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 affected 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. Make sure to plug the equipment into an outlet that is easily accessible at all times.
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

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 Ø 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.
Before You Begin

We’d like to take a moment to thank you for purchasing the Boss ME-10 Guitar Multiplier Effects device. To fully realize the potential of the ME-10, and to ensure years of trouble-free service, please take the time to read this manual in its entirety.

Main Features

The Best of Analog and Digital
The ME-10 takes full advantage of the best qualities of analog and digital technologies. The compressor, overdrive/distortion sounds are analog and the pitch shifter, delay, stereo chorus and stereo reverb are digital effects.

Thirteen Different Effects
The ME-10 comes with thirteen of the effects that guitar players want most. In addition, you can store send/return settings in a patch and integrate other favorite effects into the signal chain of the ME-10.

Simple Editing Operations
The effects parameters are laid out for you on the top panel, making selection and editing easier.

Store up to 128 Effects Settings
You can store up to 128 different effects settings in the ME-10’s internal memory, and recall them instantly using the footswitch pedals.

Control Parameters in Real Time
You can control certain parameters in real time with an Expression Pedal (optional). This lets you alter effects sounds while you’re playing.

Chromatic Tuner with Special Guitar Mode
The ME-10 comes equipped with a chromatic tuner that can display the note and the guitar string you are tuning. When you’re in a live performance situation, this is great for a quick tune-up without unplugging.

Manual Mode For A “Pedal” Feel
Using Manual Mode, you can use the ME-10 pedals to switch effects on and off, as if you were using a series of compact ‘pedal’ effects. This also makes it easy to call up and edit effects settings while playing.

Long Delay and Reverb with no Cut-off
Delay and reverb will decay naturally instead of being abruptly cut off when you switch from one patch to another.

Using This Manual

We’ve divided this Owner’s Manual into five major sections that you should read in order. They tell you all you need to know about basic operations and features, and how to make the various settings. At the back is an index you can use when you run across unfamiliar words or concepts.

Summary

Section I: The Sounds
Basic operations, from making the connections to selecting effects sounds.

Section II: Changing the Settings
How to make or change settings for the effects sounds, external effects controller and save them in a patch. You’ll need to read this when you start to create your own effects sounds or use the various editing features.

Section III: Getting To Know Your Effects
You can make up new sounds by changing the settings of the parameters (basic elements of the sound) for each effect. Each parameter, and what effect it has on the sound, is explained in this section.

Section IV: MIDI
You’ll want to read this section to get the most out of the MIDI features.

Section V: Appendices
Factory preset settings, and what to do if things aren’t working as expected.
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Precautions for Use

In addition to the items listed under Safety Precautions on page 2, please read and adhere to the following:

[Power Supply]
- When making any connections with other devices, always turn off the power to all equipment first; this will help prevent damage or malfunction.
- Do not use this unit on the same power circuit with any device that will generate line noise, such as a motor or variable lighting system.

[Placement]
- Using the unit near power amplifiers (or other equipment containing large transformers) may induce hum.
- This unit may interfere with radio and television reception. Do not use this unit in the vicinity of such receivers.
- Do not expose this unit to temperature extremes (e.g. direct sunlight in an enclosed vehicle can deform or discolor the unit) or install it near devices that radiate heat.

[Maintenance]
- For everyday cleaning wipe the unit with a soft, dry cloth (or one that has been slightly dampened with water). To remove stubborn dirt, use a mild neutral detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.
- Never use benzene, thinners, alcohol or solvents of any kind, to avoid the risk of discoloration and/or deformation.

[Additional Precautions]
- Protect the unit from strong impact.
- Never strike or apply strong pressure to the display.
- A small amount of heat will radiate from the unit, and thus should be considered normal.
- Before using the unit in a foreign country, consult with qualified service personnel.

[Memory Backup]
- The unit contains a battery which maintains the contents of memory while the main power is off. The expected life of this battery is 5 years or more.
- When the battery becomes weak the following message will appear in the display: “b.Lo”. However, by that time the contents of memory may have already been lost.

b.Lo

- Please be aware that the contents of memory may at times be lost; when the unit is sent for repairs or when by some chance a malfunction has occurred. Important data should be stored BOSS BL-1 Bulk Librarian, sequencer, or written down on paper.
Part Names

Front Panel

Parameter Button
Effects Button
Bypass Button
Number Pedal
Bank Pedal

Front Panel: Control

Tuner Button
Tuning Guide Indicator
Display
Group Button
MIDI Button
Shuttle Dial
Play Button
Manual Button
Write Button
Rear Panel

- Input Jack
- Output Jack (L/MONO/R)
- Send Jack
- Return Jack
- Headphone Jack
- Expression Pedal 1 Jack
- Expression Pedal 2 Jack
- Tuner Remote Jack
- Manual Remote Jack
- Bypass Remote Jack
- MIDI Connector (IN/OUT)

Power Switch
Making the Connection

* When hooking things up, be sure the amp volume is turned down all the way and the amp is turned off. If you try to plug in with the amp on, you might get a voltage spike that can blow speakers or cause problems down the line.
* For mono output, use the OUTPUT L (MONO) jack.

** Guitar and Amp Connections **

- Electric Guitar
- External Effects Device
- Amplifier
- Headphones (Optional)

** Connecting Other Devices **

- Expression Pedal (Optional)
- Expression Pedal (Optional)
- Foot Switch (FS-5U; Optional)
- Foot Switch (FS-5U; Optional)
- Foot Switch (FS-5U; Optional)

* Set the volume knob to minimum on any Expression Pedal you might have connected to the EXP.PEDAL1 jack (Expression Pedals are sold separately). You can also set this minimum level in each patch. (See page 26.)
* A Pedal connected to EXP.PEDAL2 will let you control the minimum output level of the ME-10. (See page 34.)
* If you have a foot switch (FS-5U; optional) connected to any of the remote jacks, make sure the polarity switch is set as shown below.

Polarity Switch
■ Turning On the Power

When all external devices are properly connected, turn on the ME-10. The indicator light on the Play button should come on, indicating that you are in Play mode (where you can select patches).

※ You can turn on the amp (and set the volume) after all other devices have been turned on.
※ A protection circuit momentarily mutes the ME-10's output after power up.

■ Selecting Patches

〈(What is a Patch?)〉

You can store, and recall, up to 128 different combinations of effects sounds and their settings in the ME-10's memory. Each one of these stored combinations is called a "patch". The 128 patches on the ME-10 are divided into four Groups (1-4) of 32 patches each. Each group is further divided into eight Banks (1-8) of four Patches (1-4) each.

(GROUP 1)

<table>
<thead>
<tr>
<th>1</th>
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</table>

Every patch in the ME-10 is identified by its Group-Bank-Patch number. This is the number you'll need when you want to select (call up) a given patch while playing.

※ Each time power is turned on, you will find that the Patch that was selected the last time the unit was on will again be selected.
You can select a new patch whenever the Play button light is on. If the light is flashing or off, just press the Play button to enable patch selection.

1. Selecting a Group

Press the Group button on the front panel to select a Group number (1 to 4). Each press of the button advances the Group number by one. The currently selected Group number will be indicated in the LED display as shown at left.

![Group Display Image]

2. Selecting a Bank

Select a Bank using the Bank pedals. Each press of the [▲] pedal increases the Bank number by one, and each press of the [▼] pedal decreases it by one. The currently selected Bank number will be indicated in the LED display as shown at right.

![Bank Display Image]

3. Selecting a Number

The patch number is selected by pressing one of the Number pedals; just press the pedal corresponding to the number you want. The light on the pedal will come on to indicate that it has been selected.

![Number Pedals Image]
〈Call Up a Patch〉

There are two ways to select a patch; you can use whichever method suits your need.
* Method 1 is the factory default setting.

〈“Wait for a Number”: Method 1〉

Change the Group and Bank numbers as much as you want. The display may change, but the patch will not change until you depress a Number pedal. At that point, the effects corresponding to that Group-Bank-Number will kick in. If you want to switch between numbers within the same Group-Bank, just depress the appropriate Number pedal to go straight to the patch you want.
* If you change your mind about switching patches, press the [PLAY] button to go back to the patch you started with.

〈“Switch It Now”: Method 2〉

With this method, you switch immediately to whatever effect sound corresponds to the currently selected Group-Bank-Number combination. For example, if 1-1-1 is displayed and you depress the [▲] Bank pedal, you will immediately switch over to 1-2-1.

[Selecting the Call-Up Method]

Follow these directions to select the desired patch call-up method.
① Turn the ME-10 off.
② Hold down the [▲] pedal and turn the power on.
③ The currently selected call-up method will be indicated in the LED display; P-1 for the “Wait for a Number” method, and P-2 for the “Switch It Now” method. Gently rotate the shuttle dial to select the one you want.
④ Press [PLAY] to return to normal operation.

The selected method will now be active every time you turn on the ME-10.
Bypass On/Off

When all you want is the direct guitar sound (no effects) coming through the ME-10, turn on Bypass.

* The Bypass setting cannot be saved in a patch.

Turning Bypass On and Off

Every time you press the [BYPASS] button, you turn the function on or off.

Bypass Button

Bypass; Footswitch Operation

If you connect an optional FS-5U footswitch to the BYPASS REMOTE jack, you can turn Bypass on and off by depressing the footswitch. It works in the same way as pressing the Bypass button on the panel.

Whenever You Press [PLAY]...

You can also press [PLAY] to cancel Bypass and hear the effect sound of the currently selected patch.
Using the Tuner

The ME-10 comes with an on-board chromatic tuner that can be used for quick tune-ups without unplugging! The tuner is loaded with features like display by note name and string name, flat tuning, and adjustable output level.

