-10 ASIO1.0 24bit] or [GS-10 ASIO2.0 24bit] as the ASIO driver. In this case, select either [GS-10 ASIO1.0 16bit] or [GS-10 ASIO2.0 16bit] as the ASIO driver.

Macintosh

❑ **Is the GS-10 connected to a USB hub?**

→ Try connecting the GS-10 directly to the USB connector of the Macintosh itself.

Macintosh

❑ **Are you using a USB device other than the GS-10?**

→ Try turning off the power of all USB audio devices other than the GS-10.

Windows Macintosh

→ In some cases, you may also be able to solve this problem by grounding the chassis of your computer, or the grounding connector of the AC power supply plug of your computer. In addition, you can check whether any devices that produce a strong magnetic field are located nearby, such as a television or microwave oven.
Also check the troubleshooting item Sound is interrupted during audio recording/playback.

Sound is interrupted during audio recording/playback

Windows Macintosh

❑ **Are many applications running on your computer?**

→ If you use many applications or start up other applications during playback, playback may be interrupted, depending on your computer system. Please exit unneeded applications, and try again. If this does not resolve the problem, try restarting your computer.

Windows

❑ **Graphic accelerators may cause noise to be heard during audio playback.**

→ Use the following procedure to turn the graphic accelerator "Off".

1. **In the Windows Control Panel, double-click Display to open the "Display Properties" dialog box, and click the "Settings" tab.**
2. **Click Advanced, and in the properties that appear, click the "Performance" tab.**
   For Windows XP, click Advanced, and then click the Troubleshoot tab.
   For Windows 2000, click Advanced, and then click the Troubleshooting tab.
3. **Set the Hardware acceleration slider to None, and click [OK].**
4. **In the "Display Properties" dialog box, click [OK] to close the dialog box.**
5. **Restart your computer.**

Windows

❑ **In Windows XP, make the settings that enable background processing.**

→ Make these settings so that audio processing can be performed smoothly.
Make settings as described in Make Windows XP settings to enable background processing (p. 169).

Windows

→ Try using the following procedure to change your disk drive settings.
The following setting item may not exist on some computers.

1. **In the Windows Control Panel, double-click System.**
2. **Click the "Device Manager" tab.**
3. **Double-click "Disk Drives" to see the list of devices.**
4. **From the list, select GENERIC IDE DISK TYPE??, and click Properties to access the GENERIC IDE DISK TYPE?? Properties dialog box.**
   * *In the ?? field of GENERIC IDE DISK TYPE??, there will be a number that differs depending on your computing environment.*
5. **Click the "Settings" tab, place a check mark in the check box for the DMA option, and click [OK] to close the dialog box.**
   * *Depending on your system, a DMA Settings dialog box may appear. Check the contents, and click either [OK] or [Cancel].*
6. **In the "System Properties" dialog box, click [OK] to close the dialog box.**
7. **Restart your computer.**

Windows Macintosh

❑ **Try installing more memory.**

→ Installing more memory will increase the performance of your computer. For details on how to install more memory, refer to the operation manual for your computer.

Windows Macintosh

❑ **Does your computer satisfy the requirements of the USB standard?**

→ If you are using a computer (such as a computer that you yourself assembled) that does not satisfy the electrical requirements of the USB specifications, you may experience interruptions in the audio. If this occurs, you may be able to solve the problem by connecting a USB hub that contains its own power supply.

❑ **On some computers, audio playback may be interrupted due to the Power Management settings in the Control Panel.**

→ The Power Supply Properties that you see when you double-click Power Management will differ depending on your computer system. One example is given below, but you should also refer to the operation manual for your computer. Some computers may not have all of the following setting items.

1. **Click the Windows Start button, and select "Settings | Control Panel" to open the Control Panel.**
2. **In Control Panel, double-click System to open the "System Properties" dialog box.**
3. **Click the "Device Manager" tab.**
4. **Double-click System Devices to display the list of devices.**
5. **From the list, select Advanced Power Management Support. Then click Properties to open the "Advanced Power Management Support Properties" dialog box.**
6. **Click the "Settings" tab, and in Troubleshooting, place a check in the check box for Don't Poll Power Supply Status. Then click [OK].**
7. **In the System Properties dialog box, click [OK].**
8. **Restart Windows.**

Windows

❑ **If you are using the special driver, you can solve this problem in the "BOSS GS-10 Driver Settings" dialog box.**

→ For details, refer to the section "Something is wrong with playback; sound is interrupted or notes are missing" within the Readme_e file located in the folder in which you installed the CD-ROM.

Macintosh

❑ **Depending on the virtual memory setting or network-related settings, noise may occur.**

→ Please make the following settings before use.

- In Chooser of the Apple menu, set AppleTalk to "Inactive".
  (This setting is not changed as a result of turning off AppleTalk, as requested by OMS when sequencer software is started up. You must change the setting yourself using the "Chooser".)
- In the "Memory" Control Panel, set Virtual Memory to "Off".
- Depending on the way in which you connect to the Internet, use the GS-10 with the following settings.

  If you connect to the Internet via a LAN cable
  Use while the LAN cable is connected.

  If you connect to the Internet via the internal modem port, or are not connected to the Internet
  In the "TCP/IP" Control Panel, set "Connect via" to "PPP".

  After you have made the settings, restart your Macintosh.

* *Do not use software that accesses the network (such as a Web browser) at the same time that you are using sequencer software or audio editing software.*

Macintosh

→ Try increasing the Buffer Size in the ASIO Driver control panel.
The name of the settings dialog box will differ depending on your software.

