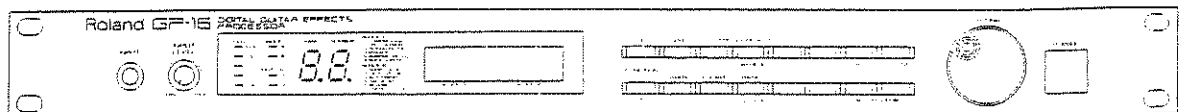


Roland

DIGITAL GUITAR EFFECTS
PROCESSOR

GP-16

OWNER'S MANUAL

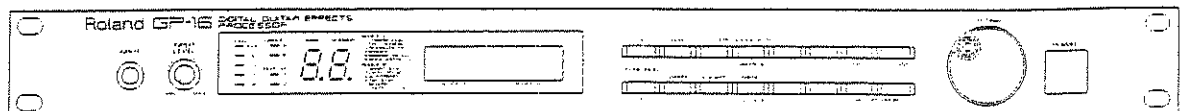


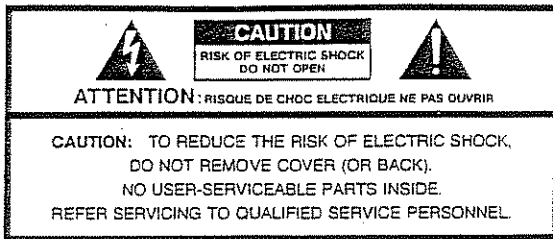
Roland

DIGITAL GUITAR EFFECTS PROCESSOR

GP-16

OWNER'S MANUAL





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



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

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

IMPORTANT SAFETY INSTRUCTIONS

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

1. Read all the instructions before using the product.
2. Do not use this product near water — for example, near a bathtub, washbowl, kitchen sink, in a wet basement, or near a swimming pool, or the like.
3. This product should be used only with a cart or stand that is recommended by the manufacturer.
4. This product, either alone or in combination with an amplifier and headphones or speakers, may be capable of producing sound levels that could cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
5. The product should be located so that its location or position does not interfere with its proper ventilation.
6. The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
7. Avoid using the product where it may be effected by dust.
8. The product should be connected to a power supply only of the type described in the operating instructions or as marked on the product.
9. The power-supply cord of the product should be unplugged from the outlet when left unused for a long period of time.
10. Do not tread on the power-supply cord.
11. Do not pull the cord but hold the plug when unplugging.
12. When setting up with any other instruments, the procedure should be followed in accordance with instruction manual.
13. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
14. The product should be serviced by qualified service personnel when:
 - A. The power-supply cord or the plug has been damaged; or
 - B. Objects have fallen, or liquid has been spilled into the product; or
 - C. The product has been exposed to rain; or
 - D. The product does not appear to operate normally or exhibits a marked change in performance; or
 - E. The product has been dropped, or the enclosure damaged.
15. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other servicing should be referred to qualified service personnel.


SAVE THESE INSTRUCTIONS

WARNING: THIS APPARATUS MUST BE EARTHED

For the U.K.

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

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

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

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

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

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

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Thank you, and congratulations on your choice of the Roland GP-16 Digital Guitar Effects Processor. The GP-16 provides total digital processing, with the equivalent of 16 separate effects units, all invaluable for guitar players. It is a multi-effects unit for which you can not only make settings for each effect individually, but can also arrange the order in which they are connected any way you please.

In order to get a good grasp of the full range of superior functions provided, and assure long reliable service, we recommend that you read this Owner's Manual in its entirety.

■ FEATURES

Ultra-high Speed Digital Processing

The GP-16 is equipped with 3 extremely high-speed DSP LSIs, newly developed for audio signal processing in the GP-16. The unit was designed with the focus on sound quality, with 24-bit internal processing. It adopts the 16-bit (64 times over-sampling) leading-edge MASH* process for the A/D section, and for D/A employs a 16-bit (4 times over-sampling) process.

Incorporates 16 Effects Units

Contained within the GP-16 are 16 digital effects units. Moreover, up to 12 effects can be used simultaneously.

Readily Changeable Connection Sequence

Not only can any effect you wish to be turned on or off, but settings for choosing the sequence in which the effects are connected can be made and stored for each patch as well.

Two Amplifier Systems Can Be Connected

Since 2 guitar amplifier systems can be connected to the GP-16, you can store in memory, along with other settings, information on which guitar amplifier is to be used. Thus, even the guitar amps can be included in your sound creations.

Mixer Connections

For output, in addition to unbalanced type output jacks, it is also equipped with balanced type (XLR) connectors. Thus, Line Input to a mixer is possible when used along with a guitar amp simulation circuit.

Pedal Control Available

Through connection of a foot controller and an expression pedal, you obtain pedal control over any of all parameters.

MIDI Control

Since the unit is equipped with MIDI connectors, external MIDI devices can be used to control the GP-16, or the GP-16 can be used for control over an external device. In addition, the GP-16's sound data can be saved to another GP-16, or other device such as a sequencer.

* MASH is a trademark which has been applied for by NTT.

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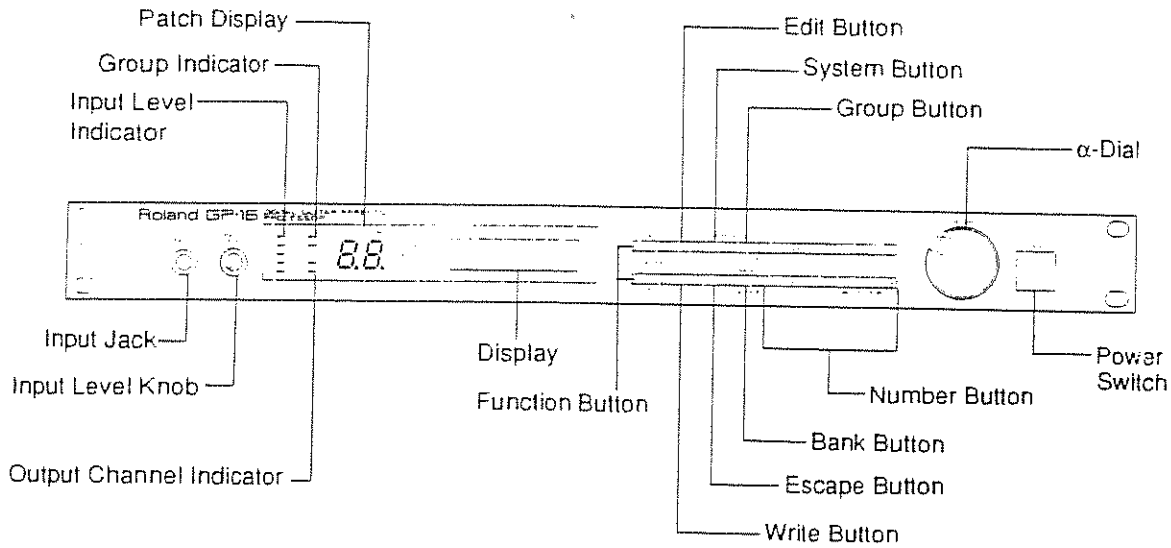
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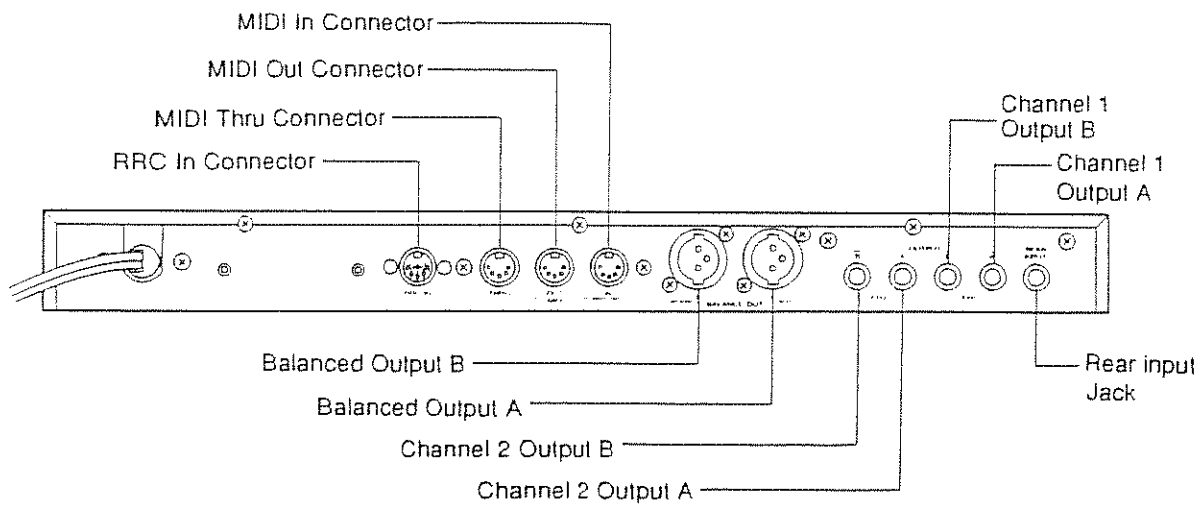
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■ PANEL DESCRIPTIONS

[Front Panel]



[Rear Panel]



■ IMPORTANT NOTES

In addition to the items listed under safety Precautions inside front cover, we request that you please read and adhere to the following.

[Concerning the power supply]

- Whenever you make any connections with other devices, always turn off the power to all equipment first. This will help in preventing malfunction, and damage to speakers.
- Do not force the unit to share the same power outlet as one used for distortion producing devices (such as motors, variable lighting devices). Be sure to use a separate power outlet.

[Concerning placement]

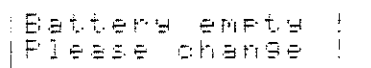
- Placing the unit near power amplifiers or other equipment containing large transformers may induce hum.
- Should the unit be operated nearby television or radio receivers, TV pictures may show signs of interference, and static might be heard on radios. In such cases, move the unit out of proximity with such devices.

[Maintenance]

- For everyday cleaning, wipe the unit with a soft dry cloth, or one that is dampened slightly. To remove dirt that is more stubborn, wipe using a mild, neutral detergent. Afterwards, make sure to wipe thoroughly with a soft cloth.
- Never apply benzene, thinners, alcohol or any like agents, to avoid the risk of discoloration and deformation.

[Concerning memory backup]

- Within the unit is contained a battery which serves in maintaining the contents of memory while the main power is off. The normal life of this battery is 3 years or more, but it is strongly recommended that you change it every 3 years as a rule. When it is time to change the battery, contact a Roland Service Station.
- The first time you need to change the battery could occur before 3 years have passed.
- The unit's battery is needed not only for ordinary operation, but also serves in maintaining the contents of memory while power is off. When the battery gets low, you risk losing the data you have in memory. To be safe, change the battery ahead of time.
- When the battery gets weak the following will appear in the display. By this time, it is possible that the contents of memory have already been lost.



```
Battery empty !  
Please change !
```

- Please be aware that the contents of memory may at times be lost; when sent for repairs or when by some chance a malfunction has occurred. Important data should be saved on a floppy disc or the like using a MIDI sequencer or personal computers, or written down on paper. 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 be impossible to restore the data.

[Other Precautions]

- Protect the unit from strong impact.
- Never apply strong pressure to the display, or strike it in any way.
- A certain small amount of heat will be radiated from the unit, and thus should not be considered abnormal.
- Before using the unit in a foreign country, check first with your local Roland Service Station.

■ How To Use This Manual

This manual is organized as follows. Each chapter should be referred to as necessary.

Chapter One Auditioning the Sounds

Here you learn how to connect a guitar amplifier and listen to the preset sounds.

Chapter Two Creating New Effects Sounds

Simple procedures allow effects on the GP-16 to be set in any way you like, and then stored in memory. The procedures are explained here.

Chapter Three How the Effects Function

Sounds are created as a result of the many possible values that can be set for each effect unit. Here explained is the manner in which these values play a role in producing effects.

Chapter Four Employing MIDI in Performance

Through employing MIDI with the GP-16, data transfer with other devices can be carried out. This chapter provides an explanation of MIDI and the functions available with the GP-16.

Chapter Five System Settings

This chapter explains the settings affecting the GP-16 as a whole, such as those for MIDI, and how they are made.

Chapter Six Reference

Contained here is an explanation of what to do when the GP-16 doesn't operate quite as expected, along with other useful information that can be referred to.

Chapter One Auditioning the Sounds

To begin with, you will probably wish to connect the GP-16 to a guitar amplifier and try out its preset sounds.

1 Making Connections

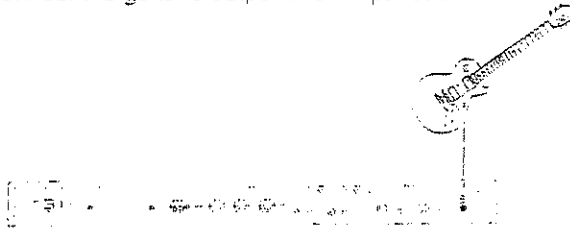
Concerning connection of guitar and guitar amplifier.

The guitar and guitar amplifier are connected as follows, allowing sound to be produced.

Always have the volume turned down on any amps, and power turned off, whenever inserting or pulling out any plugs. Damage to speakers or other malfunction can result if connections are made while power is left on.

● Connecting the guitar

Connect the guitar's output to an Input Jack.



- You may have to adjust the input level depending on the type of guitar you connect. For information on making such adjustments see "[3] Adjustment of Input Level" (P. 12).
- Input jacks used for connecting a guitar are provided on the unit's front and rear panels. However, the jack on the front panel has priority. Thus, if a guitar is connected to the jack on the front panel, the jack on the rear panel becomes inoperative.

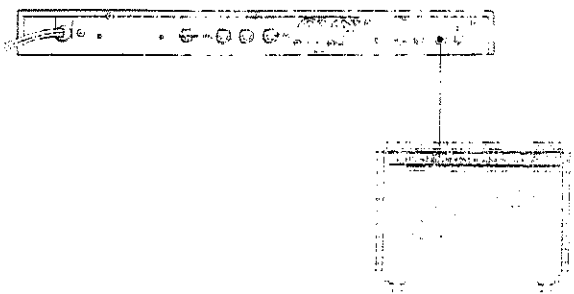
● Connecting with the amplifier

The (guitar) amplifier is connected to the GP-16's outputs.

The way connections should be made with the GP-16 will vary depending on the number of amplifiers being used, and the particular application. Select the setup that suits your purpose.

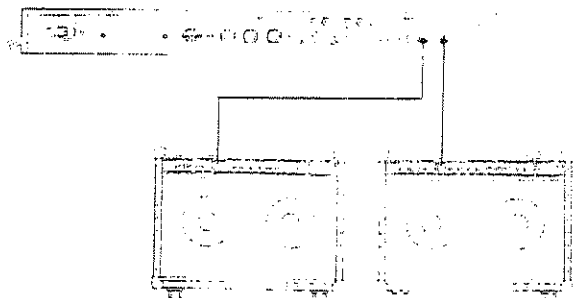
- When being used in monaural, connect to the Output A jacks.
- When being used in stereo, connect both of the guitar amps to the same channel.
- If a channel has been specified using "Output Select", the amp must be connected to the channel that has been specified, otherwise no sound will be produced. For details, refer to "c. Output Select" (P. 22).

• With 1 guitar amp

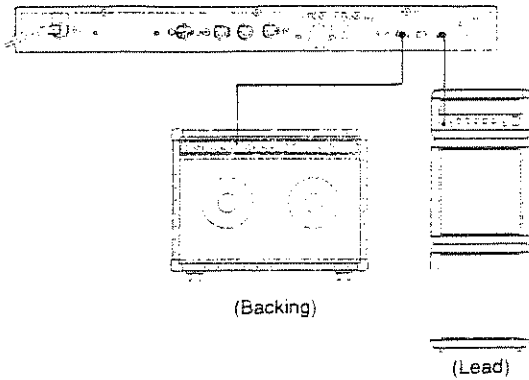


• With 2 guitar amps

- ◇ When outputting the guitar sounds in stereo.



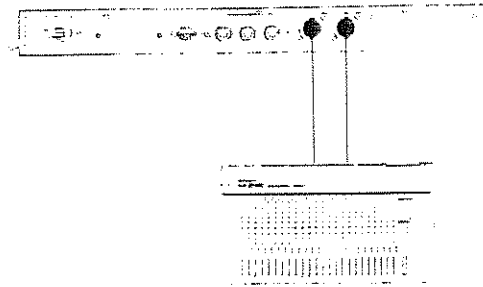
- ◇ When switching between guitar amps depending on settings for effects (for example, to have separate paths for lead and backing).



- The guitar sound will be output in monaural.

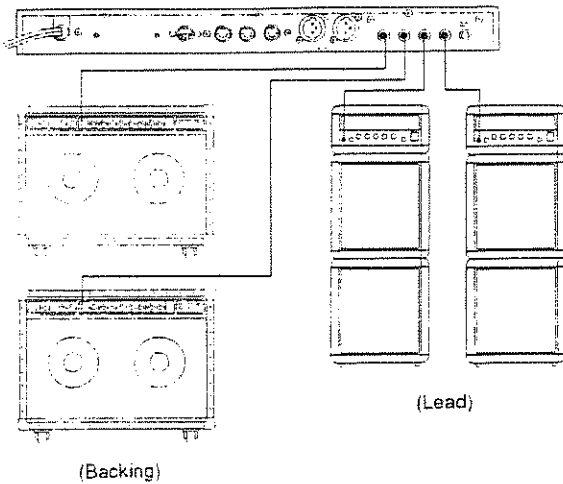
- **When outputting directly to a mixer, etc**

- ◇ This setup is used when the GP-16 sounds are to be routed directly to a mixer or power amplifier.



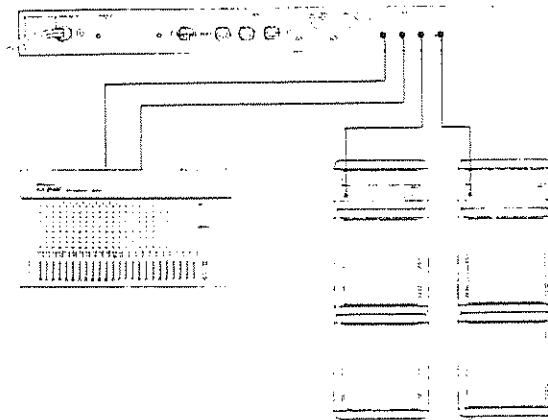
- **With 4 guitar amps**

- ◇ When switching between guitar amps depending on settings for effects, and have stereo output.



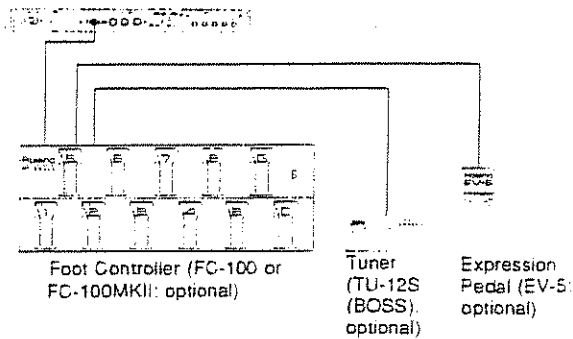
<< Example application >>

The following setup illustrates one example which provides output to a guitar amp of the lead distorted sounds, while the backing portions are routed to a mixer.



● Connections with other equipment

A variety of other MIDI devices or foot controllers (FC-100 or FC-100MKII; optional) can be connected to the GP-16. Also, in place of a foot controller, an expression pedal (EV-5; optional) or tuner (such as optional BOSS TU-12S) can be connected as well.



Before using any foot controller that you have connected, make sure to set the mode switch on the controller's rear panel to the appropriate setting, as follows:

FC-100	→	MODE I
FC-100 MKII	→	MODE I

- When using an FC-100 MKII, set the controller to the "RRC Foot Pedal Mode". (Refer to the foot controller's manual for information on how this is done.)
- Make sure the RRC cable locks in place when you connect it.
- Do not connect any devices other than those specified to the GP-16's RRC IN connector.
- The expression pedal you use must only be either the Roland "EV-5" or the BOSS "EV-10". Use of any other pedal may at times result in abnormal operations.
- The minimum volume for an expression pedal connected to the foot controller's "EXP(1)" needs to be set at "MIN".
- Except for the "EXP 2" function, which is not available, the FC-100 foot controller can be used in the same way as the FC-100MKII. For details, refer to "[6] Concerning Foot Controllers" (P.15).

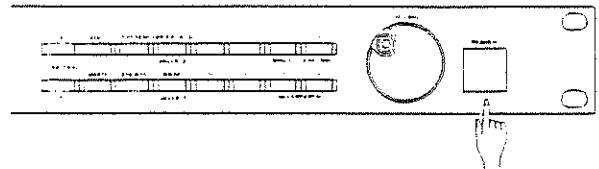
2 Powering Up and Getting Ready

Turning the GP-16 on for performance

Power is turned on and the unit is readied for play as follows:

After confirming that all connections with external devices have been made properly, turn on the GP-16's power switch.

- The volume on the amplifier should be raised only after all equipment has been turned on.



Upon powering up, this is displayed:

```
Guitar Processor
Super GP Ver. *.*
```

And after a few seconds, the unit is ready for operation:

```
Sparkling 1 AMP
A-****56B-12*45*
```

Now, if you play the guitar you can hear the effected sound.

- For explanation of what is shown in the display, see "[5] Meaning of What is Shown in the Display" (P.14).
- The GP-16, due to its circuitry protection feature, requires a moment after being turned on before it is ready for operation.
- Depending on the angle at which it is viewed, the display may at times be less easy to read. To make it clearer to read, the display's contrast should be adjusted. Refer to "12. LCD Contrast" (P.53).

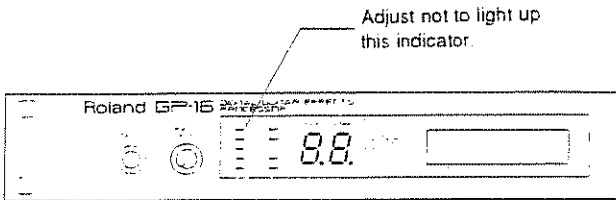
3 Adjustment of Input Level

Matching the GP-16 to the guitar

The input signal will vary depending on the type of guitar connected. Thus, it is necessary to adjust the input level for each guitar used.

[Step 1] Input to the GP-16 a signal equivalent to what would be the maximum volume used in performance.