1. Switching to Tuner Mode

To tune up, switch on the internal Tuner.

* When you first switch to Tuner mode, the tuning standard pitch will appear for about half a second in the LED display. You can start tuning right away, even while this is being displayed.
* To change the standard pitch, see "Changing the Standard Pitch" on page 18.
* To use a flat tuning mode, or switch between the different modes of display, see "Changing Modes" on page 18.
* To adjust the output level, see "Changing the Output Level" on page 19.

Switch to Tuner; Panel Selection

Every press of the [TUNER] button turns the Tuner on or off. When the Tuner is on, the Tuner light will also be on.

Using a Footswitch

If you have an optional FS-5U Footswitch connected to the TUNER REMOTE jack, you can turn the Tuner on and off using the footswitch. It works in the same way as pressing the Tuner button.

Whenever You Press [PLAY]...

You can also press [PLAY] to cancel the Tuner and hear the effect sound of the currently selected patch.
2. Tuning Display

The note names for the tuner are printed above the effects buttons (from Equalizer to Bypass). When you play in Tuner mode, the buttons will light to indicate the nearest note to the one you played. You'll also see the string name and note name in the display.

1) Panel Light Display

The name of the note you played will be displayed using the pedal lights running from the Equalizer to the Bypass button.

For example, the Phaser and Bypass buttons will light to indicate a D#. The button lights always show the absolute note names. So, if you are using flat tuning (or double flat tuning), these will be a half-step (or whole step) lower than the note name in the LED display.

2) LED Display

The note name and string name are shown in the LED display. The string name is on the left, and the next two positions give the note name.

* For pitches between notes, the following display indicates there's currently no input to the ME-10.

The display may look a little different than this, depending on the settings described in "Changing Modes" on page 18.

* String Name Display

The name of the open string (on which the played note occurs) will also be displayed. If the played note is more than 50 cents off exact pitch, the string name will flash in the LED display. The flashing stops when you tune the note to within 50 cents of the exact pitch.

Here's what the display will look like when you play a note:

You can disable the string name display by changing the mode setting. You may want to do this, for example, if you are using a non-standard tuning. See "Changing Modes" on page 18 for how to do this.
• Note Display
The input note name will be the same as that indicated by the effect button lights. The note name will display as follows:

<table>
<thead>
<tr>
<th>Note</th>
<th>Note Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>C#</td>
<td>C#</td>
</tr>
<tr>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td>D#</td>
<td>D#</td>
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<td>E</td>
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<td>A</td>
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<tr>
<td>A#</td>
<td>A#</td>
</tr>
<tr>
<td>B</td>
<td>B</td>
</tr>
</tbody>
</table>

• Tuning Guide Display
When the input note is within 50 cents of the nearest reference note, the triangular tuning guide lights will indicate how flat or sharp it is. Watch these triangles and tune the string until only the central indicator lights.

* A half-step consists of 100 cents.

![Tuned](image)

Too Low

Too High

3. How to Tune

1. Play the open string you want to tune.
   The note closest to the one you played will be indicated in the LED display and by the button lights. The open string name will also be shown in the LED display.

2. Tune the string until the string name stops flashing, which means you’re within 50 cents of the correct pitch.

<table>
<thead>
<tr>
<th>STRING</th>
<th>NOTE NAME</th>
<th>FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st String Open</td>
<td>1E</td>
<td>329.6Hz</td>
</tr>
<tr>
<td>2nd String Open</td>
<td>2B</td>
<td>246.9Hz</td>
</tr>
<tr>
<td>3rd String Open</td>
<td>3G</td>
<td>196.0Hz</td>
</tr>
<tr>
<td>4th String Open</td>
<td>4D</td>
<td>146.8Hz</td>
</tr>
<tr>
<td>5th String Open</td>
<td>5A</td>
<td>110.0Hz</td>
</tr>
<tr>
<td>6th String Open</td>
<td>6E</td>
<td>82.4Hz</td>
</tr>
</tbody>
</table>

3. Now you can use the tuning guide lights to tune up until only the central indicator lights.

Repeat Steps 1 through 3 until all strings are tuned up.

* If your guitar has a tremolo arm, you know that tuning one string by an appreciable amount can cause the others to go slightly out of tune. So you’ll have to get your guitar roughly in tune to begin with, tuning each string only until the string name stops flashing. Then you can go back and tune each string precisely.
4. Customizing the Tuner

You can make settings that will customize the tuner to suit your needs. The settings include:

1) changing the standard pitch
2) changing modes
3) changing the output level

The settings are made in Tuner mode.

✦ Whenever You Press [PLAY]...
Press [PLAY] to store the settings and return to play mode.

1) Changing the Standard Pitch

The LED display will show the standard pitch. If you need to, you can change this anywhere from 435 Hz to 445 Hz. The new standard pitch will be stored until you change it again.

✦ The factory preset is A=440 Hz.
✦ When you enter tuner mode, the standard pitch will be displayed for about a half second.

1. Check to see that you are in Tuner mode (the Tuner button light will be on).
2. Press [PITCH (ASSIGN)]. The current standard pitch will be shown in the LED display.
   ✦ If all you want to do is check the current standard pitch, press [PITCH (ASSIGN)] or [TUNER] when you want to return to Tuner mode.
3. Using the shuttle dial, change the standard pitch.
4. Press [PITCH (ASSIGN)] or [TUNER] to store the setting and return to Tuner mode.

2) Changing Modes

You can switch between regular and flat tuning, and string name display on/off. The settings will be stored until you change them again.

(Flat (Double Flat) Tuning)

Flat tuning is a semi-tone below regular tuning. The LED display will still show the notes as if it were regular tuning, but the absolute pitch will be a half-step lower. This makes it easier to tune and play in flat keys. Double flat tuning is the same thing only a whole tone lower than absolute pitch.

✦ The lights on the effects buttons still indicate absolute pitch. In flat (double flat) tuning, notes will be a semi-tone (whole tone) lower than the note name in the LED display.
✦ The factory default is String Name Display On/Regular Tuning.
✦ For pitches between notes, the mode settings will be shown in the LED display.
3) Changing the Output Level

The output level in Tuner mode is shown in the LED display. If you want to, you can change this level so that you can hear the guitar while tuning (in Tuner mode, only the direct guitar sound is output). The setting will be stored until the next time you change it.

* Factory default is 0 (Mute).

① Check to see that you’re in Tuner mode (the Tuner button light will be on).

② Press [LEVEL (MIN)]. The present output level setting will be displayed.
   * If all you want to do is check the current output level, press [LEVEL (MIN)] or [TUNER] when you want to return to Tuner mode.

③ Using the shuttle dial, change the setting.

④ Press [LEVEL (MIN)] or [TUNER] to store the setting and return to Tuner mode.
Section II

Changing the Settings
With just a few easy operations you can modify the effects settings in any way you like, and store the changes in memory. This section explains how to do that.

The ME-10 includes the following effects:

- **Compressor**
- **Overdrive/Distortion**
- **Noise Suppressor**
- Effects Send/Return #1
- **Equalizer #2**
- **Phaser/Flanger/Pitch Shifter #3**
- **Delay**
- **Stereo Chorus**
- **Stereo Reverb**
- **Guitar Amp Simulator**

*1: This is an on/off control for external devices connected to the Send/Return jack.
*2: There is a setting here that will let you use an Expression Pedal (connected to the EXP. PEDAL jack) as a wah-wah pedal.
*3: You can use only one of these three effects in any one patch.

The overall effect sound depends on which effects are turned on, and what the parameter settings are. (Parameters are the basic variable elements of an effect that control what it sounds like).

* If you turn off the power or return to Play mode in the middle of changing settings, all the changes you have made up to that point will be lost. You have to save new changes in a patch, as described in "Write Operation" on page 29.

### Making Effect Settings

#### 1. Selecting the Patch to be Modified

1. From the Play mode, select the patch you want to modify. (We discussed how to do that on page 11.)

* If the Play light is not already on, push the Play button at this time.

* A quick way to make up a new effects sound is to first select a patch that already sounds similar to what you want to create. That way, if you modify the patch but don't save it, the patch you started with is still stored in patch memory and you haven't lost anything.

After the patch has been selected, you can modify the parameters in any order you like. Here we will summarize the explanations and directions for making these modifications.
2. Effect On/Off

This turns each effect on or off. You can easily check to see whether an effect is on or off at any given moment by looking at the light on the effect button: if the effect is on, the light is on.

① Just press the effect button you want to turn it on and off.

* When you make any changes to a patch, the Play button light will go out to indicate that the patch is no longer the same as the one stored in memory.
* If no parameters are selected and you turn an effect on or off, you will see a "---" in the LED display.

The new setting is only temporary, however, and is lost if you turn the power off or press the Play button to return to Play mode. You have to save any changes you make in a patch using the "Write Operation" described on page 29.

(Selecting Phaser/Flanger/Pitch Shifter)
You can only use one of these three effects in any one patch. Press the button for the one you want and its light will come on to indicate the effect is on. If you want to turn all three effects off, press the button that is currently lit to turn it off.
3. Setting the Parameters

Each effect has its own special parameters, and by changing these values you can alter the effect and create new sounds. The parameters are indicated on the panel buttons.

① Select the parameter you want to change by pressing the parameter button. The button will light and the current setting for that parameter will be shown in the LED display.