* *If you change the buffer size, you must exit the software and then restart it.*

* *BOSS/Roland can make no guarantee of, nor provide support regarding the operation of sequencer software and audio editing software made by another manufacturer. Please contact the manufacturer of the software you are using.*

Digitally recorded sound is distorted, is at the wrong pitch, or contains noise

❑ **Is the application's sampling frequency set to 44.1 kHz?**

→ Set the application's sampling frequency to 44.1 kHz.

Playback or recording halts midway through, and then becomes impossible

❑ **Was a heavy processing load experienced while using the GS-10, such as accessing the CD-ROM drive or a network?**

→ If an operation involving a heavy processing load is performed while the GS-10 is in use, it may not operate correctly. If this occurs, stop playback/recording, and then try resuming playback/recording. If you are still unable to play back/record, exit all applications that use the GS-10, switch off the GS-10, then turn it on again.

Recording produces a silent (blank) file

❑ **Try setting the bit rate to "16 bit or higher".**

→ If you are using Windows 98 Second Edition and your recording software is set to a bit rate setting of 8 bits, a silent file may be created, effectively making recording impossible. If this occurs, set the bit rate to "16 bit or higher", and you will be able to record normally.

❑ **Is the Recording source select switch set correctly?**

❑ **In your operating system, is the audio data input destination set correctly?**

❑ **On your recording software, is the audio data input destination set correctly?**

Game background music does not play

❑ **Does the game use an audio CD for background music? (Standard driver mode)**

→ If the game uses an audio CD for background music, refer to "When playing audio CDs from the computer's internal CD-ROM drive, or using the GS-10 to play game music" (p. 145).

Sound becomes distorted or noisy when you apply an effect

→ Adjust the volume of the effects.

A loud buzz is present in the guitar signal

❑ **Does the buzz decrease when you lower the volume of your guitar?**

→ If the buzz decreases when you lower the volume of your guitar, it is possible that the pickup of your guitar is receiving noise from a computer or a display screen. Move as far away from the computer as possible. Sometimes this problem can be solved by grounding the chassis of your computer, or the grounding connector of your computer's AC power supply. You should also check whether there is a device nearby that produces a strong magnetic field, such as a television or a microwave oven. (p. 4)

Deleting the special driver

If you were unable to install the special driver according to the procedure given, the GS-10 may not be recognized correctly by the computer. In this case, use the following procedure to delete the special driver, and then follow the procedure in "Installing & Setting Up the Driver" (Windows, p. 126; Macintosh, p. 146) to install the driver once again.

Windows XP/2000 users

In order to delete (uninstall) the driver, a user with administrative privileges such as Administrator must be logged onto Windows. For details, contact the system administrator of your computer.

1. **Start Windows with all USB cables disconnected.**
   (except the keyboard and mouse)
2. **Log on to Windows as one of the following users:**
   - a user whose account type is Computer Administrator
   - the Administrator or other user with the privileges of the Administrators group

   * *For more information regarding this, consult your computer system administrator.*
3. **Double-click Uninstal.exe.**
4. **The display will indicate "This program uninstalls the BOSS GS-10 USB Driver installed," and click the "OK" button.**
5. **The display will indicate "Uninstallation completed," and click the "Yes" button. Windows will restart.**

Windows Me/98 users

1. **Start Windows with all USB cables disconnected.**
   (except the keyboard and mouse)
2. **Exit all applications before performing the uninstallation.**
3. **Double-click Uninstal.exe.**
4. **The display will indicate "This program uninstalls the BOSS GS-10 USB Driver installed," and click the "OK" button.**
5. **The display will indicate "Uninstallation completed," and click the "Yes" button. Windows will restart.**

Macintosh users

1. **Disconnect the USB cable (by which the GS-10 is connected) from your Macintosh.**
2. **From the system extensions folder, drag "USB GS-10 Driver" into the trash to delete it.**
3. **Delete GS-10 from the OMS Folder inside the System folder, or drag GS-10 Driver from the FreeMIDI Folder to the trash.**
4. **Drag the ASIO driver that you installed in "Installing the ASIO driver" (p. 154) into the trash to delete it.**
5. **Restart the Macintosh.**

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MEMO

For the U.K.

IMPORTANT: THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.

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 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.
Under no circumstances must either of the above wires be connected to the earth terminal of a three pin plug.

For the USA

DECLARATION OF CONFORMITY
Compliance Information Statement

Model Name : GS-10
Type of Equipment : Guitar Effects System with USB Audio Interface
Responsible Party : Roland Corporation U.S.
Address : 5100 S.Eastern Avenue, Los Angeles, CA 90040-2938
Telephone : (323) 890-3700

For EU Countries

Apparatus containing Lithium batteries

CAUTION
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Discard used batteries according to the manufacturer's instructions.

ADVARSEL!
Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering.
Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

VARNING
Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

ADVARSEL
Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens instruks joner.

VAROITUS
Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

For EU Countries

CE This product complies with the requirements of European Directive 89/336/EEC.

For the USA

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.

Tested To Comply With FCC Standards

FOR HOME OR OFFICE USE

Unauthorized changes or modification to this system can void the users authority to operate this equipment.
This equipment requires shielded interface cables in order to meet FCC class B Limit.

For Canada

NOTICE
This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

AVIS
Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

BOSS Corporation

03342912 '03-8-1N