[Step 2] While watching the INPUT LEVEL INDICATOR, adjust the INPUT LEVEL knob until you get the highest level possible without causing CLIP to light up.

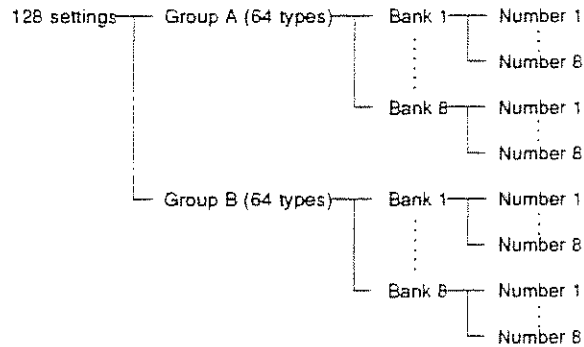


Should CLIP be lit up, accurate conversion of the guitar's signals to digital signals becomes difficult. Thus, you will not fully obtain the sound quality capable with the GP-16.

4 Patch Selection

Trying out a variety of sounds

On the GP-16, up to a total of 128 types of patches, which contain the information for different combinations of effects and their settings, can be stored in memory. These 128 locations for programmed settings are divided into two Groups, A and B, each having 64. Then, each Group is broken down into 8 Banks (1 through 8). Further, within each Bank there are 8 types of programs, which are numbered from 1 to 8.



In other words, on the GP-16 the 128 possible locations for storing settings are organized and identified in terms of their Group/Bank/Number, and each one is referred to as a "Patch".

During performance, you can call up precisely the settings (patch) you need from among those you have stored.

Doing this is referred to as Patch Selection, and it is possible only when the unit is in a state called the Play mode.

- For explanation of what is shown in the display, see [5] "Meaning of What is Shown in the Display" (P.14).
- The setting automatically made available each time power is turned on is: Group: A, Bank: 1, Number: 1.
- For information on the correspondence between Patches and Program Change Numbers, refer to the "Patch/Program Change Number Correspondence Chart" (P.56).

Selection of patches can be made from the GP-16 panel, or alternately, using a foot controller (optional).

c. Selection of a Number

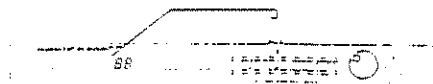
Selection of the number needed is made by pressing one of the Number buttons, from [1] to [8]. The number then appears at the Number position in the Patch Display.

1. Selecting patches from the GP-16 panel

Operating the GP-16 panel to change patches

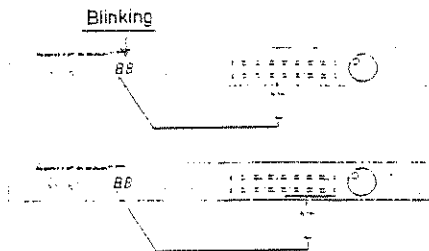
a. Selection of the Group

Each press of [GROUP A/B] toggles between selection of Group A and Group B. The currently selected group is indicated by the "Group Indicator".

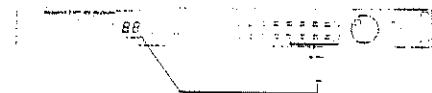


b. Selection of the Bank

Press [BANK], and the Bank digit in the Patch Display will start blinking. While in this state, pressing one of the Number buttons, from [1] to [8], selects the corresponding bank. The number then appears at the Bank position in the Patch Display.



- Selection of a bank can be cancelled by pressing the bank button while the bank digit in the Patch Display is still blinking.



2. Selection using a foot controller

Using a foot controller to change patches

A greater measure of convenience during performances is gained through connecting a foot controller (FC-100 or FC-100 MKII; optional) to the GP-16, thus allowing you to change patches by pressing the pedal.

Patch selection is made in basically the same manner as that for selection from the panel. For details, refer to the owner's manual supplied with the foot controller.

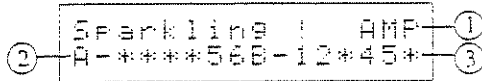
- For information on the functions that can be employed when a foot controller is connected, see "[6] Concerning Foot Controllers" (P.15).

5

Meaning of What is Shown in the Display

What the characters shown indicate

When in the Play mode, the content of the display is as follows.



(Example: Group: A, Bank: 1, Number: 1)

① Name

Each patch can have a name containing up to 16 letters, and should allow you to tell what type of sound it is at a glance.

② Profile of settings for Block A.

③ Profile of settings for Block B.

On the GP-16 effects are divided into two blocks as follows:

Block A Contains effects that alter the guitar's original sound itself.

Block B Contains the type of effects that add on effected sounds to the original sound.

In addition, each effect within the blocks (A/B) has its own number. In the display you can see which effects, and the order in which they are connected, since they are indicated by their numbers.

- When any effect is currently "On", its corresponding number is shown in the display.
- When an effect is "Off", instead of its number, you will see the "*" symbol shown in the display.
- The order in which effects are connected is represented by the order shown in the display, moving from left to right.

The blocks and numbers are set as follows:

Block A

- 1 : Compressor
- 2 : Distortion/Overdrive
- 3 : Picking Filter
- 4 : Step Phaser
- 5 : Parametric Equalizer
- 6 : Noise Suppressor

Block B

- 1 : Short Delay
- 2 : Chorus/Flanger/Pitch Shifter/Space-D
- 3 : Auto Panpot
- 4 : Tap Delay
- 5 : Reverb
- 6 : Lineout Filter

Taking for example the display above, the effects can be seen to be connected as follows:

Input → Parametric Equalizer → Noise Suppressor → Short Delay → Chorus/Flanger/Pitch Shifter/Space-D → Tap Delay → Reverb → Output

- With "Block A-2", selection of one, either Distortion or Overdrive needs to be made.
- With "Block B-2", you have a choice of one from among the four effects available: Chorus/Flanger/Pitch Shifter/Space-D.
- For detailed explanation of the type of sound obtained with each effect, refer to "Chapter Three How The Effects Function" (P.25).

6

Concerning Foot Controllers

Explains the function of foot controller

They function as explained in the following.

1. Differences between FC-100 and FC-100 MKII

With the GP-16, either the FC-100 or FC-100 MKII can be connected and used, but there are functional differences depending on the model. Refer to the chart below for such differences.

Function	FC-100	FC-100MKII
When selecting a patch from the GP-16 panel.	No change in the FC-100 display nevertheless the GP-16 display shows newly selected patch.	Both displays show the same patch (newly selected one).
Operating by the Expression pedal.	(One pedal available: EXP) Changes the values of a specified parameter of each patch.	(Two pedals available: EXP1, EXP2) EXP1: Changes the values of a specified parameter of each patch. EXP2: Changes Master Volume exclusively.

2. Settings related to the foot controller

The required settings vary depending on the type of controller connected. Settings should be made as shown below when connecting to the GP-16.

<< When connecting the FC-100 >>

Mode Selection Switch : MODE I

<< When connecting the FC-100MKII >>

Mode : RRC Foot Pedal Mode

Mode Selection Switch : MODE I

- For information on how the mode is set, refer to the foot controller's owner's manual.

3. Foot controller functions

Through connecting an FC-100 or FC-100MKII foot controller to the GP-16, not only will you be able to change patches using your foot, but you also can have control over a variety of other functions convenient during actual performance.

a. Use of the Control pedal

Ordinarily it is used as a mute pedal.

When the foot controller's Control pedal is depressed, and while the control indicator is lit, no signals are output from either the output (phone) jacks, or balanced (XLR) connectors on the GP-16.

When not playing, you can use this pedal to prevent noise when changing guitars, or to silence mistakes. Either press the Control pedal again when tuning using the tuner-use Signal Out, or use the pedal for selecting a patch; it will then be released.

- Through a change in settings, it can also be set to BY-PASS. For information on how to make setting changes, see "10. Setting the Function of the Control Pedal" (P.53).

b. Use of the expression pedal

Through connection of an expression pedal (EV-5; optional), the values for a specified parameter can be changed during performance by pressing the pedal connected to EXP (1).

First, for each patch, specify the parameter which you wish to control using the pedal. Then set the range of change by setting the maximum value (value when pedal is fully depressed) and the minimum value (when pedal is released). The parameters which are available for use in this way are all those included in the effect on state, and master volume.

- For information on how to set parameters related to the expression pedal, refer to "b. Expression pedal" (P.20).

When a pedal is connected to EXP 2 on the FC-100 MKII, this pedal will always control "Master Volume". The range of change obtained with this pedal is as follows:

With the pedal fully depressed: The value set for Master Volume (ordinary level).

When the pedal is released: The level set for Minimum Volume on the pedal itself.



c. Tuner-use signal out

Since the guitar signal is output at all times from the foot controller's tuner-use Signal Out jack, tuning can be carried out any time you like.

- Do not connect anything else, such as an amp, to the signal output since it is meant to be used solely by a tuner.

d. Output of expression messages over MIDI

Using the MIDI channel and Control number set on the GP-16, expression messages can be sent out as MIDI data.

- For details, see "4. Output of Control Change Message" (P.48).

Chapter Two Creating New Effects Sounds

The effects available with the GP-16 can be set easily in any way desired, and the settings then can be stored in memory.

The following explains the procedures you need to know Incorporated within the GP-16 are the equivalent of 16 individual effects units. The timbre of each patch is altered as a result of the three factors shown below.

- Order in which the effects are connected.
- Settings for whether effects are on or off.
- Settings for the effects which are on.

● Order in which the effects are connected

A guitar signal, when passed through the same effects, and with settings for each being equal, will still be different if the sequence in which the effects are connected is different. The GP-16 provides a Block A and Block B, and within each block settings determining the order of connection can be made.

● Setting for whether effects are On or Off

Select the effects you wish to use. Up to a maximum of 12 can be used at the same time.

● Settings for the effects that are on

Each effect has several parameters which control the timbre. By setting the numerical values needed to satisfy these parameters, the timbre is determined.

- These parameters can be likened to the knobs on ordinary pedal effects units.

The process of making the settings above is called "Changing the contents of a patch".

Keep in mind that your efforts in making settings for the effects will be wasted if you have not performed the "Write Procedure", and you perform "7. Escaping" (P.23) and return to the "Play mode", or turn power off, since the settings will not be in memory. If you wish to save settings, always carry out the write procedure and store them in the GP-16's memory once you are completed.

- For information on how to store settings, see "[2] The Write Procedure" (P.23).

1 Changing the contents of a patch

Changing the settings for the effects

Perform the following steps to select effects and make the necessary adjustments to them.

[Step 1] From the Play mode (state where patches can be selected), select the patch you wish to change. For information on how this is done, see "[4] Patch Selection" (P.12).

- After changes in parameter settings have been completed, you have the option of selecting anew the patch where it is to be stored, so any patch can be altered without affecting the original. Rapid, more efficient creation of new patches can be accomplished by first choosing a patch already similar in timbre (settings) to what you have in mind, and then editing that.

[Step 2] Press [EDIT] to enter the Edit mode (state where patch contents can be altered).

- During editing, if you perform "7. Escaping" (P.23), the setting changes made will not take effect, and you are returned to the Play mode.
- While in this mode, you can make a copy of the patch by pressing [WRITE] before any changes have been made. For details, see "[3] Copying" (P.24).

[Step 3] From here on the procedures are carried out by first using [FUNCTION] to call up the necessary parameters so they appear in the display.

< Here the settings for the parameters are explained in their logical order. You can, however, work on making settings in any order you desire. >

1. Connection order for the effects *Changing the sequence in which effects are connected*

The following allows you to change the sequence in which the effects are used in each Block (A/B).

2

The procedure is the same for both Blocks A and B.

[Step 1] From the Edit mode, using **FUNCTION** call up the parameter (have it appear in the display) shown below.

The display shows the connection sequence for the effects, for A then B blocks, with the signal flowing in order from left to right.

<< When setting Block A >>

```
SEQUENCE BLOCK-A
#1 2 3 4 5 [6]
```

<< When setting Block B >>

```
SEQUENCE BLOCK-B
#1 2 3 4 5 [6]
```

[Step 2] Using either the **α-Dial** or **VALUE** move the symbol to the position where you want to insert something.

```
SEQUENCE BLOCK-A
1 2 3#4 5 [6]
```

[Step 3] Press the Number button, **1** - **5**, that corresponds to the number of the effect you wish to insert.

```
SEQUENCE BLOCK-A
1 2 3#5 4 [6]
```

(Example: When **5** is pressed at the position moved to with the symbol in [Step 2].)

Repeat [Steps 2 and 3] until you have the connection sequence you want.

* "Block A-6: Noise Suppressor" and "Block B-6: Lineout Filter" cannot be moved.

2. Setting for Effect On/Off

Selecting effects to be used

The following setting determines whether or not an effect will be active (Effect On/Off).

* Both blocks, A and B, are set in the same manner.

[Step 1] From the Edit mode, using **FUNCTION** call up the following parameter (Have it appear in the display).

Effects, once in the Effect On state, will have their corresponding number appear in the display. The "*" symbol will appear at that position in the sequence for effects that are "Off".

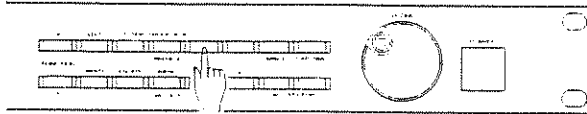
<< When setting Block A >>

```
BLOCK-A ON/OFF
* * * 5 * 6
```

<< When setting Block B >>

```
BLOCK-B ON/OFF
1 2 * 4 5 *
```

[Step 2] Select the effects you want to use by pressing the Number buttons **1** - **6** that correspond to them.



Once an effect is "On", its number appears in the display at its position in the sequence.

```
BLOCK-A ON/OFF
1 * * 5 4 6
```

Repeat [Step 2] until you arrive at the configuration you desire.

- The position within the sequence occupied by effects which are "Off" has no bearing on the resulting sound. For example, the following two configurations result in the same sound.

```
BLOCK-A ON/OFF
1 2 * 5 * 6
```

```
BLOCK-A ON/OFF
1 * 2 * 5 6
```

3. Selecting among the variations *Is it Distortion or Overdrive?*

Whenever "Block A-2" or "Block B-2" have been turned on, you need to make selection of the type of effect that will be used.

<< When Block A-2 has been turned on >>

- a. Distortion
- b. Overdrive

Select which of the above two effects will be used.

<< When Block B-2 has been turned on >>

- a. Chorus
- b. Flanger
- c. Pitch Shifter
- d. Space-D

Select which of the above four effects will be used.

- This parameter is skipped when the effect is left off.
- The procedure is the same for both "Block A-2" and "Block B-2".

[Step 1] From the Edit mode, using **[FUNCTION]** call up the parameter (have it appear in the display) shown below.

<< When setting Block A-2 >>

```
BLOCK-A No. 2 SET
a. DISTORTION
```

(Example: To select Group A, Bank: 4, Number: 2)

<< When setting Block B-2 >>

```
BLOCK-B No. 2 SET
a. CHORUS
```

(Example: To select Group A, Bank: 4, Number: 2)

[Step 2] The effect which is currently active will appear in the display. If one of its variations is desired, make selection of the effect using the **[α-Dial]** or **[VALUE]**.

4. Checking the sequence *The order of the sequence can be checked*

Your completed configuration, including settings for the order, whether effects are on or off, and the variations, can be viewed for confirmation.

[Step 1] From the Edit mode, using **[FUNCTION]** call up the parameter (have it appear in the display) shown below.

```
SEQUENCE ORDER
[INPUT] → PARAMETR
```

[Step 2] Using the **[α-Dial]** or **[VALUE]**, the names of all the effects that are connected will appear in order in the display, starting from the input jacks and going to the output jacks.

5. Settings for effects which are on *Changing settings for each effect*

With each effect there are several parameters which determine the way it creatively alters a sound. On the GP-16, you design precisely the effected sound you wish by one at a time calling up the parameter you need, and making changes in its settings.

[Step 1] From the Edit mode, using **[FUNCTION]** call up the parameter (it should appear in the display) you wish to make setting for.

- For detailed explanation of each parameter, refer to "Chapter Three How The Effect Function" (P.25).
- The parameters for only those effects which are "On" called be called up.

[Step 2] While playing the guitar, use either the α -Dial or **VALUE** to make changes in the parameter until you get the sound you like.

Repeat [Steps 1 and 2] until you have created the effected sound you have in mind.

6. The other parameters stored within each patch

Changing settings other than those for effects

Beyond the various settings for each effect, you also can make setting for the parameters below on an individual patch basis.

a. Master Volume setting

Determines the output level.

b. Expression Pedal

A variety of settings concerning an expression pedal can be made.

c. Output Select

Choosing a guitar amplifier.

d. Name Editing

Provides for attaching names to effected sounds.

a. Master Volume setting

Determines the output level

The level of what is output from the output jacks is set as follows:

[Step 1] From the Edit mode, using **FUNCTION** call up the parameter (have it appear in the display) shown below.

```
MASTER VOLUME
LEVEL=
```

VALUE: 0-100

[Step 2] Use either the α -Dial or **VALUE** to make changes in the value.

When all effects are "off", to set the value "70", the level of output has been set to be equal to the input level.

b. Expression Pedal

A variety of settings concerning an expression pedal can be made

Here set is the parameter which will be changed as a result of the action of the expression pedal, or internal LFO; and the amount of such change.

You will need to have an optionally available foot controller and expression pedal if you intend on using pedals to make changes in values.

Set Minimum Volume on the expression pedal connected to EXP (1) to its minimum (MIN).

[Step 1] From the Edit mode, using **FUNCTION** call up the parameter (have it appear in the display) shown below.

```
EXP. ASSIGN (EV-5)
EXPRESSION=OFF
```

[Step 2] Using the α -Dial or **VALUE**, specify the parameter you wish to have control over. The parameters which can be specified are all those included in the effects that are active, and Master Volume.

For any patches that you do not wish to be changed as a result of the action of the expression pedal or internal LFO, set them as shown above.

If in Step 2 setting is made to "OFF", the following parameters related to expression pedals will be skipped.

With a certain parameter, it is possible that some noise or no effected sounds may be produced when they are changed, this is normal and does not indicate a malfunction.

[Step 3] Using **FUNCTION** call up the parameter (have it appear in the display) shown below.

```
EXP. DEVICE
DEVICE=
```

VALUE: PEDAL/LFO

[Step 4] Make the setting for "PEDAL" or "LFO" using the α -Dial or **VALUE**.

PEDAL : To make value changes using the expression pedal.

LFO : To make value changes using the GP-16's internal LFO.

[Step 5] If "LFO" has been specified in Step 4, setting for its Rate is made. As the value is increased, the rate becomes faster. Using [FUNCTION] call up the following parameter, then using the α -Dial or [VALUE] make changes in the setting.

* This is skipped if "PEDAL" has been chosen in Step 4.

```
EXP. LFO RATE
LFO RATE =
```

VALUE: 0-100

[Step 6] The breadth of change that can be obtained using the expression pedal or internal LFO is determined by making settings for maximum and minimum values.

To set, use [FUNCTION] to call up the following parameter, then using the α -Dial or [VALUE] make the settings.

* The allowable range for the settings is the same as the range of the particular parameter.

<< When setting maximum value >>

(Pedal action: fully depressed)

```
EXP. MAX LEVEL
LEVEL =
```

<< When setting minimum value >>

(Pedal action: fully released)

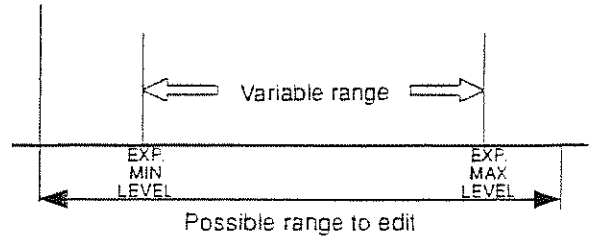
```
EXP. MIN LEVEL
LEVEL =
```

* By setting a higher value for "MIN LEVEL" than that for "MAX LEVEL", you can have parameter values decrease when the pedal is depressed.

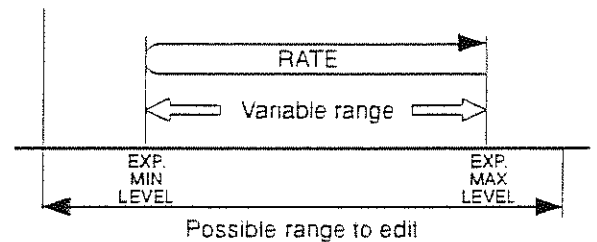
< Reference >

The breadth of change available for the parameters related to expression pedals is as follows:

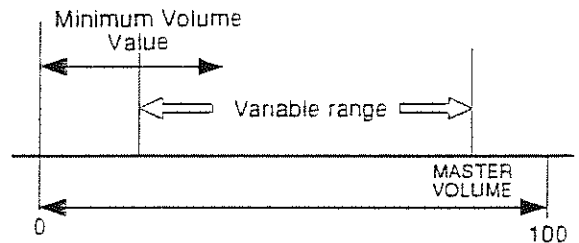
○ When set to "PEDAL" in [Step 4] the change with the pedal connected to EXP (1) is



○ When set to "LFO" in [Step 4] the change is:



○ The change for a pedal connected to EXP2 on the FC-100 MKII is:

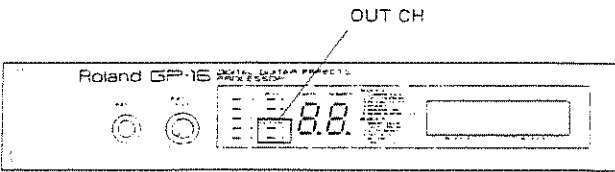


2

c. Output Select
Choosing a guitar amplifier

For each patch, setting can be made for the channel on which the effect sounds will be output. By means of the channel that is set, you can change guitar amplifiers. The set channel will be indicated by the Output Channel Indicators.

* The system provides for cancellation of "Output Select", stored with respect to each patch. Regarding this setting, refer to "11. Cancellation Output Select" (* P.53).



[Step 1] From the Edit mode, using [FUNCTION], call up the parameter shown below.

```
OUTPUT SELECT
CHANNEL= CH 1
```

VALUE: 1/2/1&2

[Step 2] Set for the desired channel using the [α-Dial] or [VALUE].

* Output from the Balanced (XLR) connectors takes place regardless of any channel settings.