* When you make any changes to a patch, the Play button light will go out to indicate that the patch is no longer the same as the one stored in memory.
* You can modify the parameters of an effect that is currently turned off. When you press the parameter button the current setting will flash in the LED display to indicate that the effect is off.
* To find out what each parameter does, see Section III: The Effects.

② Modify the setting with the shuttle dial.

Rotate the shuttle dial clockwise to increase the values, and counter-clockwise to decrease them. There are four different display speeds; the further you rotate the dial, the faster the numbers change.

* Take it easy with the shuttle dial and it will continue to work well for you.

Repeat Steps ① and ② to modify all the parameters you want.

The new parameters settings are only temporary, however, and are lost if you turn the power off or press the Play button to return to Play mode. You have to save any changes you make in a patch using the "Write Operation" described on page 29.
4. Other Parameters Stored in a Patch

In addition to the parameters that control the sound of the effects, the following can also be stored in memory as part of a patch.

1) Effect Send/Return (page 25)
This determines whether signals will pass through an external device connected to the Send/Return jack.

2) Expression Pedal settings (page 26)
When you have an Expression Pedal connected to the ME-10, you can use it for real time control over some parameters. This setting determines what parameter will be controlled by the pedal.

3) Master Level (page 27)
This is the final adjustment to the output level at the Output jacks.

1) Effect Send/Return

This inserts the external device connected to the Send/Return jack into the signal path (between the Noise Suppressor and Equalizer). Whether the external device is in the path or not can be stored as part of a patch along with the settings for the ME-10’s internal sounds.

The Effect Send/Return setting is indicated by the light on the button: if the light is on, the external effect is in the signal path.

* Be sure the external effect is turned on!
* See “Making the Connection” on page 10 for how to connect external devices.

It’s an easy, one-step operation:

1. Press the button to take the effect in and out of the signal path.

* When you make any changes to a patch, the Play button light will go out to indicate that the patch is no longer the same as the one stored in memory.
* If no parameters are selected and you turn an effect on or off, you will see a “---” in the LED display.

The new settings are only temporary, however, and are lost if you turn the power off or press the Play button to return to Play mode. You have to save any changes you make in a patch by using the “Write Operation” described on page 29.
2) Expression Pedal Settings

If you have an Expression Pedal connected to the EXP. PEDAL 1 jack, you can change the value of the selected parameter “on the fly”, by depressing the pedal as you play. These settings determine which parameter will be controlled, and the minimum and maximum values of the parameter range.

These last two settings determine what the value of that parameter will be when the pedal is all the way up (minimum) and when it’s all the way down (maximum). Graphically, this would look like the following:

![Variable Range](image)

MIN
MAX

Possible Range to edit

* The new values for the pedal position take effect the instant you switch to a patch that includes these parameters.

* See Section III “The Effects” (page 35) for more about what parameters can be assigned in this way.

1) Assign which parameter is to be controlled by the Pedal.
Press the [ASSIGN] button, and the light for the parameter which is currently assigned to the Pedal will flash. Use the shuttle dial to assign a new parameter to be controlled.

* If no parameter is currently assigned, the LED display will read “OFF”. Moving the shuttle dial changes this to ON and the lights for the parameters which can be assigned to the Pedal will flash in order.

* Set this to OFF for patches in which the Expression Pedal is not to be used. Otherwise, when you switch to a patch you may wind up controlling a parameter you didn’t intend to.

* With the Expression Pedal connected, when you are modifying a parameter value (selected by Assign), the setting value and “-A-” are alternately shown in the display to indicate what is being controlled by the pedal. At this point, you are actually changing the setting value, although you will not hear the sound itself change.

2) Set variation range (min. and max.) of the parameter being controlled by the Pedal.
Press [MIN] to display the current minimum value and use the shuttle dial to set it.
Press [MAX] to display the current maximum value and use the shuttle dial to set it.
3) Master Level

This adjusts the overall output level of the Output jacks on the ME-10.

When all effects are off, setting the Master Level to 70 makes the output level the same as the input level.

* The Master Level setting can be controlled with the Expression Pedal as well. Check out page 26, "Expression Pedal Settings", to see how this is done.

The Master Level is set the same way as the other parameters.

① Press the Master Level button. The light will come on, and the present setting will be displayed.

② Use the shuttle dial to modify the value.

* The shuttle dial will work best if you rotate it gently rather than snapping it around.

* After this, any changes you make to this parameter could conceivably change the minimum and maximum values. Therefore, the last thing you should do when modifying a parameter that is controlled by the Expression Pedal is to check the variation range.

* You can set a minimum value which is larger than the maximum! In this case, the parameter value becomes smaller the further down you depress the Pedal (i.e., it works in the opposite way).

* If there is no Expression pedal hooked up, all parameters are controlled exclusively by the settings.

These new settings and assignments are temporary, and if you turn the power off or interrupt the operations by going back to Play mode, they are lost. You have to save your modified settings in a patch with the "Write Operation", as described on page 29.
5. Canceling a Setting

If you just want to return to Play mode in the middle of changing settings without saving anything in memory, just press [PLAY], or select a new patch.

(Pressing [PLAY])

1 Press [PLAY].
The Play button light will flash, and the current patch will be shown in the LED display and Number pedal lights.

* The Play button flashes to warn you that any setting changes you have made will be lost if you go through with this operation. To continue making settings, press the button for the next parameter you want to change.

* If all you wanted to do was display the settings and you didn't change anything, pressing [PLAY] returns you immediately to Play mode and you can skip åA.

The Play button will stop flashing and remain lit, indicating that you are now in Play mode. All the changes you made to the settings are lost and the original values returned.

(Selecting a Patch)

1 Push either a Number pedal, Bank pedal or the Group button.
The Play button light will start to flash, and the LED display and Number pedal lights will indicate the current patch.

* The Play button flashes to warn you that, at this point, any setting changes you have made will be lost if you carry out step 2. If you don't want this to happen yet, press a parameter button.

2 Select a new patch.
As soon as you switch to this new patch, you will be in Play mode again. All the changes you made to the settings are lost and they revert to their original values.

See “Selecting a Patch” on page 11 for more information about selecting patches.
The Write Operation

Let's say you've made some changes to the settings of a patch and you'd like to keep them. You can save the changes in a patch, either by overwriting the existing patch with the new settings, or saving it in a different patch (leaving the original unaltered). Or you can copy the changes to a Manual mode setting. Here's how.

Saving the changes.
1. Press [WRITE].
   The display and pedal lights will flash, showing the current patch.
   * To cancel the write operation, press any one of the parameter buttons. You'll be returned to the parameter setting mode.

   (If you want to overwrite the original patch)
   If you do not specify a new patch at this point, you will erase the original patch and replace it with the new one.

   2. Press [WRITE] again. The patch is now stored in memory. After this operation is finished, the Play button light will come on, and you are in normal Play mode again.

   (If you want to save the original patch)
   3. Select a destination patch.
      When you select a save destination patch, the display and pedal lights will change to show the settings of that patch.
      See "Selecting a Patch" on page 11 if you need a refresher.

   3. Press [WRITE]. The patch you just finished modifying will be saved in the selected patch number. When that's done, the Play button light will come on and you will be in Play mode with the new patch already selected.

   (Saving to a Manual Mode Setting)
   The patch you modified can also be saved to a Manual mode setting (see page 34 for more about Manual mode).

   2. Press [MANUAL].
      You'll see 0-0 in the display, indicating that the copy point is a Manual mode setting.
      * If you change your mind after pressing [MANUAL], just select a new patch to copy to that patch instead.

      The patch is now saved to a Manual setting. After that's done, the Manual button light will come on, and you will be in Manual mode.
Copying

So far we've talked about saving a modified patch. But suppose you just want to copy a patch the way it is? The following explains how to do just that. This operation can also be used to copy a patch to a Manual mode setting, or vice versa.

(Copying a Patch to a Different Patch Number)

1. In Play mode (Play button light is on), select the patch to copy.
   * See page 11 if you need a refresher on selecting patches.
   * If the light is not already on, press [PLAY] to turn it on.

2. Press [WRITE]. The display and pedal lights will reflect the settings for the “copy from” patch you just selected.

3. Select the patch number to copy to.
   * To cancel the Copy operation at this point, press [PLAY]. You'll be returned to Play mode.

   The “copy from” patch will be copied to the patch selected in 3. The Play button light will come on and you'll be returned to Play mode with the “new” patch selected.

(Copying a Patch to a Manual Setting)

1. In Play mode (Play button light is on), select the patch to copy.
   * See page 11 if you need a refresher on selecting patches.
   * If the light is not already on, press [PLAY] to turn it on.

2. Press [WRITE]. The display and pedal lights will reflect the settings for the “copy from” patch you just selected.

3. Press [MANUAL]. The display will read 0-0 to indicate the “copy to” point is a Manual mode setting.
   * If you change your mind after pressing [MANUAL], just select a new patch to copy to that patch instead.
   * To cancel the Copy operation at this point, press [PLAY]. You'll be returned to Play mode.

4. Press the [WRITE] button again.
   The patch settings will be copied to Manual settings. After this is done, the Manual button light will come on and you will be in Manual mode.

(Copying a Manual Setting to a Patch)


2. Press [WRITE]. The display and pedal lights will flash to show the settings for the patch in memory.

3. Select the patch to copy to.
   * See page 11, “Selecting a Patch”, if you've forgotten how to do this.
   * To cancel the Copy operation at this point, press [PLAY] to return to Play mode.

   The Manual settings will be copied to the patch selected in 3, after which the Play button light will come on and you'll be returned to regular Play mode with the “copy to” patch already selected.
Manual Mode

You can save effects settings either in a patch, or to an entirely separate Manual mode setting.

"Manual mode" means that each Bank/Number pedal can be used to switch effects on and off, enabling you to play the ME-10 as if it were a series of compact "pedal" effects.

When you select Manual mode, the settings for each effect are as they were the last time you were in Manual mode.

1. Selecting Manual Mode

☐ Using the Panel Button

Each press of the [MANUAL] button turns Manual mode on or off. When Manual is on, the button is lit.

☐ Using a Footswitch

If you have an optional FS-5U footswitch connected to the MANUAL REMOTE jack, each press of the footswitch will turn Manual mode on and off.

♦ Whenever You Press [PLAY]...

Press [PLAY] to cancel Manual mode and return to Play mode. You'll hear the effect sound for the currently selected patch.

* Even if you are using the Tuner or Bypass in Manual mode, when you press [PLAY] you are returned straight to Play mode and the selected patch sound, with all Tuner and Bypass settings canceled.

Here’s how to work the various effects in Manual mode.

1) Switching Effects On and Off

In Manual mode, the Bank and Number pedals become the switches you use to turn effects on and off.

The Bank and Number pedals are assigned to effects as follows:

![Diagram of effect pedals and assignments]

- COMPRESSOR
- OVERDRIVE/DISTORTION
- EQUALIZER
- PHASER/FLANGER/PITCH SHIFTER
- DELAY
- STEREO CHORUS

When in doubt, check the light above each effect button to see if it is on or off.

* You can’t switch among the Noise Suppressor, Effects Send/Return or Stereo Reverb using the pedals. Those have to be turned on and off with the buttons on the panel.
* And of course, any of these effects can still be turned on and off using the panel buttons as well.
* We have included some labels that you can stick on the Bank and Number pedals if you want to make it easier to remember which effect is assigned to which pedal.
2) Changing Parameters

Each effect setting can be modified in real time, meaning the changes take effect as soon as you make them. In addition, the changes are automatically stored and recalled, every time you enter Manual mode.

① Indicate the parameter to be modified.
   Press the appropriate parameter button. The light will come on and the current setting will be shown in the LED display.
   
   * If the effect is currently turned off, the setting in the LED display will flash. And even though it’s turned off, you can still modify it.

② Make your changes with the shuttle dial. Rotate the shuttle dial clockwise to increase the values, and counter-clockwise to decrease them. There are four different display speeds; the further you rotate the dial, the faster the numbers will change.

Repeat Steps ① and ② to modify all the parameters you want.

* Other operations for modifying these parameter values will be the same as for regular patch editing. For details, see “Setting the Parameters” on page 24.

3) Changing the Expression Pedal Assignment

With an optional Expression Pedal connected to EXP.PEDAL1 jack, you can edit a selected parameter “on the fly”, with every movement of the pedal resulting in a change to the parameter.

* Be sure to set the pedal connected to the EXP.PEDAL1 jack to minimum volume.
* As for any pedal you may have connected to the EXP. PEDAL 2 jack, see “Using Expression Pedal 2” on page 34.

① Specify the parameter you want to control with the Pedal.
   When you press [ASSIGN], the button light will flash to indicate the parameter which is currently controlled by the Pedal. Specify a new parameter using the shuttle dial.
   * If no parameter is currently selected, the LED display will read “OFF”.

② Set the parameter’s minimum and maximum values.
   Press [MIN] to display the current minimum value and change it with the shuttle dial.
   Do the same for [MAX].

* Other operations for modifying the Pedal assignment will be the same as for regular patch editing. For details, see “Expression Pedal Settings” on page 26.
Using Expression Pedal 2

If you have an Expression Pedal connected to EXP.PEDAL2 jack, you can use it to adjust the input level to the Phaser/Flanger/Pitch Shifter. This level is controlled from a point in the signal path prior to the reverb and delay, so that even if you suddenly cut back on the level the sound will decay naturally.

When this Pedal is fully depressed, the volume remains unchanged at its input level. As you back off the Pedal, the volume is cut to the minimum set on the Pedal itself.
Section III

The Effects
With the ME-10 you can create your own sounds by combining effects and changing their parameters. In this section we'll tell you about what each of the effects does, and what changes you can make with the parameters.

* If a parameter has an <ASSIGN> setting, that means you can control the value of that setting in real time using the Expression Pedal. See “Expression Pedal Settings” on page 26.

## COMPRESSOR (Analog)

This effect “compresses” high input signals and “expands” low input signals (i.e., makes loud sounds a little softer and softer sounds a little louder). By making the overall volume more uniform, a distortion-free sustain effect is produced.

### SUSTAIN

<ASSIGN> (0 to 100)
Expands low input signals and adjusts the range (time) over which the volume is made more uniform. Larger values mean longer sustain. With smaller values of this parameter, this effect can be used as a 'limiter' to suppress only the highest input signals.

### ATTACK

<ASSIGN> (0 to 100)
Adjusts the ‘picking’ time and attack intensity. Larger values make the start of each note cleaner and improve articulation of the sound.

### TONE

<ASSIGN> (-50 to 50)
This adjusts the tone of the Compressor. Positive values boost the treble, and negative values cut it.

### LEVEL

<ASSIGN> (0 to 100)
This parameter adjusts the volume of the compressor. This is used for adjusting the balance between effects as they are turned on and off.
□ OVERDRIVE/DISTORTION (Analog)

This distorts the sound and gives it a long sustain. The different "modes" are different kinds of distortion effects that you can tailor to match your needs.

● MODE

<ASSIGN> (a-1/a-2/d-1/d-2)
Selects the distortion type. Overdrives 1 and 2 give you a mild distortion that sounds like it came from a tube amp. Distortions 1 and 2 give you a harder sound.
- a-1: Overdrive 1
- a-2: Overdrive 2
- d-1: Distortion 1
- d-2: Distortion 2

● DRIVE

<ASSIGN>(0 to 100)
This parameter adjusts the sound of the distortion. The larger this number, the more intense the distortion effect.

● TONE

<ASSIGN>(-50 to 50)
This parameter adjusts the tone color of the Overdrive/Distortion. Positive values boost the treble, making it brighter.

● LEVEL

<ASSIGN>(0 to 100)
This parameter adjusts the volume of the Overdrive/Distortion. This is used for adjusting the balance between effects as they are turned on and off.

□ NOISE SUPPRESSOR (Analog)

Suppresses induced hum and noise from the guitar pickup. By taking into account the guitar sound 'envelope' (variation of volume over time of the guitar sound), we're able to reduce the noise, without affecting the resonance of your guitar. This creates a more natural sound.

● THRESHOLD

(0 to 100)
Adjustable for the noise level: high for high noise; low for low noise. Set this so that you can hear the guitar notes decay naturally.
* If the threshold is set too high, it may cut out soft guitar notes as well as noise! (This might be the problem if you are playing and nothing is heard.)
A three-band equalizer with a parametric EQ in the mid-range (the most important range for a guitar). There’s also a special setting you can use in conjunction with a pedal to create a wah-wah effect.

**1:EQ/2:WAH**

(1/2)

Selects either the three-band equalizer, or the special equalizer which gives you the wah-wah effect.

[1]: Three-band equalizer
[2]: Wah-wah pedal

* When used as a wah-wah effect, the following parameter values cannot be set (you will see a "---" in the LCD display).
  - High Level
  - Middle Level
  - Low Level

**HIGH LEVEL**

(-12 to 12:dB)

This parameter adjusts the treble. Positive values boost treble, negative values cut it.

**MIDDLE FREQUENCY**

EQ: 200Hz/250Hz/315Hz/400Hz/500Hz/630Hz/800Hz/1.00kHz/1.25kHz/1.60kHz/2.00kHz

Wah: <ASSIGN> (0 to 100)

EQ: Sets the center frequency in the mid-range that will be adjusted by the Middle Level control.

WAH: Simulates the position of the wah-wah pedal.

[ASSIGN]

You can assign the wah-wah effect to Expression Pedal 1 by making the following settings:

1:EQ/2:WAH to 2
ASSIGN to MIDDLE FREQ
MAX to 100
MIN to 0

**MIDDLE LEVEL**

(-12 to 12:dB)

This parameter adjusts the mid-range level. Positive values boost the level, negative values cut it.
**LOW LEVEL**
(-12 to 12:dB)
This parameter adjusts the bass. Positive values boost the bass, negative values cut it.

**TOTAL LEVEL**
(-12 to 12:dB)
This parameter adjusts the volume of the Equalizer. It is used for adjusting the balance between effects as they are turned on and off.

**PHASER (Digital)**

This effect takes the direct sound, shifts the phase slightly and adds an out-of-phase signal to the direct guitar sound. This produces a "vibrato" effect similar to the sound of a rotating speaker.

**MANUAL**
<ASSIGN> (0 to 100)
By adjusting this Manual setting, you can vary the central frequency to which the phaser effect is applied. Lower values give you a lower central frequency, higher values a higher central frequency.

**RATE**
<ASSIGN> (0 to 100)
Adjusts the period of the vibrato. Increasing this value increases the rate of vibrato.

**DEPTH**
<ASSIGN> (0 to 100)
Adjusts the depth of the vibrato. Higher values create a more pronounced effect.

**RESONANCE**
<ASSIGN> (0 to 100)
Adjusts the phaser resonance (feedback volume). Higher values increase the intensity of the phaser effect.

**EFFECT LEVEL**
<ASSIGN> (0 to 100)
Adjusts the effect level. The higher the value, the louder the effect sounds.
At 100 the direct and effect sounds are at the same level.
* This parameter is usually set at 100.
The direct guitar sound is electronically delayed and added back to the original sound to produce a broad, sweeping effect. You can tailor this effect to create sounds from a "jet phaser" to an easy vibrato.