[NOTE] A guitar amplifier must be connected to the specified channel for sound to be produced.

d. Name Editing
Provides for attaching names to effected sounds

You can give each patch a name using up to 16 letters. In the Play mode (state where patches can be selected), the name appears on the upper line in the display.

[Step 1] From the Edit mode, using [FUNCTION] call up the parameter (have it appear in the display) shown below.

```
NAME EDIT
GUITAR PROCESSOR
```

[Step 2] Using either [◀(7)] or [▶(8)] move the cursor (underline) to the letter to be changed.

```
NAME EDIT
GUITAR PROCESSOR
```

[Step 3] Using the [α-Dial] or [VALUE], select the desired letters.

```
NAME EDIT
GUITAR SOUND
```

* Pressing [CAP/SML (4)] allows you to shift between capitals or small for the letter at the cursor position.

* Press [SPACE (3)] to overwrite a space at the cursor position.

Repeat [Steps 2 and 3] until you have entered the desired name.

The following characters are available for use on the GP-16:

```
A B C D E F G H I J K L M N
O P Q R S T U V W X Y Z 0 1
2 3 4 5 6 7 8 9 & # ! ? . ,
: ; ' " * + - / < = > _ a b
c d e f g h i j k l m n o p
q r s t u v w x y z
```


7. Escaping

This operation lets you return to the Play mode from the Edit mode, or the System mode (cf. "Chapter Five System settings" (P.47) without storing your setting data in memory.

[Step 1] (At the Edit mode or the System mode,) Press **ESCAPE**.

<At the Edit mode>
The display shows as follows:

```
Escape ? (Yes/No)
Y+ESCAPE N+EDIT
```

<At the System mode>
The display shows as follows:

```
Escape ? (Yes/No)
Y+ESCAPE N+SYS
```

[Step 2] Press **ESCAPE** again, and you will return to the Play mode.

- In case you wish to continue editing (to be back again to the Edit mode or the System mode), press **EDIT** or **SYSTEM**.

2 The Write Procedure

Storing your settings in memory

Any changes made in the contents of a patch are only temporary; all settings will revert to what was previously stored whenever power is turned off, or when you perform "7. Escaping" (P.23).

If you wish to store (save) the settings you have made in memory, carry out the following procedure:

[Step 1] From the Edit mode, press **WRITE**.

```
WRITE PATCH SET
GP-A BK-1 NB-1
```

Indicates the patch to be stored.

- Should you wish to cancel the Write procedure, press **ESCAPE** and you will be returned to the Edit mode. In this case, the contents of the edited patch will not be lost.

[Step 2] Select the destination patch with **GROUP A/B**, Bank **1-8**, and Number **1-8**.

- For information on patch selection, see "4 Patch Selection" (P.12).
- When you are storing it to the same patch, this step is not necessary.

```
WRITE PATCH SET
GP-A BK-8 NB-8
```

(Example: To write
Group A, Bank: 8, Number: 8)

[Step 3] Press **WRITE**.

```
Sure ? (Yes/No)
Y+WRITE N+ESCAPE
```

[Step 4] Press **WRITE** to store in memory. If you decide to cancel the Write, press **ESCAPE** and you are returned to where you were in [Step 2].

```
WRITING.....
GP-A BK-8 NB-8
```

2

After the message shown above has appeared in the display, you will be returned to the ordinary status (Play mode).

- Once new settings have been stored, all settings previously stored for that patch will be erased.

< Reference >

What is stored in a patch consists of the following:

- Sequence of connection for effects.
- On/Off settings for effects.
- Variation settings.
- Values set for effects' parameters.
- Master volume.
- Settings related to expression pedals (internal LFO).
- Settings for output channel.
- Name changes.

3 Copying

The settings in one patch can be copied to another

What has been stored for one patch can be copied into another patch by carrying out the following steps.

[Step 1] Select the patch you wish to copy. (From the Play mode.)

[Step 2] Press **[EDIT]** to get into the Edit mode.

[Step 3] Without making any changes in the patch's contents, press **[WRITE]**, and select the patch becoming the destination for the copy using **[GROUP A/B]**, Bank **[1-8]**, and Number **[1-8]**.

- For information on patch selection, see "4 Patch Selection" (P.12).

```
WRITE PATCH SET
GP-A BK-8 NB-8
```

(Example: To write
Group A, Bank: 8, Number: 8)

[Step 4] Press **[WRITE]**.

```
Sure? (Yes/No)
Y+WRITE N+ESCAPE
```

[Step 5] Press **[WRITE]** to store in memory. If you decide to cancel, press **[ESCAPE]** and you are returned to the Edit mode.

```
WRITING.....
GP-A BK-8 NB-8
```

After the message shown above has appeared in the display, you will be returned to the ordinary status (Play mode).

- Once the newly copied settings have been stored, all settings previously stored for that patch will be erased.

Chapter Three How the Effects Function

On the GP-16, sounds are created as a result of the values that are set for each effect unit. Here explained is the manner in which these parameters function in producing effects.

** In this chapter, the sound input to an effect unit is referred to as the "direct sound", whereas the sound which has been altered by, and is output from the effect unit is referred to as the "effected sound."*

<A-1> COMPRESSOR

While suppressing high level input, it increases the gain for weaker input, thus having an averaging effect on volume. It is a digital compressor which does not distort the original sound, and provides long sustained effects.

• TONE

Setting used to adjust the tone of the effected sound.

"+" = Boosts (increases) the amplitude of the upper sound range.

"±0" = The tone is unchanging and flat.

"-" = Cuts (attenuates) the amplitude of the upper sound range.

```
COMPRESSOR  
TONE =
```

VALUE: -50→+50

• ATTACK

Setting which determines the strength of the attack at the moment of picking (when string is played). With higher values, the attack for each and every note becomes more noticeable, thus a sound that is more clear-cut is produced.

```
COMPRESSOR  
ATTACK =
```

VALUE: 0-100

• SUSTAIN

While increasing the gain for weaker input, determines the range (time) over which amplitude will remain steady. As higher values are set, the sustain becomes longer. With the value set low, it can also be used to function in a manner similar to a limiter, since it then serves mainly in suppressing higher levels of input.

```
COMPRESSOR  
SUSTAIN =
```

VALUE: 0-100

• LEVEL

Sets the amplitude for the time the effect is applied. Should be set so there is no difference in amplitude when an effect is turned on and off. The higher the value is set, the more amplitude increases.

```
COMPRESSOR  
LEVEL =
```

VALUE: 0-100

<A-2a> DISTORTION

Changes the timbre by distorting the guitar sounds, and increasing the harmonic content. It is a wide-ranging digital distortion effect, capable of producing many kinds of distorted sounds, from soft to hard, suitable for most any type of music.

• TONE

Setting used to adjust the tone of the effected sound.
"+" = Boosts (increases) the amplitude of the upper sound range.
"±0" = The tone is unchanging and flat.
"-" = Cuts (attenuates) the amplitude of the upper sound range.

DISTORTION
TONE =

VALUE: -50→+50

• DISTORTION

Sets the depth of the distortion (manner distortion takes place), and at the same time it controls sustain. As the value is set higher, the distortion becomes more pronounced, and it is sustained longer.

DISTORTION
DISTORTION =

VALUE: 0-100

• LEVEL

Sets the amplitude for the time the effect is applied. The higher the value is set, the more amplitude increases. Should be set so there is no difference in amplitude when an effect is turned on and off.

DISTORTION
LEVEL =

VALUE: 0-100

<A-2b> OVERDRIVE

Provides an effect like what is produced by a tube amplifier with distortion present. It is a digital overdrive that faithfully expresses the soft and strong elements when picking, and all the other nuances the player adds.

• TONE

Setting used to adjust the tone of the effected sound.
"+" = Boosts (increases) the amplitude of the upper sound range.
"±0" = The tone is unchanging and flat.
"-" = Cuts (attenuates) the amplitude of the upper sound range.

OVERDRIVE
TONE =

VALUE: -50→+50

• DRIVE

Setting determining the manner in which distortion occurs. As the value is set higher, the distortion becomes greater.

OVERDRIVE
DRIVE =

VALUE: 0-100

• TURBO

Provides selection of either On or Off for the Turbo mode.
"OFF" = Provides a fine overdriven sound.
"ON" = While retaining most of the nuances, the gain is increased to provide an overdriven sound that distorts very well.

OVERDRIVE
TURBO =

VALUE: ON/OFF

• **LEVEL**

Sets the amplitude for the time the effect is applied. The higher the value is set, the more amplitude increases. Should be set so there is no difference in amplitude when an effect is turned on and off.

OVERDRIVE
LEVEL=

VALUE: 0-100

<A-3> PICKING FILTER

A digital effect which provides a smooth wah. It works by modulating the harmonics, based on changes in the cut-off frequency that are produced in accord with variances in picking strength.

• **SENSITIVITY**

Provides for adjustment of the degree to which the effect is applied respective to the strength of the input guitar signal. As the value is set higher, even weaker picking strengths allow the effect to be obtained. With the value set low, the effect is applied only when using the pick strongly.

- * With the value is set high, the timbre changes ordinarily obtained depending on picking strength will not be produced.

PICKING FILTER
SENS=

VALUE: 0-100

• **CUTOFF FREQUENCY**

Sets the filter's cutoff frequency. As the higher the value is set, the higher the CUTOFF FREQUENCY is set. The Picking Filter employs movement of the CUTOFF FREQUENCY to achieve its effect.

PICKING FILTER
CUTOFF FREQ=

VALUE: 0-100

[EXPRESSION]

When this parameter is assigned (set) for "EXP. ASSIGN (EV-5)", you can obtain a wah pedal effect. For such wah pedal applications, "SENS" is ordinarily set to "0".

• Q Control

Sets the sharpness of the boosting filter. The higher the value set, the sharper the filter's curve becomes.

PICKING FILTER
Q =

VALUE: 1.0-5.0

• UP/DOWN

Determines the direction of the movement made by the "Cutoff Frequency", which changes in accord with the level of input.

"UP" = Frequency will move upward.

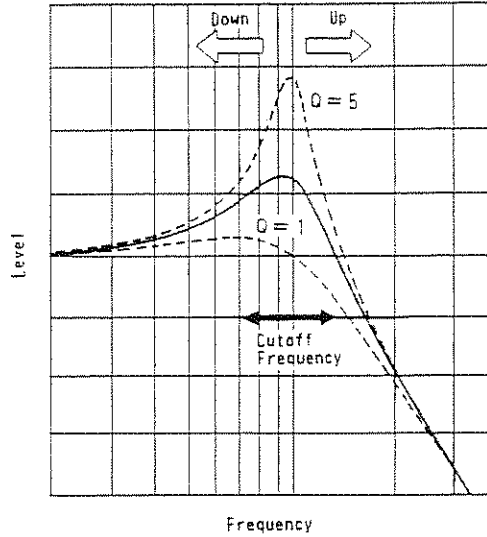
"DOWN" = Frequency will move downward.

PICKING FILTER
UP/DOWN =

VALUE: UP/DOWN

< Concerning the Picking Filter >

Each parameter for the Picking Filter functions as shown below.



3
■

<A-4> STEP PHASER

This is a digital phaser which creates effects that are sharp, with changes that range widely, from extremely slow to very fast. It includes a new parameter, "LFO STEP", to provide for phaser effects that were until now unobtainable.

• RATE

Sets the speed of the sweep for the phaser effect. The higher the value is set, the faster the sweep becomes.

```
STEP PHASER  
RATE=
```

VALUE: 0-100

• DEPTH

Sets the depth for the phaser effect. The higher the value is set, the deeper the phaser effect becomes.

```
STEP PHASER  
DEPTH=
```

VALUE: 0-100

• MANUAL

Sets the center frequency for the phase shift. The higher the value set, the higher the center frequency becomes.

```
STEP PHASER  
MANUAL=
```

VALUE: 0-100

• RESONANCE

Sets the amount of feedback within the phaser. As the value is set higher, the amount of feedback increases; and the phaser effect becomes more pronounced, producing sounds that are more unique.

```
STEP PHASER  
RESONANCE=
```

VALUE: 0-100

• LFO STEP

This parameter applies in a stepped manner the changes that are set for "RATE" and "DEPTH". As the value is set higher, the step becomes wider, and the changes become more noticeable.

```
STEP PHASER  
LFO STEP=
```

VALUE: 0-100

<A-5> PARAMETRIC EQUALIZER

Provided here is a 4-band digital parametric equalizer. A shelving type is used for the HIGH/LOW bands, and for the 2 middle bands a peaking type parametric equalizer is employed. Thus, it is allowed for the most ambitious sound creations.

• HIGH FREQUENCY

Determines the frequency of what is Cut/Boost by "HIGH LEVEL". Accepts setting for the specific frequency.

```
PARAMETRIC EQ  
HI FREQ=
```

VALUE: 2.00-8.00 kHz

• HIGH LEVEL

Setting for the amount to be Cut/Boost (± 12 dB) respective to the frequency set for "HIGH FREQUENCY".

```
PARAMETRIC EQ  
HI LEVEL=
```

VALUE: -12dB--+12dB

• HIGH MID FREQUENCY

Determines the frequency of what is Cut/Boost by "HIGH MID LEVEL". Accepts setting for the specific frequency.

```
PARAMETRIC EQ  
H.M FREQ=
```

VALUE: 500Hz-4.00kHz

• HIGH MID Q Control

Setting which determines the sharpness respective to the frequency band for Cut/Boost. As the value is set higher, the slope follows a sharper curve.

```
PARAMETRIC EQ  
H.MID Q=
```

VALUE: 1.0-5.0

• HIGH MID LEVEL

Setting for the amount to be Cut/Boost (± 12 dB) respective to the frequency set for "HIGH MID FREQUENCY".

```
PARAMETRIC EQ  
H.M LEV=
```

VALUE: -12dB--+12dB

• LOW MID FREQUENCY

Determines the frequency of what is Cut/Boost by "LOW MID LEVEL". Accepts setting for the specific frequency.

```
PARAMETRIC EQ  
L.M FREQ=
```

VALUE: 125Hz-1.00kHz

• LOW MID Q Control

Setting which determines the sharpness respective to the frequency band for Cut/Boost. As the value is set higher, the slope follows a sharper curve.

```
PARAMETRIC EQ  
L.MID Q=
```

VALUE: 1.0-5.0

• LOW MID LEVEL

Setting for the amount to be Cut/Boost (± 12 dB) respective to the frequency set for "LOW MID FREQUENCY".

```
PARAMETRIC EQ  
L.M LEV=
```

VALUE: -12dB--+12dB

• LOW FREQUENCY

Determines the frequency of what is Cut/Boost by "LOW LEVEL". Accepts setting for the specific frequency.

```
PARAMETRIC EQ
LO FREQ=
```

VALUE: 60Hz-250Hz

• LOW LEVEL

Setting for the amount to be Cut/Boost (± 12 dB) respective to the frequency set for "LOW FREQUENCY".

```
PARAMETRIC EQ
LO LEVEL=
```

VALUE: -12dB-+12dB

• OUTPUT LEVEL

Setting which determines the parametric equalizer's overall amount of Cut/Boost (± 12 dB). Should be set so there is no difference in amplitude when the effect is turned on and off.

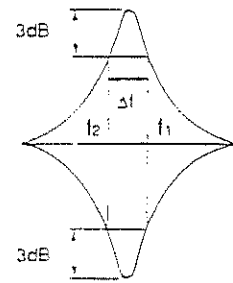
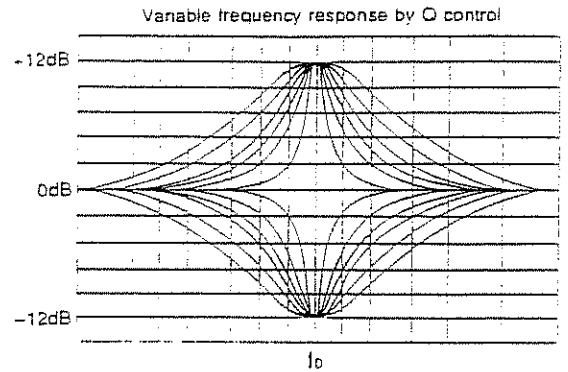
```
PARAMETRIC EQ
OUT LEV=
```

VALUE: -12dB-+12dB

< About the Q Control >

The Q Control determines the sharpness for Cuts/Boosts. As the value for Q is made higher, the slope if made steeper.

Q, which represents the sharpness of peak and dip, is a value arrived at by dividing the center frequency (f_0) by the frequency band ($\Delta f = f_1 - f_2$) at the time a 3 dB attenuation to the peak point (3 dB increase to dip point) is reached.



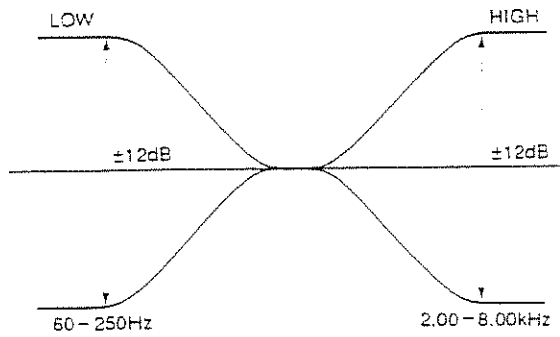
$$Q = \frac{f_0}{\Delta f = f_1 - f_2}$$

CG

< About Shelving and Peaking >

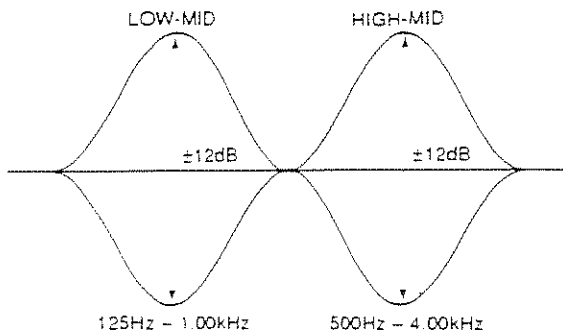
Shelving Type:

As shown below, a type which cuts/boosts signals in a frequency band higher than, or lower than, the frequency set for "FREQUENCY"



Peaking Type:

While focusing on the frequency set for "FREQUENCY", this type cuts/boosts signals in the band set for "Q Control". Thus, the frequency response can be provided with peaks and dips.



3

<A-6> NOISE SUPPRESSOR

This effect cuts off the guitar input signal when its level goes below a certain level, effectively suppressing noise. Can be used to get rid of the annoying sounds that occur at certain times, such as at a break, or for eliminating hum.

• SENSITIVITY

Sets the input sensitivity for the Noise Suppressor. The weaker the guitar signal, the higher it should be set in order to get a natural attenuation in sound after a note has sounded.

```
NOISE SUPPRESSOR  
SENS=
```

VALUE: 0-100

- If "SENSITIVITY" is set low, and you also play with the guitar's volume turned down, you may hear no sound at all due to the effect of the Noise Suppressor.

• RELEASE

Setting which determines the time it takes for the output level to attenuate to "0" after the guitar signal's level has gone below the "SENSITIVITY" and the Noise Suppressor has started working.

```
NOISE SUPPRESSOR  
RELEASE=
```

VALUE: 0-100

- Ordinarily, this parameter is set to "0".

• LEVEL

Sets the level of what is output from the Noise Suppressor. When set for the value "100", the level input to the Noise Suppressor will be equal to the output level.

```
NOISE SUPPRESSOR  
LEVEL=
```

VALUE: 0-100

- Ordinarily, this parameter is set to "100".

[EXPRESSION]

When this parameter is assigned (set) for "EXP. ASSIGN (EV-5)", the pedal can be used to control volume during performance, or you to obtain a natural delay or reverberating effect.

<B-1> SHORT DELAY

A digital single delay with a maximum delay time of 100 msec. This effect is useful for adding fatness to a sound.

• DELAY TIME

Sets the amount of delay with respect to the direct sound.

```
SHORT DELAY  
D. TIME=
```

VALUE: 0-100 ms

• EFFECT LEVEL

Sets the amplitude of the delayed sound (effected sound) relative to the direct sound. As the value is set higher, the greater the delayed sounds become. When set to "100", the delayed sound and direct sound will be of equal strength.

```
SHORT DELAY  
E. LEVEL=
```

VALUE: 0-100

<B-2a> CHORUS

This effect adds fatness and breadth to the sound through adding sound that is shifted slightly in pitch relative to the direct sound. Through two separate digital modulation circuits it provides true synchronous modulation, so you can obtain the ideal in chorus modulation, without any wavering in the sound.

• PRE DELAY

Setting which determines the amount of time with respect to the direct sound that passes until the chorus (effected) sound is output.

```
CHORUS  
P. DELAY=
```

VALUE: 0-100ms

• RATE

Sets the rate for the Chorus sweep. With higher values the rate becomes faster.

```
CHORUS  
RATE=
```

VALUE: 0-100

• DEPTH

Sets the depth of the Chorus. With higher values the modulation becomes deeper.

```
CHORUS  
DEPTH=
```

VALUE: 0-100

• **EFFECT LEVEL**

Sets the mixing level of the Chorus sound with respect to the direct sound. As the value is set higher, the Chorus becomes more prevalent. With the value set at "100", the direct sound will be equal to that of the Chorus.

CHORUS
E. LEVEL =

VALUE: 0-100

<B-2b> **FLANGER**

A digital flanger capable of a wide range of flanging effects.

• **RATE**

Sets the rate for the modulation. With higher values the rate becomes faster.

FLANGER
RATE =

VALUE: 0-100

• **DEPTH**

Sets the width for the modulation. The higher the value is set the broader the sweep becomes.

FLANGER
DEPTH =

VALUE: 0-100

• **MANUAL**

Sets the center frequency used by the flanging effect. The higher the value, the higher the frequency becomes.

FLANGER
MANUAL =

VALUE: 0-100

• **RESONANCE**

Sets the amount of feedback. The higher the value is set, the greater the amount of feedback becomes, and thus the uniqueness of the flanging effect becomes more pronounced.

FLANGER
RESONANCE =

VALUE: 0-100

<B-2c> PITCH SHIFTER

The Pitch Shifter allows for a pitch shift of any desired amount up to ± 1 octave to be obtained respective to the original sound.

• BALANCE

Sets the ratio of the volume of the direct sound with respect to the effected sound. Given that the volume for one is set to "100" the other is represented as a percentage of that.

"E (effected sound)" = Proportion of sound that has changed as a result of the Pitch Shifter.