**MANUAL**

(0 to 100)

By adjusting this Manual setting, you can vary the central frequency to which the flanging effect is applied. Lower values set a lower central frequency, while higher values set a higher central frequency.

**RATE**

<ASSIGN> (0 to 100)

Adjusts the rate of the sweep. Higher values create a faster sweep.

**DEPTH**

<ASSIGN> (0 to 100)

Adjusts the depth of the sweep. Higher values create a broader sweep.

**RESONANCE**

<ASSIGN> (0 to 100)

Adjusts the flanger resonance (feedback volume). Higher values increase the phase shift, enhancing the flanging effect.

**EFFECT LEVEL**

<ASSIGN> (0 to 100)

Adjusts the effect level. The higher the value, the louder the effect. At 100 the direct and effect sounds are at the same level.

* This parameter is usually set at 100.
PITCH SHIFTER (Digital)

The Pitch Shifter lets you actually change the pitch of notes played by as much as one octave.

**PRE DELAY**

(0 to 100 ms)

This adjusts the time difference between output of the direct and effect sounds. Usually this is set to 0 ms, but by increasing Feedback and lengthening the Pre Delay you can get an interesting effect where each note is followed by a decaying series of notes, each one rising (or falling) slightly in pitch. Try it!

* Although the pre delay may be set to 0 ms, in reality it takes the pitch shifter a fraction of a second to process and shift the note, so there will be a brief delay before the effect sound is heard.

**CHROMATIC**

<ASSIGN> (-12 to 12 semitones)

This adjusts the amount of pitch shifting in semitone steps, to a maximum of +/- 1 octave.

[ASSIGN]

With this parameter you can control pitch shifting with the Expression Pedal. (Sort of like playing a guitar with a tremolo arm.)

**FINE**

(-50 to 50)

Makes fine adjustments in pitch shift.

* This interval (from -50 to 50) corresponds to one semitone in pitch.

**FEEDBACK**

<ASSIGN> (0 to 100)

Adjusts the effect feedback level. Because pitch shift is applied each time the sound is fed back into the circuit, increasing the value produces a gradual rise in pitch.

**MIX BALANCE**

<ASSIGN> (-50 to 50)

This adjusts the balance between the direct and effect sounds.

[+]: The higher the value, the greater the proportion of effect sound. If this is set to 50, only effect sound is output.

[0]: Direct and effect volumes are equal.

[-]: The higher the value, the greater the proportion of direct sound. If this is set to -50, only direct sound is output.
DELAY (Digital)

Electronically 'delayed' sounds are added to the direct sounds from the guitar. Using Delay fattens the sound, and can be used for special effects as well.

- **DELAY TIME**
  <ASSIGN> (1ms to 1.2s)
  This parameter adjusts the delay time. Delay times are shown in the display as follows:
  - 1 ms to 999 ms: 1 to 999 (in units of milliseconds)
  - 1.00 s to 1.20 s: 1.00 to 1.20 (in units of seconds)

  * There is a certain amount of noise generated by the Expression Pedal when used as a controller.

- **FEEDBACK**
  <ASSIGN> (0 to 100)
  Adjusts the feedback volume of the delayed sound. Larger values mean more and more repeats of the sound, while a setting of '0' gives you a single repeat of the delayed sound.

- **HIGH CUT FILTER**
  (-12 to 0)
  This adjusts the amount of treble cut in the effect sound. A value of 0 indicates no cut -- the tone is unchanged.

- **LOW CUT FILTER**
  (-12 to 0)
  This adjusts the amount of bass rolled off the effect sound. A value of 0 indicates no roll-off -- the tone is unchanged.

- **EFFECT LEVEL**
  <ASSIGN> (0 to 100)
  This parameter adjusts the volume of the delayed sound. Larger values boost the volume of the delayed sound, and at '100' the direct and delayed volumes are almost the same.
The chorus effect adds depth and warmth to sounds.

- **PRE DELAY**
  (1 to 60 ms)
  This adjusts the amount of time between the output of the direct and effect sounds. A longer pre delay creates a more pronounced “doubling” effect.

- **RATE**
  <ASSIGN> (0 to 100)
  Adjusts the speed of the chorus. Higher values create a faster chorusing effect.

- **DEPTH**
  <ASSIGN> (0 to 100)
  Adjusts the depth of the chorus. Higher values create a deeper chorusing effect.

- **TONE**
  (-12 to 12)
  Adjusts the tone quality of the effect sound. Positive values boost the treble, while negative values cut it, producing a warmer chorus sound.

- **EFFECT LEVEL**
  <ASSIGN> (0 to 100)
  This adjusts the volume of the effect sound. Larger values increase the amount of effect sound, and at ‘100’ the direct and effect volumes are equal.
STEREO REVERB (Digital)

Reverb is the complex reflection of sound which builds up naturally in any room or hall. For example, if you clap your hands outdoors, you just hear the clap. But when you clap your hands in a church, for example, there is a lingering echo-like sound called the reverberation or reverb. The sound of the reverb depends on the size of the space (room, hall, etc.) and the shape and material of the reflecting surfaces (such as the walls).

All these elements are digitally simulated in the ME-6.

● MODE

(h-1/h-2/r-1/r-2/p-1/p-2)

This sets the Reverb Mode. With this setting, you can produce a variety of different room simulations.

h-1: Hall 1
Simulates the clear reverb sound of a concert hall.

h-2: Hall 2
Simulates the reverb of a concert hall; a well controlled reverb sound.

r-1: Room 1
Simulates the bright reverb of a very 'live' room.

r-2: Room 2
Room 1 simulates a rather dead-sounding room without much resonance.

p-1: Plate 1
Simulates a plate reverb (an early but popular type of analog reverb that used electrically-charged vibrating plates). The treble is expanded to give it a metallic resonance quality.

p-2: Plate 2
These simulate plate reverb.
Mid-range resonance is especially pronounced in Plate 1.

● PRE DELAY

(0 to 150:ms)

This adjusts the amount of time between the output of the direct and effect sounds.
**TIME**

<ASSIGN> (0 to 100)

This parameter adjusts the reverberation time. Larger values correspond to longer reverberation time.

**TONE**

(-12 to 12)

This parameter adjusts the tone quality of the reverb sound. Positive values emphasize the treble and make it brighter, while negative values soften the sound.

**EFFECT LEVEL**

<ASSIGN> (0 to 100)

Adjusts the reverb volume.

---

**GUITAR AMP SIMULATOR (Analog)**

(On/Off)

This simulates the special qualities of a guitar amp. You can use this to get a guitar amp "sound" while plugging directly into the Line in of your mixer.
Section IV

Using MIDI
The ME-10 is equipped with MIDI jacks that will enable you to exchange data with other
MIDI devices.
* If this is your first time with a MIDI-capable device, be sure to read the following
introduction to MIDI.

About MIDI

MIDI (pronounced middy) stands for Musical Instrument Digital Interface. MIDI is a
world-wide standard that allows musical instruments and computers to exchange
musical data. Most electronic musical instruments sold today are MIDI compatible. MIDI
compatible devices have MIDI connectors which are used to physically link instruments
(using special cables). MIDI does not transmit the sound of an instrument, but rather
'messages' in digital form that tell the receiving instrument to 'do something'. These are
known as MIDI messages.

1. Exchanging MIDI Messages

First, we'll explain in simple terms how MIDI messages are exchanged.

- About MIDI Jacks
MIDI messages are exchanged through three MIDI ports:
  - MIDI IN: Receives messages from external MIDI devices.
  - MIDI OUT: Transmits messages to external MIDI devices.
  - MIDI THRU: Re-transmits an exact copy of messages received via MIDI IN.

* The ME-10 has MIDI IN and MIDI OUT ports.

- MIDI Channels
With MIDI, a single cable can be used to transmit messages to several MIDI devices at
one time, with each device receiving only the messages intended for it. This is possible
due to the concept of MIDI channels.
MIDI channels are easy to understand if we use the analogy of television broadcasting.
Many television programs are broadcast from many TV stations and your TV antenna
receives them all. By setting your television to a specific channel, you can watch only
the desired program. The same idea applies to MIDI channels. A device will only receive
a MIDI message if it is set to the same MIDI channel as the transmitting device.

- The Omni Mode
In the Omni Mode, all MIDI messages are received regardless of which channel they
were transmitted on. (This is something no TV set could ever do!) But if you have
specified a MIDI channel, the device will only receive MIDI messages only that channel.
2. MIDI Messages Handled by the ME-10

MIDI messages are broadly divided into Channel Messages (those that have information specific to a channel), and System Messages (information that applies to the system as a whole).

(Channel Messages)
The MIDI messages that transmit the actual performance data are Channel messages. These messages are doing most of the work controlling the instrument. Different instruments may respond to different messages, however.

● Program Change Messages
Generally, 'patch changing messages' enable you to switch among as many as 128 different program numbers. On the ME-10, patch numbers correspond to program numbers as follows:
- Patch number: 1-1-1 through 4-8-4
- Program numbers: 1 through 128

(System Messages)
System Messages include SysEx (system exclusive) and messages needed for synchronization, diagnostics, and so on. The ME-10 handles SysEx messages only.

● System Exclusive Messages
SysEx messages were designed to handle device-specific operations such as patch-switching. In general, all instruments made by the same manufacturer will be able to exchange SysEx messages. (SysEx messages are used to load and store effects settings to the BOSS BL-1 Bulk Librarian or a sequencer, or to transmit them to another ME-10).

When exchanging SysEx messages, you need to match the unit numbers of the transmitting and receiving devices. The unit number for the ME-10 is the same as its MIDI channel number.

---

MIDI Implementation Chart

MIDI has made it possible for a wide variety of devices to exchange information, but it is not always true that all types of MIDI messages can be exchanged between all types of devices. For example, if you use a synthesizer as a master device to control a digital piano, the pitch bender (the lever or wheel that modifies the pitch) of the synthesizer will have no effect on the sound of the piano.

To help you quickly determine what types of MIDI messages can be exchanged between two devices, the Operation Manual of each MIDI device includes a MIDI Implementation chart. By looking at this chart, you can quickly see what messages the device is able to transmit and receive. The left side of the chart lists the names of a variety of MIDI messages, and the Transmission and Reception columns use "o" and "x" marks to indicate whether or not each of these messages can be transmitted or received. This means that a specific MIDI message can be exchanged only if there is a "o" in both the Transmission column of the master and the Reception column of the slave. MIDI implementation charts are standardized, so you can fold the charts from two manuals together to see at a glance how the two devices will 'communicate'.

* For more detailed information about handling MIDI messages, refer to "About Roland SysEx Messages" on page 59, and "MIDI Implementation" on page 61.
So, What Can You Do With MIDI?

* Be sure to match the ME-10’s MIDI channel setting with the channel of the connected MIDI devices, otherwise you won’t be able to exchange messages.

1. Selecting Patches Via MIDI

You can use MIDI Program Change messages to switch patches on the ME-10 from an external MIDI device, or use the ME-10 to switch patches on an external MIDI device.

Switching Patches on External MIDI Devices

By making the connections shown below, you can select a patch on the ME-10 and simultaneously send out the corresponding Program Change message to the external MIDI device. That device will switch over to whatever patch or program on it corresponds to the received Program Change number.

* Remember to reset the MIDI channel if you need to. Refer to “MIDI Channels and Omni Mode” on page 51.

Switching Patches on the ME-10 from an External Device

With the connections shown below, you can play guitar along with automatic accompaniment from a sequencer. When you come to a point in the song where you want to switch patches on the ME-10, if you have included a Program Change message corresponding to the desired patch in the performance data, the patch will be automatically switched.

* The ME-10 factory preset setting is Omni ON.
Don’t forget to reset the MIDI channel when needed. Refer to “MIDI Channels and Omni Mode” settings on page 51.
2. Transmitting Data Via MIDI

Using Roland MIDI SysEx messages, you can transmit ME-10 effects setting to another
ME-10, an optional BL-1 Bulk Librarian, or a sequencer.

* Refer to "Transmitting Data" on page 52, and "Receiving Data" on page 53.

■ MIDI Channels and Omni Mode

If you want to transmit or receive MIDI data over a specific MIDI channel, you'll have to
set it.
The factory default setting is Omni ON, so that you will receive all data regardless of
which channel it was transmitted on. The ME-10 itself transmits MIDI data over Channel
1.

① Check to see that you're in Play mode. (The Play button light will be on.)
* If it's not, press the [PLAY] button to turn it on.

② Press the [MIDI] button. The current MIDI channel will be shown in the LED display.
* If Omni On is in effect, the display will look like the following:

![MIDI Channel Display]

③ Set the MIDI channel with the shuttle dial.

④ Press [PLAY].
The new MIDI channel is now registered. After this, the Play button will light indicating
that you're back in Play mode.
Transmitting Data

You can use SysEx data on the ME-10 to copy settings to another ME-10, or save effects settings to an optional BOSS BL-1 Bulk Librarian or sequencer. The transmitting of SysEx messages is called a “bulk dump”, and receiving is called a “bulk load”.

1. Transmitting Data (Bulk Dump)

<Making the Connections>

✦ Saving to a BL-1 Bulk Librarian or Sequencer

Hook things up as shown below and put the sequencer or BL-1 into bulk load standby mode.

* For specifics of BL-1 or sequencer operation, refer to the respective owner’s manuals.

✦ Copying Data to Another ME-10

Hook things up as shown below, and match the MIDI send and receive channels. Next, get the receiving ME-10 ready to accept SysEx data. See “Receiving Data” on page 53 for more on that.

* When the transmitting MIDI channel is set to Omni ON, data is transmitted over MIDI channel 1.

<How to Transmit Data>

In sending SysEx messages, there is one method for transmitting data for all 128 patches, and another for transmitting one specific patch.

① Check to see that you’re in Play mode. (The Play button light will be on.)

* If it’s not, press the [PLAY] button to turn it on.

② Press the [MIDI] button twice.

The letters “lad” will appear in the display to indicate the bulk load mode.
3 Use the shuttle dial to select the kind of data to be transmitted.
   To send patch data for all 128 patches:
   select RL
   To send patch data for a specific patch:
   select the desired patch (just as you have all along).

4 Press [WRITE].
   The LED display will begin to flash, and data transmission is started. When that is
   finished, you'll be returned to the situation in Step 3. To cancel, press [PLAY]; the Play
   button will light and you will be returned to normal Play mode.
   * To transmit more patches, repeat Steps 3 and 4.

2. Receiving Data (Bulk Load)

   (Making the Connections)
   ● Transmitting Data From a BL-1 Bulk Librarian or Sequencer to the ME-10
     Make the connections below. Make sure the ME-10 MIDI channel matches the unit
     number of the BL-1 or sequencer.

   * Refer to your BL-1 or sequencer manual for more information about their operations.

   (How to Receive)

   1 Check to see that you’re in Play mode. (The Play button light will be on.)
   * If it’s not, press the [PLAY] button to turn it on.

   2 Press the [MIDI] button twice. The letters “LD” will appear in the display to indicate
     that you are in bulk load mode.

   3 Transmit the data from the BL-1 or sequencer.
     During transmission the LED display will flash. When downloading is complete, you
     will be returned to bulk load mode.

   4 Press [PLAY]. The Play button will light, and you’ll be returned to Play mode.
Section V

Appendices
**Troubleshooting**

If you run into a problem, or the unit is not responding properly, refer to this section. If you can’t resolve the problem, discontinue use immediately and contact your Roland retailer or nearest Roland Service Center.

### “No Sound/Low Volume”

* Is the volume turned down all the way?
  Check the volume also on any connected amps or mixers.

* Can you hear anything through headphones?
  If you’re getting sound through the headphones, then maybe one of the cables is disconnected or broken, or one of the external devices is set incorrectly. Check all cables and external devices one more time.

* Are the patch settings correct?
  For example, check to see that the Level is not set too low. See page 24.

* Is the Tuner in operation?
  Press the Play button to return to Play mode.

* Is the Expression Pedal Level set all the way to zero?
  Adjust the Expression Pedal.

* Is the external device connected to the Send/Return jack operating properly?
  Check it.

### “Can’t Select a Patch”

* Are you in Manual mode?
  Press the [PLAY] button to go to Play mode.

* Are you in Tuner mode?
  Press the [PLAY] button to go to Play mode.

* Are you in MIDI mode?
  Press the [PLAY] button to go to Play mode.

* Are you using Method 1 to call up patches?
  In the “Wait for a Number” method, the patch is not actually switched until you specify the patch number with a Number pedal. Press a Number pedal and see if that helps.

### “Can’t Send or Receive MIDI Messages”

* Do the MIDI channels on the connected MIDI devices match?
  Check the MIDI channel (page 51).

* Is the external MIDI device connected properly?
  Check the connections.

* Is the MIDI cable broken or disconnected?
  Try a different MIDI cable.
Patch/Program Change Number Table

This gives you the Program Change Number that corresponds to each of the patch numbers on the ME-10.

<table>
<thead>
<tr>
<th>BANK</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<tbody>
<tr>
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<td>1</td>
<td>1</td>
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<td>92</td>
<td>96</td>
</tr>
</tbody>
</table>

Factory Preset Settings

The following are some of the factory default settings for features of the ME-10.

- Patch Call-up Method (page 13): "Wait for a Number", Method 1
- Tuner Standard Pitch (page 18): 440 Hz
- Tuner Mode (page 18): String Name Display On/Regular Tuning
- Tuner Output Level (page 19): 0 (muted)
- MIDI Channel (page 51): OMNI ON (Transmit over channel 1)
- Effect Off Handling of Delay/Reverb Sounds: Continue output of repeating/lingering reverb sounds

(How the ME-10 Handles the Cutoff of Delay/Reverb Sounds)

There is a built-in feature on the ME-10 that will let repeating sounds from a Delay or lingering reverberations from the Reverb continue to be output and die out naturally after you turn the effect off. Otherwise, you would get an unnatural cutoff of the sound every time you switch from a patch that uses Delay or Reverb to one that doesn't.

(Setting the Handling Method)

This setting determines whether lingering sounds from Reverb/Delay will or will not be cut off when you switch the effect off (or switch to a patch with no Delay/Reverb).

1. Turn the power off.
2. While holding down Number Pedal [4], turn the power back on again.
3. The display will show the current setting, and you can change it with the shuttle dial: 
   - d-1 : Continue output of repeating/lingering reverb sounds
   - d-2 : Cut off repeating/lingering reverb sounds
Initialization

The initialization process allows you to retrieve all or some of the unit’s original factory presets.

（（Initializing One Patch））
Here’s how to initialize a specific patch:

① Turn the power off.

② While holding down the "1" Number pedal, turn the power back on. The display and Number pedal lights will show the patch that will be initialized if you press [WRITE] at this point.
A "F" will be displayed as the factory presets are loaded.