"D (direct sound)" = Proportion of sound that has not been effected by the Pitch Shifter.

```
PITCH SHIFTER
BAL E=      D=
```

VALUE: <When D=100> E= 0-100
<When E=100> D= 0-100

• CHROMATIC

Accepts setting for the amount of the pitch shift. One step is equivalent to a semitone.

"+" = Provides shift to pitch higher than original.

" ± 0 " = When at this setting, the pitch of the original sound can be finely adjusted using "FINE".

"-" = Provides shift to pitch lower than original.

```
PITCH SHIFTER
CHROMATIC=
```

VALUE: -12+12

• When an expression pedal is set (assigned) to "FINE", the message "IGNORE" will appear, blinking, in the display, and the set value will be ignored.

```
PITCH SHIFTER
CHROMATIC+ IGNORE
```

• FINE

Provides for fine adjustment of the amount of the pitch shift. It allows you to make minute changes in the pitch set in semitones for "CHROMATIC".

"+" = Provides shift to higher pitch.

" ± 0 " = When at this setting, the amount of pitch shift is exactly that set for "CHROMATIC".

"-" = Provides shift to a lower pitch.

```
PITCH SHIFTER
FINE=
```

VALUE: -50+50

• Since one step under "CHROMATIC" is equal to "100" under "FINE", the amount of the pitch shift would be identical for both of the following:

[CHROMATIC = +4] [FINE = +50]

[CHROMATIC = +5] [FINE = -50]

• The range of the pitch shifters is ± 1 octave. In case you set a value of "+12" for "CHROMATIC", if you set a value of " ± 0 - +50" for "FINE", this value would be ignored and only function as it were set to " ± 0 ". In the same way, you set the value of "-12", if you set a value of "-50- ± 0 " for "FINE", the value would be ignored and only function as it more to " ± 0 ".

[EXPRESSION]

When this parameter is assigned (set) for "EXP. ASSIGN (EV-5)", you can obtain settings for the amount of shift within the range of " ± 1200 (± 1 octave)".

• FEEDBACK

Sets the amount of feedback. Since the pitch shifted sounds are fed back, the pitch of the effected sounds keep on rising (falling). This can be employed to create certain special effects.

```
PITCH SHIFTER
F. BACK=
```

VALUE: 0-100

• **PRE DELAY**

Setting which determines the amount of time with respect to the direct sound that passes until the pitch shifted (effected) sound is output. Ordinarily it is set to "0 msec", but if you want an effect where the pitch of the effected sound keeps on rising (or falling), you can apply "PRE DELAY" so that you get smooth shifts in the sound.

```
PITCH SHIFTER
P.DELAY=
```

VALUE: 0-100ms

- Due to the design of the Pitch Shifter, output of the effected sounds may be slightly delayed at times, even when "PRE DELAY" is set to "0 msec".

<B-2d> **SPACE-D**

Produces a natural-sounding digital DIMENSION with little wavering of the sound. Its impressive breadth easily surpasses that of chorus.

• **MODE**

The mode should be set to match the mood desired for a song.

- Mode 1: A slow, light dimensional effect.
- Mode 2: A slow, deep dimensional effect.
- Mode 3: A fast, light dimensional effect.
- Mode 4: A fast, deep dimensional effect.

```
SPACE-D
MODE=
```

VALUE:1-4

<B-3> AUTO PANPOT

Through selection of a mode, a panning or tremolo effect is created.

"PANNING": When output is in stereo, (output is from "AUTO PANPOT") the sound's center (orientation) pans from left to right.

"TREMOLLO": The output level is varied (from "AUTO PANPOT").

- * The content of what is varied is different depending on the MODE setting.
- * When the output is monaural, the panning effect will not be obtained when set to "PANNING".

• MODE

Provides for selection of Mode used for Auto Panpot.

```
AUTO PANPOT
MODE =
```

VALUE: PANNING/TREMOLLO

• RATE

Sets the rate. The higher the value set, the faster the rate becomes.

"PANNING": Sets the rate at which the output is panned left and right.

"TREMOLLO": Sets the rate at which the output level increases/decreases.

```
AUTO PANPOT
RATE =
```

VALUE: 0-100

• DEPTH

Sets the amount of movement (variation). The higher the value set, the more movement (variation) that is obtained.

"PANNING": Sets the amount by which output sound will panned left and right.

"TREMOLLO": Sets the amount of change in the output level.

```
AUTO PANPOT
DEPTH =
```

VALUE: 0-100

<B-4> TAP DELAY

This is a digital delay that allows for different delay times to be set for each of 3 directions: Left (L), Right (R), and Center (C). A great variety of delay effects can be created depending on the settings made.

- When outputting in monaural, all delayed sounds, for all 3 directions, will be output in monaural.

• CENTER TAP

Sets the delay time for the delayed sounds output from the Center (L+R).

```
TAP DELAY  
C.TAP=
```

VALUE: 0-1200ms

• LEFT TAP

Sets the delay time for the delayed sounds output from the Left (L).

```
TAP DELAY  
L.TAP=
```

VALUE: 0-1200ms

- Output will be from "A", for both the output jacks and balanced output.

• RIGHT TAP

Sets the delay time for the delayed sounds output from the Right (R).

```
TAP DELAY  
R.TAP=
```

VALUE: 0-1200ms

- Output will be from "B", for both the output jacks and balanced output.

• CENTER LEVEL

Sets the volume for the delayed sounds output from the Center (L+R). The higher the value is set, the greater the volume of the delayed sounds becomes. At "100" the levels of the direct sounds and delayed sounds will be equal.

```
TAP DELAY  
C.LEVEL=
```

VALUE: 0-100

• LEFT LEVEL

Sets the volume for the delayed sounds output from the Left (L). The higher the value, the greater the volume of the delayed sounds. At "100" the levels of the direct sounds and delayed sounds will be equal.

```
TAP DELAY  
L.LEVEL=
```

VALUE: 0-100

• RIGHT LEVEL

Sets the volume for the delayed sounds output from the Right (R). The higher the value, the greater the volume of the delayed sounds. At "100" the levels of the direct sounds and delayed sounds will be equal.

```
TAP DELAY  
R.LEVEL=
```

VALUE: 0-100

• FEEDBACK

Sets the amount of feedback for the delayed sounds output from the Center.

```
TAP DELAY  
F.BACK=
```

VALUE: 0-100

- Feedback cannot be applied respective to the delayed sounds output from the Left and Right.
- The setting for the amount of Feedback does not have any effect on "CENTER LEVEL".

• CUTOFF FREQUENCY

Set here is the cutoff frequency for the low-pass filter. The filter allows output of only those frequency bands that are lower than the frequency set here. When set to "THRU", the filter allows output of all frequency bands. This parameter allows you to obtain a smooth delay more like that of an analog unit, even though it is a digital delay.

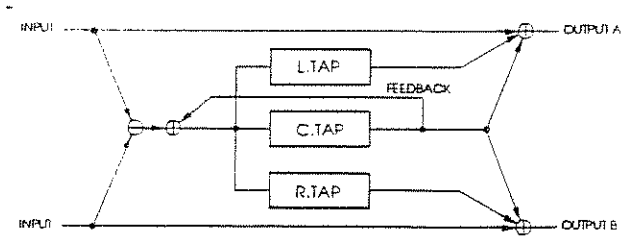
```
TAP DELAY  
CUTOFF=
```

VALUE: 500Hz-8.00kHz and THRU

- Since this filter is applied only to the effected sounds, no change is made in the direct sounds.

< Reference >

The Tap Delay is configured as shown below:



The Tap Delay is capable of creating a wide range of delay effects, depending on the settings that are made. Here are two representative examples of settings used to get stereo delay effects.

<< Example 1 >>

To set for a panning delay which outputs the delayed sounds every 500 msec, alternately to left and right.

C.TAP = 1000msec.
L.TAP = 500msec.
R.TAP = 1000msec.
C.LEVEL = 0
L.LEVEL = any reasonable level
R.LEVEL = any reasonable level
F.BACK = any reasonable level

- When set as above, output will be from the Left first.

<< Example 2 >>

To set for a triple tap delay which outputs the delayed sounds alternately to Left, Right, and Center every 400 msec.

C.TAP = 1200msec.
L.TAP = 400msec.
R.TAP = 800msec.
C.LEVEL = any reasonable level
L.LEVEL = any reasonable level
R.LEVEL = any reasonable level
F.BACK = any reasonable level

<B-5> REVERB

Of sounds reaching a listener, in addition to the direct sounds from the source itself, there also can be heard the reverberated sounds reflected from walls, etc. This effect creates such reverberated sounds.

• DECAY

Sets the reverb time. The longer the time set, the longer the reverb will linger.

```
REVERB
DECAY=
```

VALUE: 0.5-20sec

• MODE

Provides selection for the Mode the Reverb uses. A variety of simulated ambiances are obtained depending on the setting.

```
REVERB
MODE=
```

VALUE: ROOM 1/2/3
HALL 1/2/3
PLATE 1/2
SPRING 1/2

[REVERB MODE CHART]

MODE:	EXPLANATION
ROOM 1	Provides a reverb with the ambience of a live room, and bright tone control. (Standard decay time: 0.5- 1.2sec)
ROOM 2	Provides the ambience of a room deader than ROOM 1. (Standard decay time: 0.5- 1.5sec)
ROOM 3	Provides the ambience of a room. Tone coloration is more relaxed, milder. (Standard decay time: 0.8- 2.1sec)
HALL 1	Provides the reverberation with clear tone colors, and the ambience is a concert hall. (Standard decay time: 1.2- 2.5sec)
HALL 2	Provides the reverberation of a concert hall that is somewhat deader than HALL 1. (Standard decay time: 1.5- 3.3sec)
HALL 3	Provides the ambience of a concert hall. Tone coloration is more relaxed, milder. (Standard decay time: 2.2- 4.5sec)
PLATE 1	A plate-like reverb with a clear, emphasized upper range. (Standard decay time: 0.7- 3.0sec)
PLATE 2	A plate-like reverb using a somewhat larger plate than PLATE 1. (Standard decay time: 0.8- 3.5sec)
SPRING 1	A reverb sound that emulates a two-spring reverb machine. Provides the characteristic brightness of a spring reverb. (Standard decay time: 0.5- 3.8sec)
SPRING 2	A reverb sound that emulates a three-spring reverb machine. Provides a smoother reverb than SPRING 1. (Standard decay time: 0.5- 2.8sec)

• CUTOFF FREQUENCY

Set here is the cutoff frequency for the low-pass filter. The filter allows output of only those frequency bands that are lower than the frequency set here. When set to "THRU", the filter allows output of all frequency bands.

```
REVERB  
CUTOFF =
```

VALUE: 500Hz-8.00kHz and THRU

- Since this filter is applied only to the reverberation sounds, no change is made in the direct sounds.

• PRE DELAY

Setting which determines the amount of time that will pass between sounding of the direct sound and that of the reverberation sound.

```
REVERB  
P. DELAY =
```

VALUE: 0-100ms

• EFFECT LEVEL

Sets the amplitude of the reverberation sound (reverb sound) respective to the direct sound. The higher the value is set, the greater the reverb sounds become.

```
REVERB  
E. LEVEL =
```

VALUE: 0-100

<B-6> LINEOUT FILTER

For use when recording using Line Outputs, or for tone control for a guitar amplifier when a power amplifier is connected directly to monitoring speakers. It provides adjustment for the overall sound quality of the output.

- When connected with a guitar amplifier, the Lineout Filter normally would be turned off. But, if put on, it can be used as a powerful tone controller.

• PRESENCE

Adjusts the sound quality of the extremely high frequency band. The higher the value is set, the more emphasis it receives.

```
LINEOUT FILTER  
PRESENCE =
```

VALUE: 0-100

• TREBLE

Adjusts the sound quality of the high frequency band. The higher the value is set, the more emphasis it receives.

```
LINEOUT FILTER  
TREBLE =
```

VALUE: 0-100

• MIDDLE

Adjusts the sound quality of the middle frequency band. The higher the value is set, the more emphasis it receives.

```
LINEOUT FILTER  
MIDDLE =
```

VALUE: 0-100

• **BASS**

Adjusts the sound quality of the low frequency band. The higher the value is set, the more emphasis it receives.

```
LINEOUT FILTER
BASE=
```

VALUE: 0-100

Chapter Four Employing MIDI in Performance

The GP-16 is equipped with MIDI connectors. When these connectors are used to exchange data with other MIDI devices, patches can be changed or setting data can be saved on the other device.

- When using MIDI it is necessary to have the channels on the connected devices set so they match. Normal transmission/reception of MIDI data cannot be carried out if the channel on the GP-16 is not set correctly.
- Should this be the first time you will be using MIDI devices, first read "2 Concerning MIDI" (P. 45).

1

What MIDI Can Do

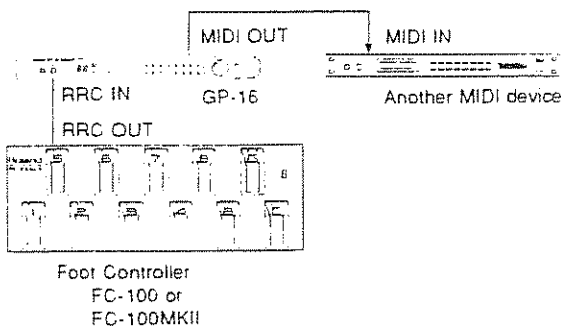
The following become available when the GP-16 is connected with an external MIDI device.

1. Patch selection using MIDI

Using MIDI Program Change (changes in sound) messages, patches on the GP-16 can be changed using an external MIDI device, or the patches on an external MIDI device can be changed in keeping with selections made on the GP-16's panel.

<< Using the GP-16 to change patches on an external MIDI device >>

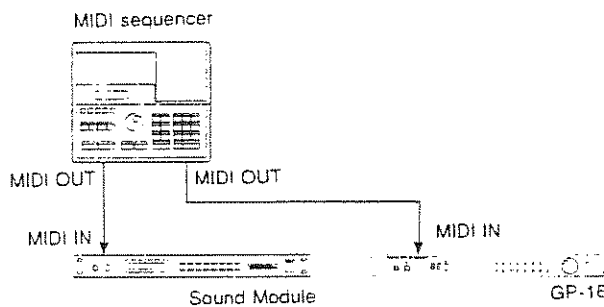
In the setup below, when selection of a patch is made using the foot controller, both the GP-16 and external MIDI device will be simultaneously changed to the Program Change Number that corresponds to the number of the selected Patch.



- When necessary, the MIDI channel should be reset. For information on how to set the MIDI transmit channel refer to "2. Setting the MIDI Transmit Channel" (P. 47).

<< Using external MIDI device to change patches on the GP-16 >>

In the setup below, a sequencer is used to provide automatic accompaniment while the guitar is played. At some point in the song, you may want to play using a different patch on the GP-16. If you insert a Program Change (one numbered to correspond to the patch you want) beforehand in the sequencer data at the desired point in the song, you will get an automatic change to the patch you want without having to make the patch selection on the GP-16.



- When leaving the factory, the GP-16 was set to the OMNI On mode. When necessary, settings for OMNI On/Off or the MIDI channel should be made. For information on how to make these settings, refer to "3. OMNI On/Off Setting" (P. 48) and "1. Setting the MIDI Receive Channel" (P. 47).

2. Output of expression pedal messages

When a foot controller and an expression pedal are connected to the GP-16, you can also output pedal data from MIDI OUT.

- When pedal data is to be output, you need to set a Control Number. It is set to "off" as the factory default. For information on how to make this setting, refer to "4. Output of Control Change message" (P. 48).

2 Concerning MIDI

3. Transmission/Reception of data using MIDI (Data transfer)

By employing Roland MIDI System Exclusive messages, the GP-16's patch data can be transferred to another GP-16 or to another device such as a MIDI sequencer, where it can be stored.

- For information on transmission, see "5. Transmission of data" (P. 48).
- For information on reception, see "6. Data reception and verification" (P. 50).

4. Mapping the correspondence between patches and Program Change Numbers (Map edit)

Settings can be made which determine the correspondence between Program Change Numbers and Patches that will pertain when the GP-16's Patches are changed using an external MIDI device. Conversely, settings can also be made to determine the correspondence between Patches and Program Change Numbers which will be used to select among Presets on an external MIDI device, using the GP-16.

- For details, refer to "7. MIDI Mapping (Program Change → Patch)" (P. 52) and "8. MIDI Mapping (Patch → Program Change)" (P. 52).

WHAT IS MIDI?

MIDI stands for the "Musical Instrument Digital Interface". It is an international standard that allows for a variety of data to be exchanged between different instruments. Such data includes information such as that of the music performed, and about changes in sound. As long as they are MIDI compatible, all devices, regardless of differences in model or manufacturer, can exchange whatever performance data they are equipped to understand.

With MIDI, a performance on a keyboard, or operations involving controls, are handled as MIDI data. When an instrument is played, a stream of MIDI messages is generated that corresponds to the events happening during play. A MIDI device receiving these messages can then produce sound as if it were being played directly.

1. The Exchange of MIDI Data

The exchange of MIDI data is carried out as explained in the following.

About MIDI Connectors

In carrying out the exchange of MIDI data, the 3 types of connectors shown below are used. MIDI cables are connected to these connectors in various ways depending on the method they are to be used.



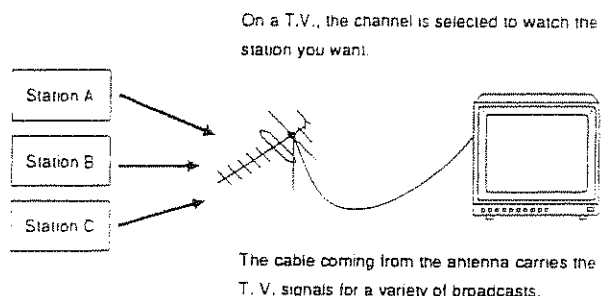
- MIDI IN** : Receives data from another MIDI device.
- MIDI OUT** : Transmits data originating in the unit.
- MIDI THRU**: Sends out an exact copy of the data received at MIDI IN.

- In theory, any number of MIDI devices could be connected together using MIDI THRU connectors, but it is best to consider 4 to 5 devices as being the practical limit. This is because the further down the line a device is located, the more delay there is that could occur, and the chance of error due to deterioration in signal quality increases.

MIDI Channels

With MIDI, a single cable can be used for carrying differing sets of performance information, for a number of MIDI devices. This is possible thanks to the concept of a MIDI channel.

MIDI channels are in some ways similar to the channels on a television set. On a T.V., a variety of programs broadcast from different stations can be viewed by switching channels. This is because the information on any particular channel is conveyed only when the receiver is set to the same channel that is being used for transmission.



The channels available with MIDI range from 1 to 16. When a musical instrument (the receiver) is set so its channel matches the MIDI channel used by the transmitting device, the MIDI data is conveyed.

OMNI Mode

When set to OMNI On, MIDI data on any channel can be received, regardless of the setting made for the receive channel.

It should be set to OMNI Off if you wish to receive MIDI data on the receive channel that is set.

2. MIDI Messages Recognized by the GP-16

In order to convey the great variety of expression possible with music, MIDI has been provided with a large range of data types (messages).

Program Change Messages

These messages are used mainly for making changes to another sound. Sounds are changed using Program Change Numbers, from 1 to 128. Patch changes on the GP-16 correspond with Program Change Numbers as follows:

Patch Number	Program Change Number
A-1-1 to B-6-8	1 to 128

Control Change Messages

Control Changes messages are used to enhance the expressivity of a performance. Each function is identified by a Control Change Number, and the functions available for control will vary depending on the instrument. On the GP-16, functions equivalent to "EXP(1)", "EXP2", and "Control Pedal", for a foot controller connected to the GP-16 can be controlled from another device.

Exclusive Messages

Exclusive Messages handle information such as that related to a device's unique tones. Generally, such messages can be exchanged only between devices of the same model and by the same manufacturer. Exclusive Messages can be employed instead of Program Change Numbers to save Patch settings to a sequencer, or used for transferring Patch settings to another GP-16. Whenever Exclusive Messages are to be used for communication, both musical instruments need to be set to the same Unit Number. On the GP-16 the Unit Number corresponds to the MIDI Channel's number.

- If a sequencer capable of handling Exclusive Messages is used, instead of Program Change Numbers, temporary data can be transmitted, and tone changes can be made.

MIDI Implementation Chart

MIDI has made it possible for a wide range of musical instruments to communicate with each other, but that doesn't mean that the many types of data will all be understood. The only communication possible is concerned with the data that both instruments understand. It is for this reason that every owner's manual, for all kinds of musical instruments, always includes a MIDI Implementation Chart, as a quick reference to the types of MIDI messages it is capable of handling. You can compare the MIDI Implementation Charts for both instruments in order to find out which types of data can be communicated between them.

Chapter Five System Settings

1 How to make System Settings

The areas covered by settings which can be made for the system are as follows:

1. MIDI Receive Channel
2. MIDI Transmit Channel
3. OMNI On/Off
4. Control Number
5. Bulk Dump
6. Bulk Load
7. MIDI Mapping (Program Change → Patch)
8. MIDI Mapping (Patch → Program Change)
9. MIDI Filter
10. Control Pedal
11. Output Channel
12. LCD Contrast

- The Transmission/Reception of MIDI data is involved in "5. Bulk Dump" and "6. Bulk Load".

If you perform "7. Escaping" (P.23), or turn power off before a Write has been performed, your settings will be lost. If you wish to save settings, always carry out the "Write procedure" and store them in the GP-16's memory.

- To carry out the Write procedure, see "[2] Storing System Settings" (P.54).

Changes affecting the system are made using the following procedure:

[Step 1] From the Play mode (state where patches can be selected), press **SYSTEM** to get the System mode.

[Step 2] For the following procedures, press **FUNCTION** until you have called to the display the parameter you wish.

- If you perform "7. Escaping" (P.23) while making changes in system settings, the changes will not take effect, and you will be returned to the Play mode.
- In the System mode, **VALUE** cannot be used to make changes in values.

< Although the parameters can be set in any order you please, here they are explained in their logical order. >

1. Setting the MIDI Receive Channel

The following allows you to set the MIDI Receive channel.

- When shipped the unit was set to channel "1".

[Step 3-1] From the System mode, use **FUNCTION** to call up the following parameter (have it appear in the display). The currently set MIDI Receive channel will appear in the display.

```
1. MIDI RECEIVE  
CHANNEL =
```

VALUE: 1-16

[Step 4-1] Set the MIDI Receive channel using the **α-Dial**.