③ Select the patch you wish to initialize.

④ Press [WRITE].
   The factory preset data is retrieved. When complete, you can return to Step C and initialize additional patches if you wish.
⑤ Press [PLAY] to return to Play mode.

（（Initializing All Patches））
This procedure will return all patches and all other settings to their factory preset values.
① Turn off the power.

② While holding down the "▼" Bank pedal, turn the power back on. “F.P.” will be displayed to show that all patches have been initialized.

※ To cancel initialization, press [PLAY]. You’ll be returned to Play mode.

③ Press [WRITE].
   The factory presets will be retrieved. The unit will automatically be returned to the Play mode when the process is complete.
Roland Exclusive Messages

1. Data Format for Exclusive Messages

Roland's MIDI implementation uses the following data format for all exclusive messages (Type IV):

<table>
<thead>
<tr>
<th>Byte</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOH</td>
<td>Exclusive status</td>
</tr>
<tr>
<td>41H</td>
<td>Manufacturer ID (Roland)</td>
</tr>
<tr>
<td>DEV</td>
<td>Device ID</td>
</tr>
<tr>
<td>MDL</td>
<td>Model ID</td>
</tr>
<tr>
<td>CMD</td>
<td>Command ID</td>
</tr>
<tr>
<td>[BODY]</td>
<td>Main data</td>
</tr>
<tr>
<td>F7H</td>
<td>End of exclusive</td>
</tr>
</tbody>
</table>

= MIDI status: FOH, F7H

An exclusive message must be flanked by a pair of status codes, starting with a Manufacturer-ID immediately after FOH (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 - 0FFH, 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, 03H
00H, 00H, 01H

= Command ID: CMD

The Command ID indicates the function of an exclusive message. The Command ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Command IDs, each representing a unique function:

01H
02H
03H
00H, 01H
00H, 02H
00H, 00H, 01H

= Main data: BODY

This field contains a message to be exchanged across an interface. The exact data size and content will vary with the Model-ID and Command-ID.

2. Address-mapped Data Transfer

Address mapping is a technique for transferring messages conforming to the data format given in Section 1. It assigns a series of memory-resident records-waveform and tone data, switch settings, and parameters, to a location specific to specific locations in a machine-dependent address space, thereby allowing access to data residing at the address to which a message specifies.

Address-mapped data transfer is therefore independent of models and data categories. This technique allows use of two different data 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

Device (A) → Device (B)

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

= Handshake transfer procedure

(This device does not cover this procedure)

This procedure initiates a predetermined transfer sequence (handshaking) across the interface before data transfer takes place. Handshaking ensures that the interface and transfer speed are high enough to handle a large amount of data.

Connection Diagram

Device (A) → Device (B)

Connection at points 1 and 2 is essential.

Notes on the above two procedures

* They 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 acknowledgments 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

<table>
<thead>
<tr>
<th>Message</th>
<th>Command ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Request data 1</td>
<td>RQ1 (11H)</td>
</tr>
<tr>
<td>Data set 1</td>
<td>DT1 (12H)</td>
</tr>
</tbody>
</table>

= 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 that 216 data, 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.

<table>
<thead>
<tr>
<th>Byte</th>
<th>Description</th>
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<tbody>
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<td>Model ID</td>
</tr>
<tr>
<td>11H</td>
<td>Command ID</td>
</tr>
<tr>
<td>ssh</td>
<td>Address MSb</td>
</tr>
<tr>
<td>ssb</td>
<td>Address LSB</td>
</tr>
<tr>
<td>sum</td>
<td>Check sum</td>
</tr>
<tr>
<td>F7H</td>
<td>End of exclusive</td>
</tr>
</tbody>
</table>
* The size of the requested data does not indicate the number of bytes that will make up a DT1 message, but represents the address fields where the requested data resides.
* Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
* The same number of bytes comprises address and site 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, site, and that checksum are summed.

# Data set 1: DT1 (12H)

This message corresponds to the actual data transfer process. Because every byte in the data is assigned a unique address, a DT1 message can convey the starting address of one or more data as well as a series of data formatted in an address-dependent order.

The MIDI standards inhibit non-real-time messages from interrupting an exclusive one. This fact is inconvenient for the devices that support a "soft-through" mechanism. To maintain compatibility with such devices, Roland has limited the DT1 to 256 bytes so that an excessively long message is sent out in separate segments.

<table>
<thead>
<tr>
<th>Byte</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>F0H</td>
<td>Exclusive</td>
</tr>
<tr>
<td>41H</td>
<td>Manufacturer ID (Roland)</td>
</tr>
<tr>
<td>DEV</td>
<td>Device ID</td>
</tr>
<tr>
<td>MDL</td>
<td>Model ID</td>
</tr>
<tr>
<td>12H</td>
<td>Command ID</td>
</tr>
<tr>
<td>aH</td>
<td>Address MSB</td>
</tr>
<tr>
<td></td>
<td>LSB</td>
</tr>
<tr>
<td>cDH</td>
<td>Data</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>sum</td>
<td>Check sum</td>
</tr>
<tr>
<td>F7H</td>
<td>End of exclusive</td>
</tr>
</tbody>
</table>

* A DT1 message is capable of providing only the valid data among those specified by an RQ1 message.
* Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
* The number of bytes comprising address data varies from one Model-ID to another.
* The error checking process uses a checksum that provides a bit pattern where the least significant 7 bits are zero when values for an address, site, and that checksum are summed.

# Example of Message Transactions

- Device A sending data to Device B
  - Transfer of a DT1 message is all that takes place.

```
Device (A)  Device (B)

[Data set 1]  ←[Request data]
[Data set 1]   ←
* More than 20m sec time internal.
[Data set 1]   →
[Data set 1]   →
```

- Device B requesting data from Device A
  - Device B sends an RQ1 message to Device A. Checking the message, Device A sends a DT1 message back to Device B.

```
Device (A)  Device (B)

[Data set 1]  ←[Request data]
[Data set 1]   ←
* More than 20m sec time internal.
[Data set 1]   →
[Data set 1]   →
```
1. TRANSMITTED DATA

Program Change

Status: 00H 0AH
n = MIDI channel : 0H - FH (ch. 1 - ch. 16)
dp = Program number : 00H - 7FH (0 - 127)

Sends this on changing the patch of the ME-10.

System Exclusive Message

Status: F0H System Exclusive
F7H EDX (End of System Exclusive)

Sends patch setting parameters on an external request or a bulk dump instruction.

2. RECOGNIZED RECEIVE DATA

Program Change

Status: 00H 0AH
n = MIDI channel : 0H - FH (ch. 1 - ch. 16)
dp = Program number : 00H - 7FH (0 - 127)

Calls a patch corresponding to the received program number.

System Exclusive Message

Status: F0H System Exclusive
F7H EDX (End of System Exclusive)

Allows generation of a request for or writing of setting parameters of a patch or temporary area.

3. EXCLUSIVE COMMUNICATION

The ME-10 can send and receive setting parameters to/from external MIDI instruments using exclusive messages.

Bulk dumps system data or, on a patch basis, data in the internal memory.

When set to data load mode and ready for receive status, receive exclusive messages and stores the received data into the internal memory or temporary.

Carries out exclusive communications in accordance with protocol of Roland Exclusive Format, type IV, one way communications.

Request Data (One Way)

Request Data 1 RD1 (11H)

If the received exclusive message contains the addresses that match parameter addresses and the size of addresses is one or more, sends the data in these addresses locations patch by patch, using data set (DT1).

The device ID is the value of MIDI channel subtracted by 1.

The ME-10 does not send this message.

4. ADDRESS MAPPING OF PARAMETERS

The address is displayed under 7-bit hexadecimal notation.

<table>
<thead>
<tr>
<th>MSB</th>
<th>LSB</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000 0000</td>
<td>0000 0000</td>
</tr>
</tbody>
</table>

Description:
1 = Internal Memory
2 = Internal Memory Manual
3 = Memory Group
4 = Memory Bank
5 = Memory Number
6 = Parameter Address

Effective address of each parameter is the start address of the corresponding block plus an offset address.

Temporary area

This is the data area for parameter setting to be monitored and edited. The parameters are loaded from the internal memory when changing the patch or changing to the Manual mode.