2. Setting the MIDI Transmit Channel

The following allows you to set the MIDI Transmit channel. All MIDI data that the unit transmits will be transmitted on the channel you set for this parameter.

- When shipped the unit was set to channel "1".

[Step 3-2] From the System mode, using **FUNCTION**, call up the following parameter (have it appear in the display). The currently set MIDI Transmit channel will appear in the display.

```
2. MIDI TRANSMIT  
CHANNEL =
```

VALUE: 1-16

[Step 4-2] Set the MIDI Transmit channel using the **α-Dial**.

3. OMNI On/Off Setting

The unit should be set to OMNI On if you wish to receive MIDI data on all channels.

OMNI On : Any connected MIDI device, regardless of the channel it is using for transmission, can be used to control the GP-16.

OMNI Off: Data arriving only on the channel that has been set for the GP-16 will be received.

- Even though set to OMNI On, all MIDI data sent out from the GP-16 will be transmitted on only the set Transmit channel.
- When shipped, the unit was set to OMNI On.

[Step 3-3] From the System mode, using **FUNCTION**, call up the following parameter (have it appear in the display). The current setting for OMNI will be displayed.

```

3. OMNI ON/OFF
OMNI =
    
```

VALUE: ON/OFF

[Step 4-3] Using the **α-Dial**, set the status for OMNI.

- When the GP-16 is set to OMNI On the following types of data will be received regardless of the channel.

- Program Change
- Control Change

4. Output of Control Change message

Control Change messages from an expression pedal or an external MIDI device (Control No. 16), can be transmitted as Control Change messages using the Control Number set here. This function then allows you to use the expression pedal to control the parameters on another MIDI device.

- In order to make use of this function, you will need the optionally available foot controller and expression pedal.

[Step 3-4] From the System mode, using **FUNCTION**, call up the following parameter (have it appear in the display). The current Control Change Number will be displayed.

```

4. CONTROL ASSIGN
NUMBER =
    
```

VALUE: TRANSMIT OFF, 0-31 or 64-95

[Step 4-4] Using the **α-Dial**, set the Control Number.

- When set to "TRANSMIT OFF", no Control Change messages will be transmitted by the GP-16. The unit was set to "TRANSMIT OFF" when shipped.
- The Control Number that should be set will vary depending on the MIDI device that is transmitting. Make the setting after referring to the MIDI Implementation Chart for the device you have connected.

5. Transmission of Data (Bulk Dump)

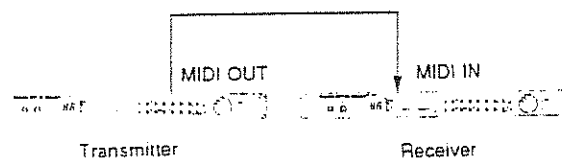
By employing Roland System Exclusive messages, the data for the GP-16's patches can be transferred to another GP-16, or to another device such as a MIDI sequencer, where it can be stored. This is referred to as "Bulk Dump". The data transmission is carried out by the One-way method.

- One-way means that the data is transmitted across the interface without any regard for the conditions on the receiving end.

a. Making Connections with Other Devices

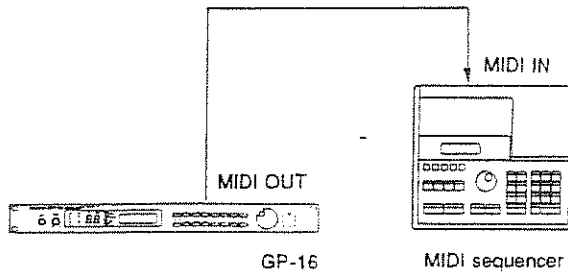
When transmitting data, connection with another MIDI device is made as follows:

<< To transmit to another GP-16 >>



- After setting the GP-16 on the receiving end so it is ready to receive, transmission is started. For information on the procedure, see "6. Data Reception and Verification (Bulk Load, Verify)" (P.50).

<< To transmit to a MIDI sequencer >>

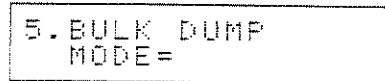


- After setting the MIDI sequencer so that is ready and waiting for reception of Exclusive messages, start transmission of data from the GP-16.
- Refer to the Owner's Manual for your sequencer for details of procedures.

b. Data Transmission Procedures

- Set the MIDI channel on both the receiver and transmitter to the same channel. If the MIDI channels on both do not match, data transmission cannot take place.

[Step 3-5] From the System mode, use **FUNCTION** to call up the following parameter (have it appear in the display).



VALUE: OFF, NUMBER, BANK, GROUP, ALL, TEMP

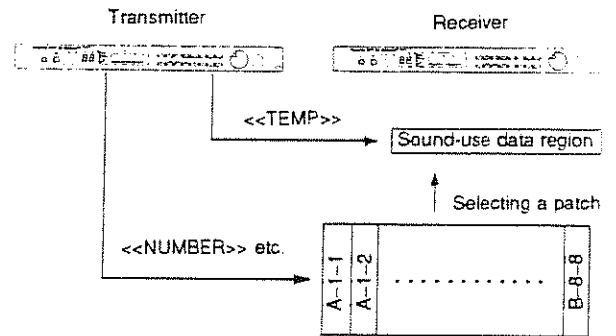
[Step 4-5] Using the **α-Dial**, specify the type of data that is to be transmitted. Each type, and the contents which will be transmitted are as follows:

- NUMBER : Transmits the data for one Patch alone; as set using Group/Bank/Number.
- BANK : Transmits the data for 8 Patches; as set using Group/Bank.
- GROUP : Transmits the data for 64 Patches; as set using Group.
- ALL : Transmits the data for all 128 Patches.
- TEMP : Transmits the data for the currently selected Patch. When received, data is handled as temporary data.

< Concerning Temporary data >

As shown in the illustration below, in addition to the region in memory where the data for the 128 patches are stored, there is also a separate "Sound-use data region"

(temporary buffer)", used for creating the current effects sounds. When a patch is selected in the Play mode, its data is copied to the "Sound-use data region" (this is called "temporary data") and used to produce the effects sounds. When "TEMP" is selected under Bulk Dump, the data is transferred to the "Sound-use data region" of another GP-16, thus transfer of effects sounds can be carried out without altering the contents stored in each patch. However, the data in the "Sound-use data region" will be lost when another patch is selected. Should you wish to save it, use the procedure in "[3] Copying" (P.24) to specify a patch and store it in memory. In addition, in cases where you have stored data to a MIDI sequencer or the like, such data from this machine will be also transferred to the "Sound-use data region" of the GP-16 when it is transmitted.



Once the setting has been made, the message "Push SYSTEM Key!" will appear blinking in the upper line of the display.

[Step 5-5] Press **SYSTEM**.

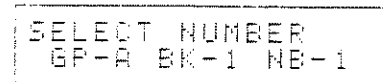
[Step 6-5]

<< When "NUMBER", "BANK" or "GROUP" has been selected in [Step 4-5] >>

Select the Number (Bank, Group) that is to be transmitted. The selected Number (Bank, Group) will appear in the display. the content of the display is as follows:

- When you wish to transmit the currently selected Number (Bank, Group), this step is not needed.

"NUMBER"



(Example: To transmit Group A, Bank: 1, Number: 1)

"BANK"

```
SELECT BANK
GP-A BK-1 NB-*
```

(Example: To transmit Group A, Bank: 1, Number: 1-8)

<< When "NUMBER", "BANK" or "GROUP" has been selected in [Step 4-5] >>

```
SAVING
GP-A BK-1 NB-*
```

(Example: To transmit Group A, Bank: 1, Number: 1-8)

"GROUP"

```
SELECT GROUP
GP-A BK-* NB-*
```

(Example: To transmit Group A, Bank: 1-8, Number: 1-8)

<< When "ALL" has been selected in [Step 4-5] >>

```
SAVING
ALL DATA DUMP
```

- * For information on how to select Groups (Banks, Numbers) see "[4] Patch Selection" (P.12).
- * When all Banks (numbers) are included, a "*" will be displayed at that position.

Once transmission of the data has completed, the following display will appear, and you return to the state before the bulk dump was executed (System mode).

```
SAVING
COMPLETED !!
```

<< When "ALL" has been selected in [Step 4-5] >>

The following will appear in the display, and the characters on the lower line will be blinking.

"ALL"

```
ALL DATA DUMP
Push WRITE Key !
```

(When transmitting the data for all patches.)

[Step 8-5] When the transfer has completed, press [ESCAPE] and return to the Play mode.

5

<< When "TEMP" has been selected in [Step 4-5] >>

The following will appear in the display, and the characters on the lower line will be blinking.

"TEMP"

```
TEMPORARY DUMP
Push WRITE Key !
```

[Step 7-5] Press [WRITE] and the data will be transmitted.

6. Data Reception and Verification (Bulk Load, Verify)

Through employing Roland Exclusive messages, you can receive (Bulk Load) the patch data from another GP-16 or a sequencer. In addition, the unit is equipped with a Verify function so you can check if the data has been correctly transferred.

< Concerning Verify >

The GP-16, in addition to the conventional bulk dump and bulk load functions, is also equipped with the Verify function. The Verify function checks to confirm whether or not the bulk-dumped data has been transmitted without error, and has been stored successfully.

Actually, the data that is bulk-dumped from the GP-16 is transmitted back to the originating GP-16 in a manner similar to a bulk load. Then, the newly received data is compared with the data existing internally in the originating GP-16 to check for any discrepancies. The result of the check appears on the display of the originator.

- With the Verify, the internal data of the GP-16 (originator) is not overwritten.

a. Connections with other devices

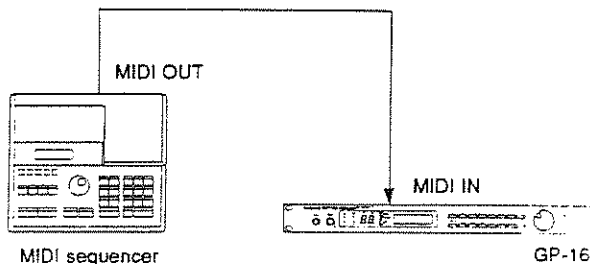
When you wish to carry out bulk loading (verification) of data, connections with other MIDI devices are made as follows:

<< Bulk Load (Verify) from another GP-16 >>

For information on how to make connections see "<<To transmit to another GP-16 >>" (P.48).

- Once the GP-16 on the receiving end has been set so it is ready to receive, begin the transmission.

<< Bulk Load (Verify) from a sequencer >>



- Refer to the Owner's Manual for your sequencer for details on operational procedures.

b. Procedure for receiving data

- Make sure the MIDI channels on both transmitter and receiver match. If the MIDI channels on both are not set to the same channel, the transmission cannot take place.

[Step 3-6] From the System mode, using **FUNCTION**, call up the following parameter (have it appear in the display).

```
6. DATA LOAD
MODE =
```

VALUE: LOAD/VERIFY

[Step 4-6] Using the **[α-Dial]**, set the mode.

[Step 5-6] Press **SYSTEM** and the unit enters the ready-to-receive state.

In the ready-to-receive (Load Ready) state, the following appears in the display. (The message shown below appears while MIDI data has not yet been transmitted.)

<< Data ready-to-receive state >>

"LOAD"

```
DATA LOAD READY
INPUT BULK DATA
```

"VERIFY"

```
VERIFY READY
INPUT BULK DATA
```

When data is received, the following appears in the display.

<< Data being received >>

"LOAD"

```
DATA LOAD READY
RECEIVING
```

"VERIFY"

```
TYPE=[BANK]
NOW VERIFY !
```

(Example: When receiving "BANK")

[Step 6-6]

<< When "LOAD" has been selected in [Step 4-6] >>

When reception of data has completed, the unit once again enters the ready-to-receive data state. If you are through with reception, press **ESCAPE** once to return to the System mode, and twice to return to the Play mode.

<< When "VERIFY" has been selected in [Step 4-6] >>

If no discrepancies have been found between the data on the receiving and transmitting ends, at the lower line there will be alternately displayed the type of data received (NUMBER, BANK, GROUP, ALL, TEMP) and

the Patch, and "Push ESCAPE Key!". Press **ESCAPE** once to return to the System mode, and twice to return to the Play mode.

```
VERIFY OK !
BANK [A-1-*]
```

(Example: when there were no errors in the data for the BANK "A-1-*")

7. MIDI Mapping (Program Change → Patch)

Here settings are made which determine the correspondence between Patches and individual Program Change Numbers. This correspondence is applied when an external MIDI device is used to select Patches on the GP-16.

You have complete freedom over the way the 128 Program Change Numbers are assigned to correspond with Patches.

* A foot controller connected to the GP-16 or the RRC IN connector cannot be used to make changes in the correspondence between Program Change Numbers and Patches, as carried out under MIDI Mapping.

[Step 3-7] From the System mode, use **FUNCTION** to call up the following parameter (have it appear in the display).

```
7. MIDI+PATCH SEL
P 1=G-A B-1 N-1
```

(1) (2) (3) (4)

The following will be displayed:

- (1) Program Change Number received
- (2) Group
- (3) Bank
- (4) Number

[Step 4-7] Using the **α-Dial**, specify the Program Change Number.

[Step 5-7] Select the Patch that will correspond to the Program Change Number in terms of **GROUP A/B**, Bank **1-8**, and Number **1-8**.

* For information on how to select Patches see "4 Patch Selection" (P.12).

Repeat steps [4-7] and [5-7] until you have the correspondence mapped as you wish.

Regarding the factory settings for the correspondence between Program Change Numbers and Patches, refer to the "1. Patch/Program Change Number Correspondence Chart" (P.56).

8. MIDI Mapping (Patch → Program Change)

Here settings are made which determine the correspondence between Patches and Program Change Numbers that will be used when a Program Change Number is to be transmitted at the time a patch is selected. The 128 patches and Program Change Numbers can be assigned to correspond in any way you like.

[Step 3-8] From the System mode use **FUNCTION** to call up the following parameter (have it appear in the display).

```
8. PATCH+MIDI SEL
G-A B-1 N-1=P 1
```

(2) (3) (4) (1)

The following will be displayed:

- (1) Program Change Number to be transmitted
- (2) Group
- (3) Bank
- (4) Number

[Step 4-8] Make selection in terms of **GROUP A/B**, Bank **1-8**, and Number **1-8**.

* For information on how to select Patches see "4 Patch Selection" (P.12).

[Step 5-8] Using the **α-Dial**, specify the Program Change Number that will correspond to the Patch.

Repeat steps [4-8] and [5-8] until you have the correspondence mapped as you wish.

Regarding the factory settings for the correspondence between Program Change Numbers and Patches, refer to the "1. Patch/Program Change Number Correspondence Chart" (P.56).

9. MIDI Filter

Accepts setting which determines whether or not, upon reception of Control Change messages (Control number: 7) from an external MIDI device, Master Volume will be under that control.

[Step 3-9] From the System mode, use **FUNCTION** to call up the following parameter (have it appear in the display).

```
9. MIDI FILTER
  CC#7
```

VALUE: RECEIVE/IGNORE

[Step 4-9] Using the **α-Dial**, make the setting.

RECEIVE: Data is received and changes in Master Volume are made.

IGNORE: Data received is ignored.

* When shipped, the unit was set to "RECEIVE".

10. Setting the Function of the Control Pedal

Here set is the output mode to be used by the GP-16 when the foot controller's "Control Pedal" is depressed (when the indicator lights).

[Step 3-10] From the System mode, using **FUNCTION**, call up the following parameter (have it appear in the display).

```
10. C. PEDAL MODE
  MODE =
```

VALUE: MUTE/BYPASS

[Step 4-10] Set the mode using the **α-Dial**.

MUTE: Signals are not output from all output jacks.

BYPASS: The original guitar sound input to the GP-16 is output from the specified output jacks.

* In order to make use of this function, you need to have an optionally available foot controller (FC-100 or FC-100MKII).

11. Cancellation of Output Select

Allows for a setting whereby settings for Output Select made for each patch are cancelled, thus providing output of effected sounds from both channels, regardless of previous settings. The function allows patches to be output from the same channel even though their output channel is different.

[Step 3-11] From the System mode, using **FUNCTION**, call up the following parameter (have it appear in the display).

```
11. OUT CONTROL
  OUT CH+
```

VALUE: ENABLE/DISABLE

[Step 4-11] Using the **α-Dial**, make the setting.

ENABLE: Output Select for each patch is enabled.

DISABLE: Output Select for each patch is disabled, so effected sounds are output from both channels.

12. LCD Contrast

Provides for adjustment of the display's contrast.

[Step 3-12] From the System mode, using **FUNCTION**, call up the following parameter (have it appear in the display).

```
12. LCD CONTRAST
  CONTRAST =
```

VALUE: 0-100

[Step 4-12] Adjust the display's contrast so that the displayed characters are easy to read, using the **α-Dial**.

2 Storing System Settings

Any changes made in the contents of System settings are only temporary; all settings will revert to those previously stored whenever power is turned off, or when you have performed "7. Escaping" (P.23).

If you wish to save the settings you have made in memory, carry out the following procedure:

[Step 1] Press **WRITE**.

```
Sure ? (Yes/No)
Y→WRITE N→ESCAPE
```

[Step 2] Press **WRITE**, and the settings will be stored in memory. To cancel the Write procedure, press **ESCAPE** and you will be returned to the state you were in before settings were made.

```
SYSTEM DATA
WRITING.....
```

After the message shown above has appeared in the display, you will be returned to the ordinary operating state (Play mode).

* Once the new settings have been stored, all settings previously stored for the System will automatically be erased.

Chapter Six Reference

1

Troubleshooting

The following provides information on what to do, or where to refer to when the GP-16 does not operate as expected.

◆ No sound produced

- Are you sure none of your cables are damaged?
- Have you checked all connections made with external devices?
 - "[1] Making Connections" (P. 9)
- Check that volume of amp, mixer, or other device is not turned down.
- Does the "Input Level Indicator" light when the guitar is played?
 - "[3] Adjustment of Input Level" (P. 12)
- Have you checked the patch to see if all settings are correct? (For example, Master Volume could be at "0")
- Is there an amplifier connected to the channel specified under "Output Select".
 - "c. Output Select" (P. 22)
 - "11. Cancellation of Output Select" (P. 53)
- Have you made sure the level hasn't remained low as a result of the expression pedal?

◆ Output channels cannot be used as expected.

- Has the setting for the patch been made properly?
 - "c. Output Select" (P. 22)
- Has Output Select been left in its cancelled state?
 - "11. Cancellation of Output Select" (P. 53)

◆ Patches cannot be selected from the panel.

- Are you sure you are in the PLAY mode?
 - Perform "7. Escaping" (P. 23) to get to the PLAY mode.

◆ Patches cannot be changed using a foot controller.

- Check that the RRC cable is connected securely.
- Are you sure that the foot controller is operating properly?
- With an FC-100 MKII, check if it is set to the "RRC Foot Pedal Mode".

- Set it to the "RRC Foot Pedal Mode" after referring to the FC-100MKII's Owner's Manual.

- Are you sure you are in the PLAY mode?
 - Perform "7. Escaping" (P. 23) to get to the PLAY mode.

◆ The foot controller's "Control pedal" doesn't operate as expected.

- Check that you have the Mode Selection switch on the foot controller set to "MODE 1".
 - "2. Settings related to the foot controller" (P. 15)
- Are the control pedals functions set properly?
 - "10. Setting the Function of the Control Pedal" (P. 53)

◆ The expression pedal doesn't operate as expected.

- Is the "Minimum Volume" for the expression pedal set to the lowest level?
- Are patch contents set properly?
 - "b. Expression Pedal" (P. 20)

◆ MIDI doesn't function

- Do the MIDI channels on the connected devices match?
 - "1. Setting the MIDI Receive Channel" (P. 47)
 - "2. Setting the MIDI Transmit Channel" (P. 47)

◆ Program Changes don't work as expected.

- Have checked that MIDI Mapping has been set properly?
 - "7. MIDI Mapping (Program Change → Patch)" (P. 52)
 - "8. MIDI Mapping (Patch → Program Change)" (P. 52)

◆ Master Volume cannot be controlled using Control Change messages.

- Is "MIDI Filter" set as it should be?
 - "9. MIDI Filter" (P. 53)

◆ The display character is not clearly be seen.

- Adjust the display's contrast.
 - "12. LCD Contrast" (P. 53)

2

Factory Settings

1. Patch/Program Change Number Correspondence Chart

When shipped, the unit is set so that Patches and Program Change Numbers have the correspondence shown below.

<Patch/Program Change Number Correspondence Chart>

		Number								
		1	2	3	4	5	6	7	8	
Group A	Bank	1	1	2	3	4	5	6	7	8
		2	9	10	11	12	13	14	15	16
		3	17	18	19	20	21	22	23	24
		4	25	26	27	28	29	30	31	32
		5	33	34	35	36	37	38	39	40
		6	41	42	43	44	45	46	47	48
		7	49	50	51	52	53	54	55	56
		8	57	58	59	60	61	62	63	64
Group B	Bank	1	65	66	67	68	69	70	71	72
		2	73	74	75	76	77	78	79	80
		3	81	82	83	84	85	86	87	88
		4	89	90	91	92	93	94	95	96
		5	97	98	99	100	101	102	103	104
		6	105	106	107	108	109	110	111	112
		7	113	114	115	116	117	118	119	120
		8	121	122	123	124	125	126	127	128

* When changes in the correspondence have been made as a result of "7. MIDI Mapping (Program Change → Patch)" (P.52), or "8. MIDI Mapping (Patch → Program Change)" (P.52), the correspondence between Patches and Program Change Numbers may no longer be as shown above. This should be taken into account in the following operations:

- When receiving Program Change messages.
- When transmitting Program Change messages.

2. Setting of Factory Preset Data

* The list gives the names of default settings.

<Group A>

1-1	Sparkling !	AMP	5-1	Valve Lead	AMP
1-2	The "Stack"	AMP	5-2	Mellow Tube	AMP
1-3	Scalding Lead	AMP	5-3	Skankin	AMP
1-4	Beauty Sths	AMP	5-4	Robot Metal	AMP
1-5	Incredible !	AMP	5-5	Overtones	AMP
1-6	Tube Singin	AMP	5-6	All That Jazz	AMP
1-7	DistortoSths	AMP	5-7	PickinNickin	AMP
1-8	Surfs Up Dude	AMP	5-8	Rad EO Stack	AMP
2-1	Mondo Stack	AMP	6-1	Mild OD Sths	AMP
2-2	Crispy Bright	AMP	6-2	Crunch Stack	AMP
2-3	Arpeggio Sths	AMP	6-3	Deep Flange	AMP
2-4	The "Standard"	AMP	6-4	Auto Funk	AMP
2-5	Evolving !	AMP	6-5	"11"	AMP
2-6	Eeeoww Lead !	AMP	6-6	Hyper Metal	AMP
2-7	Bri Flange	AMP	6-7	Duturnity !	AMP
2-8	Nuclear Gut	AMP	6-8	Cheese	AMP
3-1	Floyd Toes	AMP	7-1	Utopia !	DIR
3-2	Scooper EV-5	AMP	7-2	Auto Wah Wah	DIR
3-3	Wah Wah EV-5	AMP	7-3	Delayed Delay	DIR
3-4	Crs Depth EV-5	AMP	7-4	Leslies Strat	DIR
3-5	Wahed OD EV-5	AMP	7-5	Growl Octaves	DIR
3-6	StepPhase EV-5	AMP	7-6	Dry Piercing	DIR
3-7	HyperBass EV-5	AMP	7-7	Metal X-poser	DIR
3-8	Bva Blend EV-5	AMP	7-8	TearYoHeadOff	DIR
4-1	Mid Biaster	AMP	8-1	Clean Cutting	DIR
4-2	Chorus Lead	AMP	8-2	Grit Chords	DIR
4-3	CrispyCriter	AMP	8-3	Mild Mid	DIR
4-4	Fat+Chorused	AMP	8-4	Full Flanging	DIR
4-5	Wolf Stack	AMP	8-5	Mild Lead	DIR
4-6	Razor Stack	AMP	8-6	Metalizer Ld	DIR
4-7	Rock Backer	AMP	8-7	Chorus Stack	DIR
4-8	Mild Side	AMP	8-8	Bypass	DIR

<Group B>

1-1	Crystalline !	DIR	5-1	Iron Content	DIR
1-2	The "Sound"	DIR	5-2	Grit Backing	DIR
1-3	Rippin Lead !	DIR	5-3	E Acoustic	DIR
1-4	Panning Sths	DIR	5-4	Round Cuming	DIR
1-5	Incredible !	DIR	5-5	Super Lead !	DIR
1-6	Tube Lead	DIR	5-6	DistortoLead	DIR
1-7	Rock Sths OD	DIR	5-7	Smooth Tube	DIR
1-8	Surfin Dude	DIR	5-8	Mellow Lead	DIR
2-1	Awesome Stack	DIR	6-1	Delay the 5th	DIR
2-2	Ster. Sparkle	DIR	6-2	Funk-O-Matic	DIR
2-3	Arpeggio Sths	DIR	6-3	Clean Pickin	DIR
2-4	O-Drive Stack	DIR	6-4	3 Stack	DIR
2-5	Barber Pole	DIR	6-5	The Staircase	DIR
2-6	Eeeoww Lead !	DIR	6-6	Super Phlange	DIR
2-7	Beauty Flange	DIR	6-7	60's Trademark	DIR
2-8	Nuclear Gut	DIR	6-8	St. Metal Pan	DIR
3-1	Dive Bomb	DIR	7-1	Metal Stack	DIR
3-2	Hawaiian EV-5	DIR	7-2	M-Range Stack	DIR
3-3	Stereo WahWah	DIR	7-3	Scalding Stack	DIR
3-4	Rotating EV-5	DIR	7-4	Full Backing	DIR
3-5	Wah Distort.EV-5	DIR	7-5	Scorch Lead	DIR
3-6	Swell EV-5	DIR	7-6	Octave Lead+B	DIR
3-7	OD Grunge EV-5	DIR	7-7	Mild Stack	DIR
3-8	Pulsater EV-5	DIR	7-8	Dirty Backing	DIR
4-1	PS Bal. EV-5	DIR	8-1	Round Strat	DIR
4-2	Crs Rate EV-5	DIR	8-2	Fat Strat	DIR
4-3	Metal Drum EV-5	DIR	8-3	Classic Jazz	DIR
4-4	Rev Time EV-5	DIR	8-4	Echo Octaves	DIR
4-5	Vocoder Metal	DIR	8-5	Full Bodied	DIR
4-6	Dream State	DIR	8-6	Sweet Singin	DIR
4-7	Dry Skank	DIR	8-7	Bright Singin	DIR
4-8	Crazy Pan	DIR	8-8	Summer Wind	DIR

AMP = Patches designed to be amplified with a standard guitar amp.

DIR = Patches designed to be used with a stereo mixer, a power amp and full range speaker cabinets.

3. System Data Settings

MIDI Receive Channel	: Channel "1"
MIDI Transmit Channel	: Channel "1"
OMNI	: ON
Control Number	: Transmit Off
MIDI Mapping	: Refer to "1. Patch/Program Change Number Correspondence Chart"
MIDI Filter	: Reception enabled (RECEIVE)
Control Pedal	: Muted (MUTE)
Output Select	: Selection possible (ENABLE)
LCD Contrast	: 50

[Step 4-a] Press **WRITE**.

```

FACT Preset+A-1-1
Patch      +A-1-1
  
```

A preset patch is shown.
A destination patch is shown.

[Step 5-a] Using **α-Dial** select a patch from the Factory presets. Next, select a Destination patch by **GROUP A/B**, Bank buttons **1-8** and Number buttons **1-8**.

* For information on how to select a patch, see "[4] Patch Selection. (#P.12)"

```

FACT Preset+A-1-6
Patch      +A-8-8
  
```

(Example: When storing the Factory setting "A-1-6" in "A-8-8".)

[Step 6-a] Press **WRITE**.

```

Sure ? (Yes/No)
Y+WRITE N+ESCAPE
  
```

[Step 7-a] Press **WRITE** to store in memory. If you decide to cancel, press **ESCAPE**, and you will return to where you were in [Step 5-a].

```

One Preset
Load Complete !
  
```

When storing completed, and the display shows the message above, you will return to where you were in [Step 3-a]. If needed, repeat [Step 4-a] to [Step 7-a] to make the settings as you wish. When you wish to finish this procedure, press **ESCAPE** once to return in the ordinary use (the Play mode).

* Once new settings have been stored, all settings previously stored for that patch will be erased.

4. Data Initializing

You can get back each factory settings of the Patch or the System by the following procedures.

[Step 1] Turn the power switch "Off".
(With the amp's volume "Off" that is connected to the GP-16.)

[Step 2] Press the number buttons **6**, **7** and **8**.
While holding them, turn the power switch on.

When powering up, the display will show as follows:

```

Guitar Processor
Super GP Ver. *.*
  
```

When the display shows the following, data initializing is available.

```

1. Factory Preset
One Patch Load
  
```

a. Initializing one patch

This procedure replaces the setting of one patch with any of factory settings.

[Step 3-a] Using **FUNCTION** call up the parameter (have it appear in the display) shown below.

```

1. Factory Preset
One Patch Load
  
```

b. Initializing all patches

This procedure replaces all of 128 patches with all of factory settings.

- Once you follow this procedure below, all the current settings stored for patches will be erased.

[Step 3-b] Using **FUNCTION** call up the parameter (have it appear in the display) shown below.

```
2. Factory Preset
  All Patch Load
```

[Step 4-b] Press **WRITE**.

```
FCT Preset Load
Push WRITE Key !
```

[Step 5-b] Press **WRITE**.

```
Sure ? (Yes/No)
Y+WRITE N+ESCAPE
```

[Step 6-b] Press **WRITE** to store in memory. If you decide to cancel, press **ESCAPE**, and you will return to where you were in [Step 4-b].

```
Loading !
REMAINDER=[  ]
```

While the display shows the message above, with the figures counted down. When it is over, storing is completed. And you will return to where you were in [Step 3-b].

When you wish to finish this procedure, press **ESCAPE** once to return in the ordinary use (the Play mode).

c. Initializing the System data

This procedure initializes the "System data" (replaces the current settings for the System data with the factory settings).

[Step 3-c] Using **FUNCTION** call up the parameter (have it appear in the display) shown below.

```
3. System Data
  Initialize
```

[Step 4-c] Press **WRITE**.

```
System Data Init
Push WRITE Key !
```

[Step 5-c] Press **WRITE**.

```
Sure ? (Yes/No)
Y+WRITE N+ESCAPE
```

[Step 6-c] Press **WRITE** to store in memory. If you decide to cancel, press **ESCAPE**, and you will return to where you were in [Step 4-c].

```
Initializing....
.....
```

When the display shows the message above and storing completed, and you will return to where you were in [Step 3-c]. To press **ESCAPE** once leads you in the ordinary use (the Play mode).

- Once new settings have been stored, all settings previously stored for the System will be erased.

3

Supplied Charts

1. Parameter Charts

Parameter Chart: BLOCK A

GP-16 Parameter Table No.1

BLOCK A	PARAMETER		VALUE
1. COMPRESSOR	TONE ATTACK SUSTAIN LEVEL	Tone Attack Sustain Level	-50 to +50 0 to 100 0 to 100 0 to 100
2a. DISTORTION	TONE DISTORTION LEVEL	Tone Distortion Level	-50 to +50 0 to 100 0 to 100
2b. OVERDRIVE	TONE DRIVE TURBO LEVEL	Tone Drive Turbo Level	-50 to +50 0 to 100 ON/OFF 0 to 100
3. PICKING FILTER	SENS CUTOFF FREQ Q UP/DOWN	Sensitivity Cutoff Frequency Q Control Up/Down	0 to 100 0 to 100 1.0 to 5.0 UP/DOWN
4. STEP PHASER	RATE DEPTH MANUAL RESONANCE LFO STEP	Rate Depth Manual Resonance LFO Step	0 to 100 0 to 100 0 to 100 0 to 100 0 to 100
5. PARAMETRIC EQ	HI FREQ HI LEVEL H.M FREQ H. MID Q H.M LEV L.M FREQ L. MID Q L.M LEV LO FREQ LO LEVEL OUT LEV	High Frequency High Level High Middle Frequency High Middle Q control High Middle Level Low Middle Frequency Low Middle Q Control Low Middle Level Low Frequency Low Level Output Level	2 to 8 kHz -12 to +12 dB 500 Hz to 4 kHz 1.0 to 5.0 -12 to +12 dB 125 Hz to 1 kHz 1.0 to 5.0 -12 to +12 dB 60 to 250 Hz -12 to +12 dB -12 to +12 dB
6. NOISE SUPPRESSOR	SENS RELEASE LEVEL	Sensitivity Release Level	0 to 100 0 to 100 0 to 100

Parameter Chart: BLOCK B

GP-16 Parameter Table No.2

BLOCK B	PARAMETER		VALUE
1. SHORT DELAY	D.TIME E.LEVEL	Delay Time Effect Level	0 to 100 msec 0 to 100
2a. CHORUS	P.DELAY RATE DEPTH E.LEVEL	Pre Delay Rate Depth Effect Level	0 to 100 msec 0 to 100 0 to 100 0 to 100
2b. FLANGER	RATE DEPTH MANUAL RESONANCE	Rate Depth Manual Resonance	0 to 100 0 to 100 0 to 100 0 to 100
2c. PITCH SHIFTER	BAL CHROMATIC FINE F.BACK P.DELAY	Balance Chromatic Fine Feedback Pre Delay	E,D:0 to 100 -12 to +12 -50 to +50 0 to 100 0 to 100 msec
2d. SPACE-D	MODE	Mode	4 mode
3. AUTO PANPOT	RATE DEPTH MODE	Rate Depth Mode	0 to 100 0 to 100 PANNING/TREMOLO
4. TAP DELAY	C.TAP L.TAP R.TAP C.LEVEL L.LEVEL R.LEVEL F.BACK CUTOFF	Center Tap Left Tap Right Tap Center Level Left Level Right Level Feedback Cutoff Frequency	0 to 1200 msec 0 to 1200 msec 0 to 1200 msec 0 to 100 0 to 100 0 to 100 0 to 100 500 Hz to 8 kHz and THRU
5. REVERB	DECAY MODE CUTOFF P.DELAY E.LEVEL	Decay Mode Cutoff Frequency Pre Delay Effect Level	0.5 to 20 sec 10 mode 500 Hz to 8 kHz and THRU 0 to 100 msec 0 to 100
6. LINEOUT FILTER	PRESENCE TREBLE MIDDLE BASS	Presence Treble Middle Bass	0 to 100 0 to 100 0 to 100 0 to 100

Parameter Chart: EDIT

GP-16 Parameter Table No.3

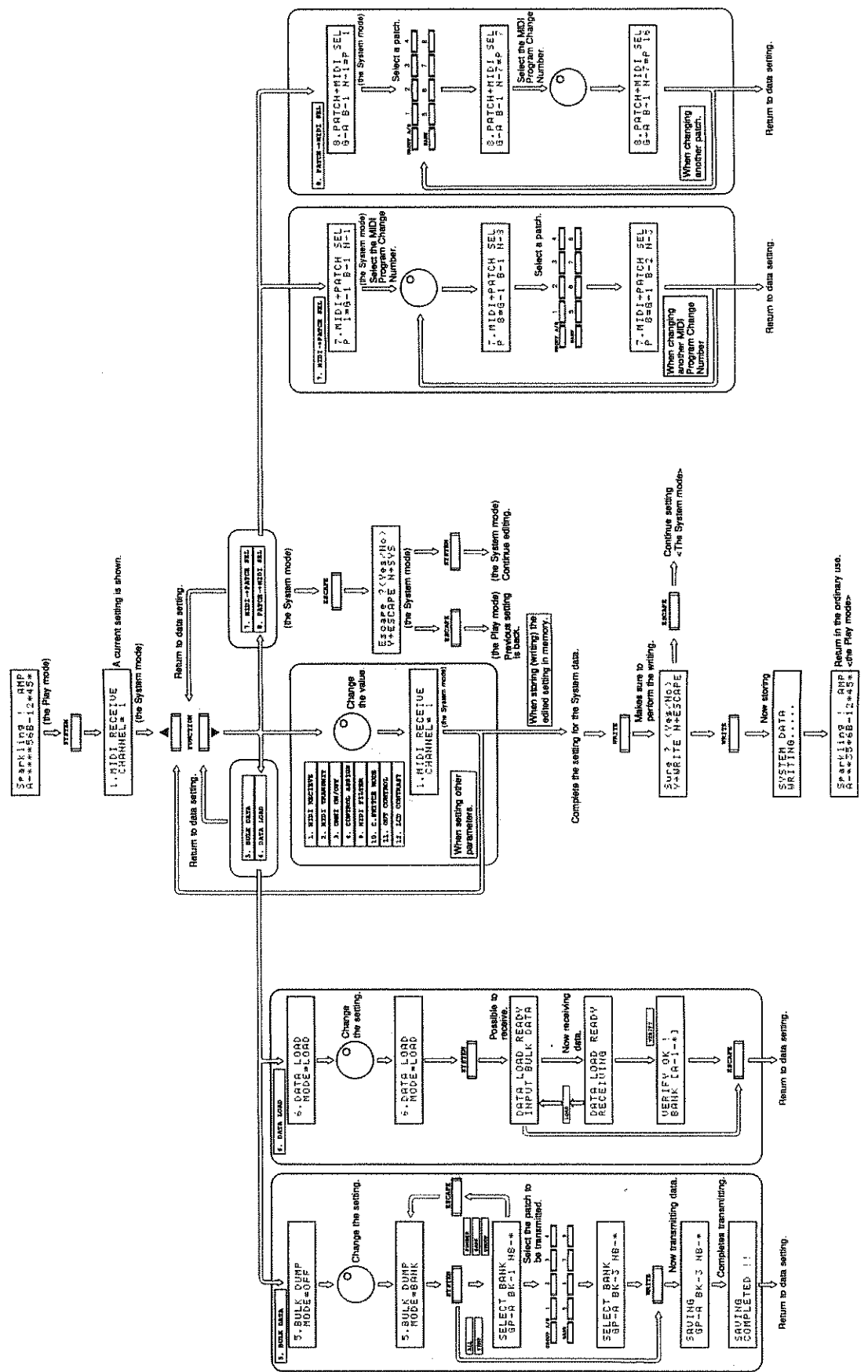
EDIT	PARAMETER		
SEQUENCE BLOCK-A			
SEQUENCE BLOCK-B			
BLOCK-A ON/OFF			
BLOCK-B ON/OFF			
BLOCK-A NO.2 SET			
BLOCK-B NO.2 SET			
SEQUENCE ORDER			
MASTER VOLUME	LEVEL	Level	0 to 100
EXP.ASSIGN(EV-5)			
EXP.DEVICE	DEVICE	Device	PEDAL/LFO
EXP.LFO RATE	LFO RATE	LFO Rate	0 to 100
EXP.MAX LEVEL			
EXP.MIN LEVEL			
OUTPUT SELECT	CHANNEL	Channel	1/2/1&2
NAME EDIT			16 letters

Parameter Chart: SYSTEM

GP-16 SYSTEM Parameter Table

SYSTEM	PARAMETER		
1 MIDI RECEIVE	CHANNEL	Channel	1 to 16
2 MIDI TRANSMIT	CHANNEL	Channel	1 to 16
3 OMNI ON/OFF	OMNI	OMNI	ON/OFF
4 CONTROL ASSIGN	NUMBER	Number	TRANSMIT OFF, 0-31 or 64-95
5 BULK DUMP	MODE	Mode	OFF, NUMBER, BANK GROUP, ALL or TEMP
6 DATA LOAD	MODE	Mode	LOAD /VERIFY
7 MIDI → PATCH SEL			
8 PATCH → MIDI SEL			
9 MIDI FILTER	CC#7	Control Change #7	RECEIVE /IGNORE
10 C. PEDAL MODE	MODE	Mode	MUTE /BYPASS
11 OUT CONTROL	OUT CH	Output Channel	ENABLE /DISABLE
12 LCD CONTRAST	CONTRAST	Contrast	0 to 100

<System Operation>



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
FDH	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
CMD	Command ID
[BODY]	Main data
F7H	End of exclusive

= MIDI status : FDH, F7H

An exclusive message must be flanked by a pair of status codes, starting with a Manufacturer ID immediately after FDH (MIDI version 1.0).

= Manufacturer ID : 41H

The Manufacturer ID identifies the manufacturer of a MIDI instrument that triggers an exclusive message. Value 41H represents Roland's Manufacturer ID.

= Device ID : DEV

The Device ID contains a unique value that identifies the individual device in the multiple implementation of 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 multiple basic channels.

= Model ID : MDL

The Model ID contains a value that uniquely 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 contents 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 for the transfer of a small amount of data. It sends out an exclusive message completely independent of a receiving device status.

Connection Diagram

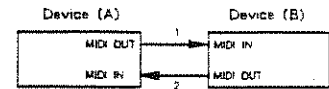


Connection at point 2 is essential for "Request data" procedures. (See Section 3.)

= Handshake transfer procedure (See Section 4 for details.)

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 two 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 all the way until it stops and is used when the messages are so short that answerbacks need not be checked.

For long messages, however, the receiving device must acquire each message in time with the transfer sequence, which inserts intervals of at least 20 milliseconds in between.

Types of Messages

Message	Command ID
Request data 1	RQ1 (11H)
Data set 1	DT1 (12H)

= Request data = 1 : RQ1 (11H)

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 will send out nothing.

Byte	Description
FDH	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

= Request data : RQD (41H)

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 RQD message, the remote device checks its memory for the data address and size which satisfy the request. If it finds them and is ready for communication, the device will transmit a "Data set (DAT)" message, which contains the requested data. Otherwise, it will return a "Rejection (RJC)" message.

Byte	Description
FDH	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
41H	Command ID
88H	Address MSB
⋮	⋮
	LSB
88H	Size MSB
⋮	⋮
	LSB
sum	Check sum
F7H	End of exclusive

- * The size of the requested data does not indicate the number of bytes that make up a "Data set (DAT)" 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 least significant 7 bits are zero when values for an address, size, and that checksum are summed.

= Data set : DAT (42H)

This message corresponds to the actual data transfer process. Because every byte in the data is assigned a unique address, the message can convey the starting address of one or more data as well as a series of data formatted in an address dependent order.

Although the MIDI standards inhibit non real time messages from interrupting an exclusive one, some devices support a "soft interrupt" mechanism for such interrupts. To maintain compatibility with such devices, Roland has limited the DAT to 256 bytes so that an excessively long message is sent out in separate segments.

Byte	Description
FDH	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
42H	Command ID
88H	Address MSB
⋮	⋮
	LSB
ddH	Data
⋮	⋮
sum	Check sum
F7H	End of exclusive

- * A DAT message is capable of providing only the valid data among those specified by an RQD or WSD 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 least significant 7 bits are zero when values for an address, size, and that checksum are summed.

= Acknowledge : ACK (43H)

This message is sent out when no error was detected on reception of a WSD, DAT, "End of data (EOD)", or some other message and a requested setup or action is complete. Unless it receives an ACK message, the device at the other end will not proceed to the next operation.

Byte	Description
FDH	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
43H	Command ID
F7H	End of exclusive

= End of data : EOD (45H)

This message is sent out to inform a remote device of the end of a message. Communication, however, will not come to an end unless the remote device returns an ACK message even though an EOD message was transmitted.

Byte	Description
FDH	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
45H	Command ID
F7H	End of exclusive

= Communications error : ERR (4EH)

This message warns the remote device of a communications fault encountered during message transmission due, for example, to a checksum error. An ERR message may be replaced with a "Rejection (RJC)" one, which terminates the current message transaction in midstream.

When it receives an ERR message, the sending device may either attempt to send out the last message a second time or terminate communication by sending out an RJC message.

Byte	Description
FDH	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
4EH	Command ID
F7H	End of exclusive

= Rejection : RJC (4FH)

This message is sent out when there is a need to terminate communication by overriding the current message. An RJC message will be triggered when :

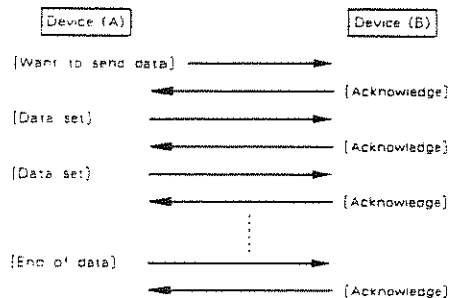
- a WSD or RQD message has specified an illegal data address or size.
- the device is not ready for communication.
- an illegal number of addresses or data has been detected.
- data transfer has been terminated by an operator.
- a communications error has occurred.

An ERR message may be sent out by a device on either side of the interface. Communication must be terminated immediately when either side triggers an ERR message.

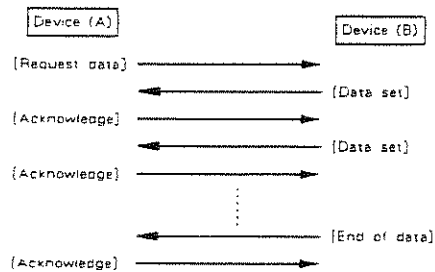
Byte	Description
FDH	Exclusive status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
4FH	Command ID
F7H	End of exclusive

= Example of Message Transactions

- Data transfer from device (A) to device (B).

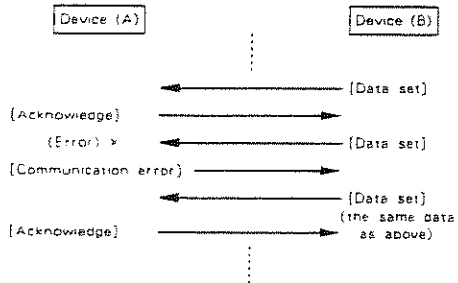


- Device (A) requests and receives data from device (B).

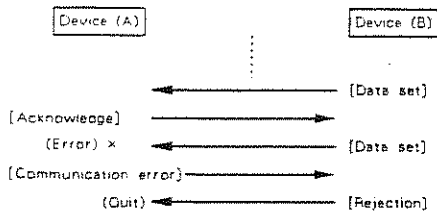


- Error occurs while device (A) is receiving data from device (B).

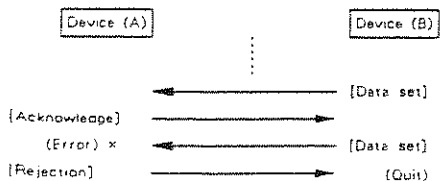
- 1) Data transfer from device (A) to device (B).



- 2) Device (B) rejects the data re-transmitted, and quits data transfer.



- 3) Device (A) immediately quits data transfer.



1 TRANSMITTED DATA**Control Change**

Status	Second	Third
BnH	ccH	vvH
n = MIDI Basic Channel	00H - FFH (0 - 16)	
cc = Controller Number	00H - 1FH (0 - 31)	40H - 5FH (64 - 95)
vv = Control Value	00H - 7FH (0 - 127)	

When the TRANSMIT OFF parameter of the System Mode No. 4 "CONTROL NUMBER" is off, the GP-16 converts messages received from external MIDI devices designated for General Purpose Controller 1 with Controller Number 16, into messages having another specified Controller Number for output.

Program Change

Status	Second
CnH	ppH
n = MIDI Basic Channel	0H - FFH (0 - 16)
pp = Program Number	00H - 7FH (0 - 127)

When the current patch is changed by the front panel switches, the GP-16 transmits MIDI messages with the Program Number corresponding to the new patch.

System Exclusive

Status	System Exclusive
FOH	EOX (End Of System Exclusive)
F7H	

The GP-16 transmits the parameter settings of a patch upon receiving a command from an external MIDI device, or when the GP-16 executes the Bulk Dump function. For more details, please refer to "3. EXCLUSIVE COMMUNICATIONS" and "Roland Exclusive Messages" in this manual.

2. RECOGNIZED RECEIVE DATA**Program Change**

Status	Second
CnH	ppH
n = MIDI Basic Channel	0H - FFH (0 - 16)
pp = Program Number	00H - 7FH (0 - 127)

The patch can be recalled according to the Program Number of the message received.

Control Change**Main Volume**

Status	Second	Third
BnH	07H	vvH
n = MIDI Basic Channel	0H - FFH (0 - 16)	
vv = Control Value	00H - 7FH (0 - 127)	

Setting the System Mode No. 9 "MIDI Filter" to "RECEIVE" allows the output level to be adjusted.

General Purpose Controller 1

Status	Second	Third
BnH	10H	vvH
n = MIDI Basic Channel	0H - FFH (0 - 16)	
vv = Control Value	00H - 7FH (0 - 127)	

Setting the EXPRESSION DEVICE parameter to "PEDAL" allows a specified parameter to be adjusted.

General Purpose Controller 5

Status	Second	Third
BnH	50H	vvH
n = MIDI Basic Channel	0H - FFH (0 - 16)	
vv = Control Value	00H - 3FH (0 - 63) : OFF 40H - 7FH (64 - 127) : ON	

When the System Mode No. 10 "CONTROL PEDAL" is set to "MUTE", the Output Mute function can be turned on or off. When that mode is set to "BYPASS", the output can be switched between being bypassed or effected.

System Exclusive

Status	System Exclusive
FOH	EOX (End Of System Exclusive)
F7H	

The GP-16's parameter settings of temporary data can be requested or edited by external MIDI devices.

For more details, please refer to "3. EXCLUSIVE COMMUNICATIONS" and "Roland Exclusive Messages" in this manual.

3 EXCLUSIVE COMMUNICATIONS

Via Exclusive Messages, the GP-16 can send or receive parameter settings data in conjunction with external MIDI devices.

In the memory section of the GP-16, a temporary area is provided as a buffer for operations monitoring and sound editing, along with an internal memory area for storing 128 patches and parameter settings. The buffer contains data memory for temporary storing a patch during performance or editing.

The Bulk Dump function allows all buffer data of the GP-16 to be bulk dumped. Also, internal memory data can be transferred by Temporary, Number, Bank, Group or All patches.

Use the Data Loading operation to prepare the GP-16 for accepting data from an external MIDI device. After receiving a System Exclusive Message, the GP-16 stores it in the buffer or in internal memory (data loaded to the buffer can be received even while the GP-16 is in Play Mode). In addition, the data verification operation allows the GP-16 to verify the received data to parameters of the internal patch, if it is verifiable.

Exclusive communications of the GP-16 are always conducted under the following One way communication format (shown as the Roland Exclusive Format, type IV). For more details, please refer to "Roland Exclusive Messages" in this manual.

Request (One way) RO1 11H

After receiving the Request Data message, the GP-16 applies the Data Set (DT1) to transmit such data in number (1 or more than 1) specified by the data size and with the specified Stan Address.

For the Device ID, numerals one unit lower than each MIDI Channel number are used.

The GP-16 does not transmit this message.

Byte	Description
FOH	Exclusive status
41H	Manufacturer ID (Roland)
0cH	Device ID : c = 0H - FH (1CH - 16CH)
2AH	Model ID (GP-16)
11H	Command ID (RQ1)
aaH	Address MSB
aaH	Address
aaH	Address LSB
ssH	Size MSB
ssH	Size
ssH	Size LSB
sum	Checksum
F7H	End of System Exclusive

Data set (One way) DT1 12H

Depending on the type of data to be received, the GP-16 accepts this message in the following cases :

(For internal memory data)
Data loading operation is required. When the GP-16 is ready to accept the data, it receives the transmitted MIDI information and stores it in the internal memory.

(For temporary buffer data)
The GP-16 receives and stores transmitted MIDI data both in the data ready condition and in the Play Mode.

This message can be transmitted in the following cases :

When commanded by an external MIDI device, the GP-16 transmits the specific data, and :

When the GP-16 is made to execute the Bulk Dump function, it transmits the parameter settings for each patch.

For the device ID, numerals one unit lower than each MIDI Channel number are used.

Byte	Description
FOH	Exclusive status
41H	Manufacturer ID (Roland)
0cH	Device ID : c = 0H - FH (1CH - 16CH)
2AH	Model ID (GP-16)
12H	Command ID (DT1)
aaH	Address MSB
aaH	Address
aaH	Address LSB
ddH	Data
:	:
:	:
sum	Checksum < Ignored if received by the GP-16 >
F7H	End of System Exclusive

4. ADDRESS MAPPING OF PARAMETERS

The address is displayed under 7-bit hexadecimal notation.

Address	MSB	LSB
7bits Hex	0A	EF
Binary	0000 abcc	0ddd eeee

< Description >

a : Non-verifiable / Verifiable (0 / 1)

bb : Bulk Dump Type (0 - 3)
(Number / Bank / Group / All)

c : Temporary Internal Memory (0 / 1)

ddd eeee : Patch Number (Group-Bank-Number)

0 (A - 1 - 1)	1 (A - 1 - 2)	2 (A - 2 - 1)	3 (A - 2 - 2)	4 (A - 3 - 1)	5 (A - 3 - 2)	6 (A - 3 - 3)	7 (A - 3 - 4)	8 (A - 4 - 1)	9 (A - 4 - 2)	10 (A - 4 - 3)	11 (A - 4 - 4)	12 (A - 5 - 1)	13 (A - 5 - 2)	14 (A - 5 - 3)	15 (A - 5 - 4)	16 (B - 1 - 1)	17 (B - 1 - 2)	18 (B - 1 - 3)	19 (B - 1 - 4)	20 (B - 2 - 1)	21 (B - 2 - 2)	22 (B - 2 - 3)	23 (B - 2 - 4)	24 (B - 3 - 1)	25 (B - 3 - 2)	26 (B - 3 - 3)	27 (B - 3 - 4)	28 (B - 4 - 1)	29 (B - 4 - 2)	30 (B - 4 - 3)	31 (B - 4 - 4)
-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	-----------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------	------------------

ccc eeee : Parameter Address

The actual memory location of each parameter is the Start Address figure of each block plus the Offset Address figure.

Temporary Area

This is the data area for parameter settings to be monitored and edited. When the "ESCAPE" key is pressed while in patch change or Edit Mode, the parameter settings of the patch currently displayed on the panel will be loaded into this area from the internal memory. According to the MSN data address, this area is divided into non-verifiable and verifiable section, each section containing data with the same parameter values. Normal data transmissions are handled in the non-verifiable area. When Bulk Dump operations are executed from the front panel of the GP-16, data in the verifiable area will be transmitted.

Start Address	Description
00 00 00H	Non-verifiable Temporary Data *Table 1 & 2
08 00 00H	Verifiable Temporary Data

Internal Memory Area

This is the data area for individual patch settings in the internal memory area. According to the MSN data address, this area is divided into non-verifiable and verifiable sectors, each sector containing patches with the same parameter values. Normal data transmissions are handled in the non-verifiable area. When Bulk Dump operations are executed from the front panel of the GP-16, the data in the verifiable area will be transmitted.

Start Address	Description
01 00 00H	Non-verifiable Internal Data (Number) A - 1 - 1 *Table 1 & 3
01 : 00H	
01 7F 00H	Non-verifiable Internal Data (Number) B - 8 - 8
03 00 00H	Non-verifiable Internal Data (Bank) A - 1 - 1
03 : 00H	
03 7F 00H	Non-verifiable Internal Data (Bank) B - 8 - 8
05 00 00H	Non-verifiable Internal Data (Group) A - 1 - 1
05 : 00H	
05 7F 00H	Non-verifiable Internal Data (Group) B - 8 - 8
07 00 00H	Non-verifiable Internal Data (All) A - 1 - 1
07 : 00H	
07 7F 00H	Non-verifiable Internal Data (All) B - 8 - 8
09 00 00H	Verifiable Internal Data (Number) A - 1 - 1
09 : 00H	
09 7F 00H	Verifiable Internal Data (Number) B - 8 - 8
0B 00 00H	Verifiable Internal Data (Bank) A - 1 - 1
0B : 00H	
0B 7F 00H	Verifiable Internal Data (Bank) B - 8 - 8

00 00 00H	Verifiable Internal Data (Group)	A - 1 - 1
00 : 00H		
00 7F 00H	Verifiable Internal Data (Group)	B - 8 - 8
0F 00 00H	Verifiable Internal Data (All)	A - 1 - 1
0F : 00H		
0F 7F 00H	Verifiable Internal Data (All)	B - 8 - 8

* Table 1

The binary notation in the left column of "Description" indicates the formation of each parameter, while the decimal notation at the right displays the range of parameter settings available. All data sent to the GP-16 must be within this range, or the desired effect will not be obtained.

*When data exceeding this range is included in the internal memory data area, such parameters are automatically set to the value of this range when the GP-16 is turned on.

Offset Address	Description
00H:0000	0aaaBIJOINT DATA GROUP-A * 0 4 (EFFECT 1-5)
01H:0000	0aaaBIJOINT DATA GROUP-A * 0 4 (EFFECT 1-5)
02H:0000	0aaaBIJOINT DATA GROUP-A * 0 4 (EFFECT 1-5)
03H:0000	0aaaBIJOINT DATA GROUP-A * 0 4 (EFFECT 1-5)
04H:0000	0aaaBIJOINT DATA GROUP-A * 0 4 (EFFECT 1-5)
05H:0000	0101BIJOINT DATA GROUP-A 5 (FIXED)
06H:0000	aaaaBIJOINT DATA GROUP-B ** 6 10 (EFFECT 1-5)
07H:0000	aaaaBIJOINT DATA GROUP-B ** 6 10 (EFFECT 1-5)
08H:0000	aaaaBIJOINT DATA GROUP-B ** 6 10 (EFFECT 1-5)
09H:0000	aaaaBIJOINT DATA GROUP-B ** 6 10 (EFFECT 1-5)
0AH:0000	aaaaBIJOINT DATA GROUP-B ** 6 10 (EFFECT 1-5)
0BH:0000	1011BIJOINT DATA GROUP-B 11 (FIXED)
0CH:0000	0aaaBI EFFECT ON/OFF MSR 0 3 (CHORUS/PLAYER PITCH SHIFTER/SPACE-D)
0DH:0000	0000BI EFFECT ON/OFF 0 127
0EH:0000	0000BI EFFECT ON/OFF 15R 0 127
	a : MODE SELECT Block A-2 0: DISTORTION / 1: OVERDRIVE
	x : Unusec
	b : EFFECT ON/OFF Block B-6 0 1 (OFF / ON)
	c : EFFECT ON/OFF Block B-5 0 1 (OFF / ON)
	d : EFFECT ON/OFF Block B-4 0 1 (OFF / ON)
	e : EFFECT ON/OFF Block B-3 0 1 (OFF / ON)
	f : EFFECT ON/OFF Block B-2 0 1 (OFF / ON)
	g : EFFECT ON/OFF Block B-1 0 1 (OFF / ON)
	h : EFFECT ON/OFF Block A-6 0 1 (OFF / ON)
	i : EFFECT ON/OFF Block A-5 0 1 (OFF / ON)
	j : EFFECT ON/OFF Block A-4 0 1 (OFF / ON)
	k : EFFECT ON/OFF Block A-3 0 1 (OFF / ON)
	l : EFFECT ON/OFF Block A-2 0 1 (OFF / ON)
	m : EFFECT ON/OFF Block A-1 0 1 (OFF / ON)
0FH:0aaa	aaaaBI COMPRESSOR TONE 0 - 100 (-50 - +50)
10H:0aaa	aaaaBI ATTACK 0 - 100
11H:0aaa	aaaaBI SUSTAIN 0 - 100
12H:0aaa	aaaaBI LEVEL 0 - 100
13H:0aaa	aaaaBI DISTORTION TONE 0 - 100 (-50 - +50)
14H:0aaa	aaaaBI DISTORTION 0 - 100
15H:0aaa	aaaaBI LEVEL 0 - 100
16H:0aaa	aaaaBI OVERDRIVE TONE 0 - 100 (-50 - +50)
17H:0aaa	aaaaBI DRIVE 0 - 100
18H:0000	000aBI TURBO 0 1 (OFF / ON)

```

19H 0aaa aaaaB LEVEL 0 100
-----
1AH 0aaa aaaaB PICKING FILTER SENS 0 100
-----
1BH 0aaa aaaaB CUTOFF FREQ 0 100
-----
1CH 0aaa aaaaB 0 0 40 (1.0 - 5.0)
-----
1DH 0000 000aB UP/DOWN 0 1 (UP / DOWN)
-----
1EH 0aaa aaaaB STEP PHASER RATE 0 100
-----
1FH 0aaa aaaaB DEPTH 0 100
-----
20H 0aaa aaaaB MANUAL 0 100
-----
21H 0aaa aaaaB RESONANCE 0 100
-----
22H 0aaa aaaaB LFO STEP 0 100
-----
23H 0aaa aaaaB PARAMETRIC EQ HI FREQ 0 100 (2K - 8kHz)
-----
24H 0aaa aaaaB HI LEVEL 0 48 (-12 - +12dB)
-----
25H 0aaa aaaaB H. W FREQ 0 100 (500 - 4kHz)
-----
26H 0aaa aaaaB H. MID Q 0 40 (1.0 - 5.0)
-----
27H 0aaa aaaaB H. W LEV 0 48 (-12 - +12dB)
-----
28H 0aaa aaaaB L. W FREQ 0 100 (125 - 1kHz)
-----
29H 0aaa aaaaB L. MID Q 0 40 (1.0 - 5.0)
-----
2AH 0aaa aaaaB L. W LEV 0 48 (-12 - +12dB)
-----
2BH 0aaa aaaaB LO FREQ 0 100 (60 - 250Hz)
-----
2CH 0aaa aaaaB LO LEVEL 0 48 (-12 - +12dB)
-----
2DH 0aaa aaaaB OUT LEV 0 48 (-12 - +12dB)
-----
2EH 0aaa aaaaB NOISE SUPPRESSOR SENS 0 100
-----
2FH 0aaa aaaaB RELEASE 0 100
-----
30H 0aaa aaaaB LEVEL 0 100
-----
31H 0aaa aaaaB SHORT DELAY D. TIME 0 100
-----
32H 0aaa aaaaB E. LEVEL 0 100
-----
33H 0aaa aaaaB CHORUS P. DELAY 0 100
-----
34H 0aaa aaaaB RATE 0 100
-----
35H 0aaa aaaaB DEPTH 0 100
-----
36H 0aaa aaaaB E. LEVEL 0 100
-----
37H 0aaa aaaaB FLANGER RATE 0 100
-----
38H 0aaa aaaaB DEPTH 0 100
-----
39H 0aaa aaaaB MANUAL 0 100
-----
3AH 0aaa aaaaB RESONANCE 0 100
-----
3BH 0000 000aB PITCH SHIFTER BAL MSB 0 200
3CH 0aaa aaaaB BAL LSB (E:0 D:100 - E:100 D:0)
-----
3DH 000a aaaaB CHROMATIC 0 24 (-12 - +12)
-----
3EH 0aaa aaaaB FINE 0 100 (-50 - +50)
-----
3FH 0aaa aaaaB F. BACK 0 100
-----
40H 0aaa aaaaB P. DELAY 0 100 (0 - 100ms)
-----
41H 0000 000aB SPACE D MODE 0 3 (1 - 4)
-----
42H 0aaa aaaaB AUTO PANPOT RATE 0 100
-----
43H 0aaa aaaaB DEPTH 0 100

```

```

44H 0000 000aB MONI 0 1 (PANPOT/TREMOLO)
-----
45H 0000 aaaaB TAP DELAY C. TAP MSB 0 1200
46H 0aaa aaaaB C. TAP LSB (0 - 1200ms)
-----
47H 0000 aaaaB L. TAP MSB 0 1200
48H 0aaa aaaaB L. TAP LSB (0 - 1200ms)
-----
49H 0000 aaaaB R. TAP MSB 0 1200
4AH 0aaa aaaaB R. TAP LSB (0 - 1200ms)
-----
4BH 0aaa aaaaB C. LEVEL 0 100
-----
4CH 0aaa aaaaB L. LEVEL 0 100
-----
4DH 0aaa aaaaB R. LEVEL 0 100
-----
4EH 0aaa aaaaB F. HAC 0 100
-----
4FH 0000 000aB CUTOFF MSB 0 200 (500Hz)
50H 0aaa aaaaB CUTOFF LSB 8kHz, THRU)
-----
51H 0000 aaaaB REVERB DECAY 0 45 (0.5 - 5ms)
4E 75 (5.5 - 20ms)
-----
52H 0000 aaaaB MODE 0 9
(ROOM1 / ROOM2 / ROOM3
HALL1 / HALL2 / HALL3
PLATE1 / PLATE2 / SPRING1
SPRING2)
-----
53H 0000 000aB CUTOFF MSB 0 200 (500Hz -
54H 0aaa aaaaB CUTOFF LSB 8kHz, THRU)
-----
55H 0aaa aaaaB P. DELAY 0 100 (0 - 100ms)
-----
56H 0aaa aaaaB E. LEVEL 0 100
-----
57H 0aaa aaaaB BILINEAR FILTER PRESENCE 0 100
-----
58H 0aaa aaaaB TREBLE 0 100
-----
59H 0aaa aaaaB MIDDLE 0 100
-----
5AH 0aaa aaaaB BASS 0 100
-----
5BH 0aaa aaaaB MASTER VOLUME 0 100
-----
5CH 0aaa aaaaB EXPRESSION ASSIGN 0 70, 127 *Table 4
-----
5DH 0000 000aB EXPRESSION DEVICE 0 1 (PEDAL / LFO)
-----
5EH 0aaa aaaaB LFO RATE 0 100
-----
5FH 0000 aaaaB EXPRESSION MAX LEVEL MSB 0 1200
60H 0aaa aaaaB EXPRESSION MAX LEVEL LSB (Depend on Expression assign)
-----
61H 0000 aaaaB EXPRESSION MIN LEVEL MSB 0 1200
62H 0aaa aaaaB EXPRESSION MIN LEVEL LSB (Depend on Expression assign)
-----
63H 0000 000aB OUTPUT CHANNEL 0 2
(channel1/channel2
channel) & 2)
-----
64H 0aaa aaaaB PATCH NAME 0
32 - 127 (ASCII CODE)
-----
65H 0aaa aaaaB PATCH NAME 15
-----
66H 0aaa aaaaB BLEND OF PATCH NAME 0 (FIXED)

```

* * * * * JOINT DATA parameters, which define the order of the twelve effects, should consist of figures comprising 0 to 4 for Address 06 - 04H, and 6 to 10 for Address 06 - 04H, without being mistakenly repeated.

<EXAMPLE>

With the GP 16 assigned to MIDI Receive Channel No. 1, transmit the following message to the GP-16 in order to recall the OUTPUT CHANNEL data of patch B-1-1 from the internal memory area data.

```
FG 41 00 2A 11 01 40 63 00 00 01 5B F7
```

* Table 2

Offset	Address	Description
	75H	0aaa aaaaB SOUND CHANGE REQUEST for Temporary Area 0 - 127 (FREE)

```

7FH 0000 0000H
: : DEMO (Ignored if received)
7FH 0000 0000H

```

*The SOUND CHANGE REQUEST command received by the GP-16 is handled only in the temporary data area.

When the GP-16 receives any data and this command at the end from external MIDI devices, the GP-16 will change its sound. If it is impossible to receive the SOUND CHANGE REQUEST command, the sound will change when the GP-16 is manually switched into Edit Mode. The SOUND CHANGE REQUEST command is included in bulk dump data.

◀ EXAMPLE ▶

When the GP-16 is set to MIDI Receive Channel No. 1 in the Play Mode, transmitting two messages to the GP-16 activates the GP-16 effect bypass function, turning all effects off.

```

FG 41 00 2A 12 00 00 0D 00 00 73 F7
FG 41 00 2A 12 00 00 75 00 0B F7

```

* Table 3

Offset	Address	Description
	7FH 0000 0000H	: : DEMO (Ignored if received)
	7FH 0000 0000H	

* Table 4

Offset	Address	Description
	5CH 0000 0000B	0 : COMPRESSOR
	0000 0001B	1 : TOXE
	0000 0002B	2 : ATTACK
	0000 0003B	3 : SUSTAIN
	0000 0004B	4 : LEVEL
	0000 0100B	5 : DISTORTION
	0000 0101B	6 : TOXE
	0000 0102B	7 : DISTORTION
	0000 0103B	8 : LEVEL
	0000 0110B	9 : OVERDRIVE
	0000 0111B	10 : TOXE
	0000 1000B	11 : DRIVE
	0000 1001B	12 : TURBO
	0000 1010B	13 : LEVEL
	0000 1011B	14 : PICKING FILTER
	0000 1100B	15 : SEVS
	0000 1101B	16 : CUTOFF FREQ
	0000 1102B	17 : Q
	0000 1110B	18 : UP/DOWN
	0000 1111B	19 : STEP PHASE
	0000 0000B	20 : RATE
	0000 0001B	21 : DEPTH
	0000 0010B	22 : MANUAL
	0000 0011B	23 : RESONANCE
	0000 0012B	24 : LFO STEP
	0000 0100B	25 : HI FREQ
	0000 0101B	26 : H LEVEL
	0000 0110B	27 : H.M FREQ
	0000 0111B	28 : H.MID Q
	0000 1000B	29 : H.M LEV
	0000 1001B	30 : L.M FREQ
	0000 1010B	31 : L.MID Q
	0000 1011B	32 : L.M LEV
	0000 1100B	33 : LO FREQ
	0000 1101B	34 : LO LEVEL
	0000 1110B	35 : DET LEV
	0000 1111B	36 : VOISE SUPPRESSOR
	0000 0000B	37 : SEVS
	0000 0001B	38 : RELEASE
	0000 0002B	39 : LEVEL
	0000 0010B	40 : SHORT DFLAY
	0000 0011B	41 : D. TIME
	0000 0100B	42 : E. LEVEL
	0000 0101B	43 : P. DELAY
	0000 0102B	44 : RATE
	0000 0110B	45 : DEPTH
	0000 0111B	46 : E. LEVEL
	0000 1000B	47 : FLANGER
	0000 1001B	48 : RATE
	0000 1002B	49 : DEPTH
	0000 1010B	50 : MANUAL
	0000 1011B	51 : RESONANCE
	0000 1100B	52 : BALANCE
	0000 1101B	53 : PITCH SHIFTER
	0000 1102B	54 : CHROMATIC
	0000 1110B	55 : FINE
	0000 1111B	56 : F. BACK
	0000 0000B	57 : P. DELAY
	0000 0001B	58 : SPACE D
	0000 0010B	59 : ALT D PASMOT
	0000 0011B	60 : RATE
	0000 0012B	61 : DEPTH

```

:0011 0100B 52 : MODE
:0011 0101B 53 : TAP DELAY
:0011 0102B 54 : C. TAP
:0011 0110B 55 : E. TAP
:0011 1000B 56 : C. LEVEL
:0011 1001B 57 : L. LEVEL
:0011 1010B 58 : R. LEVEL
:0011 1011B 59 : F. BACK
:0011 1100B 60 : CUTOFF
:0011 1101B 61 : REVERB
:0011 1102B 62 : DECAY
:0011 1110B 63 : MODE
:0011 1111B 64 : CUTOFF
:0100 0000B 65 : P. DELAY
:0100 0001B 66 : E. LEVEL
:0100 0010B 67 : PRESENCE
:0100 0011B 68 : FILTER
:0100 0100B 69 : TREBLE
:0100 0101B 70 : MIDDLE
:0100 0102B 71 : BASS
:0100 0110B 72 : MASTER VOLUME
:
:0111 1111B 127 : EXPRESSION ASSIGN OFF

```

Address Map

Address	Block	Sub Block	Reference
00-00-00	Non-Verifiable Area	Temporary Area	Table 1, Table 2
00-01-00	Area		Table 2
01-00-00	Internal Memory Area	Internal Data	Table 1, Table 3
02-00-00			
03-00-00			
04-00-00			
05-00-00			
06-00-00			
07-00-00			
08-00-00	Verifiable Area	Temporary Area	Table 1, Table 2
09-01-00			
09-00-00			
0A-00-00			
0B-00-00			
0C-00-00			
0D-00-00			
0E-00-00			
0F-00-00			

MIDI Implementation Chart

Function ...		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1 - 16 1 - 16	1 - 16 1 - 16	Memorized
Mode	Default Messages Altered	x x *****	OMNI ON/OFF x x	Memorized
Note Number	True Voice	x *****	x x	
Velocity	Note ON Note OFF	x x	x x	
After Touch	Key's Ch's	x x	x x	
Pitch Bender		x	x	
Control Change	7	x	* 1	Volume * 2 * 3 * 3 Mute or Bypass
	16	x	○	
	0 - 31	* 1	x	
	64 - 95	* 1	x	
	80	x	○	
Prog Change	True #	○ 0 - 127 *****	○ 0 - 127 0 - 127	
System Exclusive		○	○	parameter value
System Common	Song Pos Song Sel Tune	x x x	x x x	
System Real Time	Clock Commands	x x	x x	
Aux Message	Local ON/OFF All Notes OFF Active Sense Reset	x x x x	x x x x	
Notes		* 1 Either "○" or "x" can be selected manually and stored in memory. * 2 It is possible to designate a single parameter among various parameter settings for the Effect On message for adjustment of value. * 3 The GP-16 receives Control Change Message No.16, which is converted into Controller Number (0 - 31, 64 - 95) for output.		

Mode 1 : OMNI ON, POLY
Mode 3 : OMNI OFF, POLY

Mode 2 : OMNI ON, MONO
Mode 4 : OMNI OFF, MONO

○ : Yes
x : No

Specifications

- Patch Memories : 128
- A/D Convertor : 16-bit Linear (64 times over-sampling, MASH process)
- D/A Convertor : 16-bit Linear (4 times over-sampling)
- Sampling Frequency : 2.048 MHz (MASH process)
- Frequency Response : 10Hz - 16 kHz

[PARAMETERS]

- <A-1> Compressor
- <A-2a> Distortion
- <A-2b> Overdrive
- <A-3> Picking Filter
- <A-4> Step Phaser
- <A-5> Parametric Equalizer
- <A-6> Noise Suppressor
- <B-1 > Short Delay
- <B-2a> Chorus
- <B-2b> Flanger
- <B-2c> Pitch Shifter
- <B-2d> Space-D
- <B-3> Auto Panpot
- <B-4> Tap Delay
- <B-5> Reverb
- <B-6> Lineout Filter

[FRONT PANEL]

Input Jack
Input Level Control
Function Buttons: 2
EDIT Button
WRITE Button
SYSTEM Button
ESCAPE Button
GROUP Button
BANK Button
NUMBER Buttons: 8
 α -Dial
Power Switch

[DISPLAY]

16-letter, 2-line LCD (Back lit)
Patch Display (7-segment, 2-digit)

[INDICATORS]

Input Level
Group Indicator
Output Channel

[REAR PANEL]

Rear Input Jack
Channel 1, Output A Jack
Channel 1, Output B Jack
Channel 2, Output A Jack
Channel 2, Output B Jack
Balanced Output A Connector(XLR Type)
Balanced Output B Connector(XLR Type)
MIDI IN Connector
MIDI OUT Connector
MIDI THRU Connector
RRC IN Connector

[ELECTRICAL CHARACTERISTICS]

INPUT (Front, Rear)

Input Impedance : 1 M Ω

OUTPUT (Phone jacks, unbalanced)

Output Level : -20 dBm

Output Load Impedance : more than 10 k Ω

OUTPUT (XLR connectors, balanced)

Output Level : -10 dBm

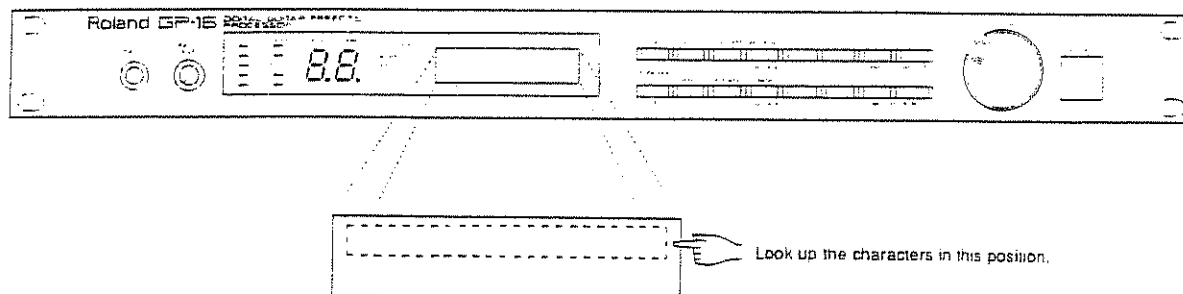
Output Load Impedance : 600 Ω

- Power Supply : AC120, 220 or 240V
- Power Consumption : 20W
- Dimensions : 482 (W) x 44 (H) x 300 (D) mm
19" (W) x 1"-3/4 (H) x 11"-13/16 (D)
- Weight : 3.6kg.
7 lb 15 oz
- Accessories : Owner's Manual
- Options : Foot Controller :
FC-100 MKII
Expression Pedal:
EV-5, EV-10 (BOSS)
Chromatic Tuner :
TU-12(BOSS), TU12S (BOSS)

- SPECIFICATIONS AND OR EXTERNAL APPEARANCE SUBJECT TO CHANGE WITHOUT NOTICE.

Display Index

The following index indicates the page on which is given the explanation for the characters shown in the display.



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GP - 16 BRANK CHART

NAME .	G-	B-	N-
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PROGRAM CHANGE NUMBER		A -	B -
SEQUENCE BLOCK-A	6	B-1 SHORT DELAY	D TIME msec
SEQUENCE BLOCK-B	6	()	E LEVEL
BLOCK-A ON/OFF		B-2a CHORUS	P.DELAY msec
BLOCK-B ON/OFF		()	RATE
BLOCK-A No.2 SET	DISTORTION/OVERDRIVE		DEPTH
BLOCK-B No.2 SET	CHO / FL / PS / SP-D		E LEVEL
SEQUENCE ORDER		B-2b FLANGER	RATE
A-1 COMPRESSOR	()	()	DEPTH
	TONE		MANUAL
	ATTACK		RESONANCE
	SUSTAIN		BAL
	LEVEL		E
A-2a DISTORTION	()	B-2c PITCH SHIFTER	D
	TONE	()	CHROMATIC
	DISTORTION		FINE
	LEVEL		F. BACK
A-2b OVERDRIVE	()		P. DELAY msec
	TONE		MODE
	DRIVE		1 / 2 / 3 / 4
	TURBO	B-2d SPACE-D	
	ON / OFF	()	RATE
	LEVEL		DEPTH
A-3 PICKING FILTER	()	B-3 AUTO PANPOT	
	SENS	()	MODE
	CUTOFF FREQ		PAN / TREM
	Q		C. TAP msec
	UP / DOWN		L. TAP msec
	UP / DOWN		R. TAP msec
A-4 STEP PHASER	()	B-4 TAP DELAY	
	RATE	()	C. LEVEL
	DEPTH		L. LEVEL
	MANUAL		R. LEVEL
	RESONANCE		F. BACK
	LFO STEP		CUTOFF Hz
A-5 PARAMETRIC EQ	()	B-5 REVERB	
	HI FREQ Hz	()	DECAY sec
	HI LEVEL dB		MODE
	H.M FREQ Hz		ROOM 1/2/3
	H. MID Q		HALE 1/2/3
	H.M LEVEL dB		PLATE 1/2
	L.M FREQ Hz		SPRING 1/2
	L. MID Q		CUTOFF Hz
	L.M LEVEL dB		PRE DELAY msec
	LO FREQ Hz		E LEVEL
	LO LEVEL dB	B-6 LINEOUT FILTER	
	OUT LEV dB	()	PRESENCE
A-6 NOISE SUPPRESSOR	()		TREBLE
	SENS		MIDDLE
	RELEASE		BASS
	LEVEL	MASTER VOLUME	

EXPRESSION PEDAL	ASSIGN	PEDAL / LFO	MAXLEVEL
	DEVICE		MIN LEVEL
	LFO RATE		CHANNEL
		OUTPUT SELECT	1 / 2 / 1&2

DATE :	PROGRAMMED BY
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GP - 16 BRANK CHART

NAME :				G- B- N-
PROGRAM CHANGE NUMBER :		A -	B -	
SEQUENCE BLOCK-A	6	B-1 SHORT DELAY	D.TIME msec	
SEQUENCE BLOCK-B	6	()	E.LEVEL	
BLOCK-A ON/OFF		B-2a CHORUS	P.DELAY msec	
BLOCK-B ON/OFF		()	RATE	
BLOCK-A No.2 SET	DISTORTION/OVERDRIVE		DEPTH	
BLOCK-B No.2 SET	CHO / FL / PS / SP-D		E.LEVEL	
SEQUENCE ORDER		B-2b FLANGER	RATE	
A-1 COMPRESSOR	TONE	()	DEPTH	
()	ATTACK		MANUAL	
	SUSTAIN		RESONANCE	
	LEVEL	B-2c PITCH SHIFTER	BAL E	
A-2a DISTORTION	TONE	()	D	
()	DISTORTION		CHROMATIC	
	LEVEL		FINE	
A-2b OVERDRIVE	TONE		F.BACK	
()	DRIVE	B-2d SPACE-D	P.DELAY msec	
	TURBO ON / OFF	()	MODE 1 / 2 / 3 / 4	
	LEVEL	B-3 AUTO PANPOT	RATE	
A-3 PICKING FILTER	SENS	()	DEPTH	
()	CUTOFF FREQ		MODE PAN / TREM	
	O	B-4 TAP DELAY	C.TAP msec	
	UP / DOWN UP / DOWN	()	L.TAP msec	
A-4 STEP PHASER	RATE		R.TAP msec	
()	DEPTH		C.LEVEL	
	MANUAL		L.LEVEL	
	RESONANCE		R.LEVEL	
	LFO STEP		F.BACK	
A-5 PARAMETRIC EQ	HI FREQ Hz	B-5 REVERB	DECAY sec	
()	HI LEVEL dB	()	MODE ROOM 1/2/3	
	H.M FREQ Hz		HALE 1/2/3	
	H.MID O		PLATE 1/2	
	H.M LEVEL dB		SPRING 1/2	
	L.M FREQ Hz		CUTOFF Hz	
	L.MID O		PRE DELAY msec	
	L.M LEVEL dB	B-6 LINEOUT FILTER	E.LEVEL	
	LO FREQ Hz	()	PRESENCE	
	LO LEVEL dB		TREBLE	
	OUT LEV dB		MIDDLE	
A-6 NOISE SUPPRESSOR	SENS		BASS	
()	RELEASE	MASTER VOLUME		
	LEVEL			

EXPRESSION PEDAL	ASSIGN		MAXLEVEL	
	DEVICE	PEDAL / LFO	MIN LEVEL	
	LFO RATE		OUTPUT SELECT	CHANNEL 1 / 2 / 1&2

DATE :	PROGRAMMED BY
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GP - 16 BRANK CHART

NAME	G-	E-	N-
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PROGRAM CHANGE NUMBER		A -	B -
SEQUENCE BLOCK-A	6	B-1 SHORT DELAY	D.TIME msec
SEQUENCE BLOCK-B	6	()	E.LEVEL
BLOCK-A ON/OFF		B-2a CHORUS	P.DELAY msec
BLOCK-B ON/OFF		()	RATE
BLOCK-A No.2 SET	DISTORTION/OVERDRIVE		DEPTH
BLOCK-B No.2 SET	CHO / FL / PS / SP-D		E.LEVEL
SEQUENCE ORDER		B-2b FLANGER	RATE
A-1 COMPRESSOR	()	()	DEPTH
	TONE		MANUAL
	ATTACK		RESONANCE
	SUSTAIN		BAL
	LEVEL		E
A-2a DISTORTION	()	B-2c PITCH SHIFTER	D
	TONE	()	CHROMATIC
	DISTORTION		FINE
	LEVEL		F.BACK
A-2b OVERDRIVE	()		P.DELAY msec
	TONE		MODE 1 / 2 / 3 / 4
	DRIVE	B-2d SPACE-D	()
	TURBO ON / OFF		RATE
	LEVEL	B-3 AUTO PANPOT	()
A-3 PICKING FILTER	()		DEPTH
	SENS		MODE PAN / TREM
	CUTOFF FREQ		C.TAP msec
	Q	B-4 TAP DELAY	()
	UP / DOWN UP / DOWN		L.TAP msec
A-4 STEP PHASER	()		R.TAP msec
	RATE		C.LEVEL
	DEPTH		L.LEVEL
	MANUAL		R.LEVEL
	RESONANCE		F.BACK
	LFO STEP		CUTOFF Hz
A-5 PARAMETRIC EQ	()	B-5 REVERB	()
	HI FREQ Hz		DECAY sec
	HI LEVEL dB		MODE ROOM 1/2/3
	H.M FREQ Hz		HALE 1/2/3
	H.MID Q		PLATE 1/2
	H.M LEVEL dB		SPRING 1/2
	L.M FREQ Hz		CUTOFF Hz
	L.MID Q		PRE DELAY msec
	L.M LEVEL dB		E.LEVEL
	LO FREQ Hz	B-6 LINEOUT FILTER	()
	LO LEVEL dB		PRESENCE
	OUT LEV dB		TREBLE
A-6 NOISE SUPPRESSOR	()		MIDDLE
	SENS		BASS
	RELEASE		MASTER VOLUME
	LEVEL		

EXPRESSION PEDAL	ASSIGN		MAXLEVEL
	DEVICE	PEDAL / LFO	MIN LEVEL
	LFO RATE		CHANNEL 1 / 2 / 1&2
		OUTPUT SELECT	

DATE	PROGRAMMED BY
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Apparatus containing Lithium batteries

ADVARSEL !

Lithiumbatteri. Eksplosionsfare.
Udskiftning må kun foretages af en sagkyndig,
og som beskrevet i servicemanual.

VARNING !

Lithiumbatteri. Explosionsrisk.
Får endast bytas av behörig servicetekniker.
Se instruktioner i servicemanualen.

ADVARSEL !

Lithiumbatteri. Fare for eksplosion.
Må bare skiftes av kvalifisert tekniker som
beskrevet i servicemanualen.

VAROITUS !

Lithiumparisto. Räjähdyksvaara.
Pariston saa vaihtaa ainoastaan
alan ammattimes.

Bescheinigung des Herstellers/Importeurs

Hiermit wird bescheinigt, daß der/die/das
DIGITAL GUITAR EFFECTS PROCESSOR GP-16
.....
(Gerät. Typ. Bezeichnung)

in Übereinstimmung mit den Bestimmungen der
.....
Amtsbl. Vfg 1046/1984
(Amtsblattverfügung)

funk-entstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

.....
Roland Corporation Osaka/Japan
.....

Name des Herstellers/Importeurs

RADIO AND TELEVISION INTERFERENCE

WARNING — This equipment has been verified to comply with the limits for a Class B computing device, pursuant to Subpart J of Part 15 of FCC rules. Operation with non-certified or non-verified equipment is likely to result in interference to radio and TV reception.

The equipment described in this manual generates and uses radio frequency energy. If it is not installed and used properly, that is, in strict accordance with our instructions, it may cause interference with radio and television reception. This equipment has been tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J, of Part 15, of FCC Rules. These rules are designed to provide reasonable protection against such a interference in a residential installation. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by the following measures:

- Disconnect other devices and their input/output cables one at a time. If the interference stops, it is caused by either the other device or its I/O cable. These devices usually require Roland designated shielded I/O cables. For Roland devices, you can obtain the proper shielded cable from your dealer. For non-Roland devices, contact the manufacturer or dealer for assistance.
- If your equipment does cause interference to radio or television reception, you can try to correct the interference by using one or more of the following measures:
 - Turn the TV or radio antenna until the interference stops.
 - Move the equipment to one side or the other of the TV or radio.
 - Move the equipment farther away from the TV or radio.
 - Plug the equipment into an outlet that is on a different circuit than the TV or radio. (That is, make certain the equipment and the radio or television set are on circuits controlled by different circuit breakers or fuses.)
 - Consider installing a rooftop television antenna with coaxial cable lead-in between the antenna and TV. If necessary, you should consult your dealer or an experienced radio/television technician for additional suggestions. You may find helpful the following booklet prepared by the Federal Communications Commission: "How to Identify and Resolve Radio — TV Interference Problems".

This booklet is available from the U.S. Government Printing Office, Washington, D.C., 20402. Stock No. 004-300-00345-4

CLASS B NOTICE

This digital apparatus does not exceed the Class B limits for radio noise emissions set out in the Radio Interference Regulations of the Canadian Department of Communications.

CLASSE B AVIS

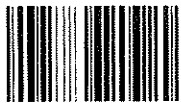
Cet appareil numérique ne dépasse pas les limites de la classe B au niveau des émissions de bruits radioélectriques fixés dans le Règlement des signaux parasites par le ministère canadien des Communications.

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