Internal Memory area

This is the data area for patch parameter in memory area.
<table>
<thead>
<tr>
<th>Offset address</th>
<th>Description</th>
<th>Flanger</th>
</tr>
</thead>
<tbody>
<tr>
<td>00 00 00H 0abc defgB</td>
<td>Effect On/Off (MSB)</td>
<td>Manual 0 - 100</td>
</tr>
<tr>
<td>00 00 01H 0nij 0000B</td>
<td>Effect On/Off (LSB)</td>
<td>Rate 0 - 100</td>
</tr>
<tr>
<td>00 00 02H 0000 0aaB</td>
<td>Mode (MSB)</td>
<td>Depth 0 - 100</td>
</tr>
<tr>
<td>00 00 03H 00bc odddB</td>
<td>Mode (LSB)</td>
<td>Resonance 0 - 100</td>
</tr>
<tr>
<td>00 00 04H 0aaa aaaaB</td>
<td>Compressor</td>
<td>Pitch Shifter Pre delay 0 - 100</td>
</tr>
<tr>
<td>00 00 05H 0aaa aaaaB</td>
<td>Overdrive/Distortion</td>
<td>Pitch Shifter</td>
</tr>
<tr>
<td>00 00 06H 0aaa aaaaB</td>
<td>Noise suppressor</td>
<td>Effect Level 0 - 100</td>
</tr>
<tr>
<td>00 00 07H 0aaa aaaaB</td>
<td>Effect send/return</td>
<td>Feedback 0 - 100</td>
</tr>
<tr>
<td>00 00 08H 0aaa aaaaB</td>
<td>Equalizer</td>
<td>Mix Balance 0 - 100</td>
</tr>
<tr>
<td>00 00 09H 0aaa aaaaB</td>
<td>Phaser/Flanger/Pitch shifter</td>
<td></td>
</tr>
<tr>
<td>00 00 0AH 0aaa aaaaB</td>
<td>Delay</td>
<td></td>
</tr>
<tr>
<td>00 00 0BH 0aaa aaaaB</td>
<td>Chorus</td>
<td></td>
</tr>
<tr>
<td>00 00 0CH 0aaa aaaaB</td>
<td>Reverb</td>
<td></td>
</tr>
<tr>
<td>00 00 0DH 0000 aaaaB</td>
<td>GAmp Simulator</td>
<td></td>
</tr>
<tr>
<td>00 00 0EH 0000 aaaaB</td>
<td>Control</td>
<td></td>
</tr>
<tr>
<td>00 00 0FH 0000 aaaaB</td>
<td>Level</td>
<td></td>
</tr>
<tr>
<td>00 00 0GH 0000 aaaaB</td>
<td>Gain</td>
<td></td>
</tr>
<tr>
<td>00 00 0HH 0000 aaaaB</td>
<td>Volume</td>
<td></td>
</tr>
<tr>
<td>00 00 0IH 0000 aaaaB</td>
<td>Pan</td>
<td></td>
</tr>
<tr>
<td>00 00 0JH 0000 aaaaB</td>
<td>Delay Time (LSB)</td>
<td></td>
</tr>
<tr>
<td>00 00 10H 0000 aaaaB</td>
<td>Delay Time (MSB)</td>
<td></td>
</tr>
<tr>
<td>00 00 11H 0000 000B</td>
<td>Feedback</td>
<td></td>
</tr>
<tr>
<td>00 00 12H 0aaa aaaaB</td>
<td>Low Cut</td>
<td></td>
</tr>
<tr>
<td>00 00 13H 0aaa aaaaB</td>
<td>High Cut</td>
<td></td>
</tr>
<tr>
<td>00 00 14H 0aaa aaaaB</td>
<td>Level</td>
<td></td>
</tr>
<tr>
<td>00 00 15H 0aaa aaaaB</td>
<td>Control</td>
<td></td>
</tr>
<tr>
<td>00 00 16H 0aaa aaaaB</td>
<td>Level</td>
<td></td>
</tr>
<tr>
<td>00 00 17H 0aaa aaaaB</td>
<td>Volume</td>
<td></td>
</tr>
<tr>
<td>00 00 18H 0aaa aaaaB</td>
<td>Pan</td>
<td></td>
</tr>
<tr>
<td>00 00 19H 0aaa aaaaB</td>
<td>Pitch</td>
<td></td>
</tr>
<tr>
<td>00 00 1AH 0aaa aaaaB</td>
<td>Rate</td>
<td></td>
</tr>
<tr>
<td>00 00 1BH 0aaa aaaaB</td>
<td>Depth</td>
<td></td>
</tr>
<tr>
<td>00 00 1CH 0aaa aaaaB</td>
<td>Resonance</td>
<td></td>
</tr>
<tr>
<td>00 00 1DH 0aaa aaaaB</td>
<td>Effect Level</td>
<td></td>
</tr>
<tr>
<td>00 00 1EH 0000 aaaaB</td>
<td>Pitch Shifter</td>
<td></td>
</tr>
<tr>
<td>00 00 1FH 0aaa aaaaB</td>
<td>Pre delay</td>
<td></td>
</tr>
<tr>
<td>00 00 20H 0aaa aaaaB</td>
<td>Chromatic</td>
<td></td>
</tr>
<tr>
<td>00 00 21H 0aaa aaaaB</td>
<td>Fine</td>
<td></td>
</tr>
<tr>
<td>00 00 22H 0000 0aaB</td>
<td>Feedback</td>
<td></td>
</tr>
<tr>
<td>00 00 23H 0aaa aaaaB</td>
<td>Low Cut</td>
<td></td>
</tr>
<tr>
<td>00 00 24H 0aaa aaaaB</td>
<td>High Cut</td>
<td></td>
</tr>
<tr>
<td>00 00 25H 0000 aaaaB</td>
<td>Level</td>
<td></td>
</tr>
<tr>
<td>00 00 26H 0000 aaaaB</td>
<td>Pre delay</td>
<td></td>
</tr>
<tr>
<td>00 00 27H 0aaa aaaaB</td>
<td>Effect Level</td>
<td></td>
</tr>
<tr>
<td>00 00 28H 0aaa aaaaB</td>
<td>Pre delay</td>
<td></td>
</tr>
<tr>
<td>00 00 29H 0aaa aaaaB</td>
<td>Rate</td>
<td></td>
</tr>
<tr>
<td>00 00 2AH 0aaa aaaaB</td>
<td>Depth</td>
<td></td>
</tr>
<tr>
<td>00 00 2BH 0000 aaaaB</td>
<td>Tone</td>
<td></td>
</tr>
<tr>
<td>00 00 2CH 0aaa aaaaB</td>
<td>Effect Level</td>
<td></td>
</tr>
<tr>
<td>00 00 2DH 0000 000B</td>
<td>Pre Delay (MSB)</td>
<td></td>
</tr>
<tr>
<td>00 00 2EH 0aaa aaaaB</td>
<td>Pre Delay (LSB)</td>
<td></td>
</tr>
<tr>
<td>00 00 2FH 0aaa aaaaB</td>
<td>Tone</td>
<td></td>
</tr>
<tr>
<td>00 00 30H 0000 aaaaB</td>
<td>Tone</td>
<td></td>
</tr>
<tr>
<td>00 00 31H 0aaa aaaaB</td>
<td>Effect Level</td>
<td></td>
</tr>
<tr>
<td>00 00 32H 0aaa aaaaB</td>
<td>Master Level</td>
<td></td>
</tr>
</tbody>
</table>
| 00 00 33H 0000 aaaaB | Send Pedal Assign | | *
| 00 00 34H 0000 000B | Assign Target | | *
| 00 00 35H 0aaa aaaaB | dummy | | *
| 00 00 36H 0000 000B | Maximum Value | | *
| 00 00 37H 0aaa aaaaB | Minimum Value | | *

*Table 1 Parameter offset address*
### Table 2: Sound change request

<table>
<thead>
<tr>
<th>Offset address</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>00 00 38H 0000 00008</td>
<td>Sound change request</td>
</tr>
</tbody>
</table>

Sound change request is a parameter resides only in the temporary area. Receiving this parameter after temporary area data alters the tone color.

### Table 3: Exel Pedal assign

<table>
<thead>
<tr>
<th>Assign Target</th>
<th>Max/Min</th>
</tr>
</thead>
<tbody>
<tr>
<td>00H: Exel Assign off</td>
<td>0</td>
</tr>
<tr>
<td>(Compressor) 01H : Sustain</td>
<td>0 – 100</td>
</tr>
<tr>
<td>02H : Attack</td>
<td>0 – 100</td>
</tr>
<tr>
<td>03H : Tone</td>
<td>0 – 100 (–50 – +50)</td>
</tr>
<tr>
<td>04H : Level</td>
<td>0 – 100</td>
</tr>
<tr>
<td>(Overdrive/Distortion) 05H : Mode</td>
<td>0 – 3</td>
</tr>
<tr>
<td>0: Overdrive 1</td>
<td></td>
</tr>
<tr>
<td>1: Overdrive 2</td>
<td></td>
</tr>
<tr>
<td>2: Distortion 1</td>
<td></td>
</tr>
<tr>
<td>3: Distortion 2</td>
<td></td>
</tr>
<tr>
<td>06H : Drive</td>
<td>0 – 100</td>
</tr>
<tr>
<td>07H : Tone</td>
<td>0 – 100 (–50 – +50)</td>
</tr>
<tr>
<td>08H : Level</td>
<td>0 – 100</td>
</tr>
<tr>
<td>(Equalizer/Wah) 09H : Wah Pedal</td>
<td>0 – 100</td>
</tr>
<tr>
<td>(Phaser) 0AH : Manual</td>
<td>0 – 100</td>
</tr>
<tr>
<td>0BH : Rate</td>
<td>0 – 100</td>
</tr>
<tr>
<td>0CH : Depth</td>
<td>0 – 100</td>
</tr>
<tr>
<td>0DH : Resonance</td>
<td>0 – 100</td>
</tr>
<tr>
<td>0EH : Effect Level</td>
<td>0 – 100</td>
</tr>
<tr>
<td>(Flanger) 0FH : Rate</td>
<td>0 – 100</td>
</tr>
<tr>
<td>10H : Depth</td>
<td>0 – 100</td>
</tr>
<tr>
<td>11H : Resonance</td>
<td>0 – 100</td>
</tr>
<tr>
<td>12H : Effect Level</td>
<td>0 – 100</td>
</tr>
<tr>
<td>(Pitch Shifter) 13H : Chromatic</td>
<td>0 – 120 (–12 – +12)</td>
</tr>
<tr>
<td>14H : Feedback</td>
<td>0 – 100</td>
</tr>
<tr>
<td>15H : Mix Balance</td>
<td>0 – 100 (–50 – +50)</td>
</tr>
<tr>
<td>(Delay) 16H : Delay Time</td>
<td>0 – 120 (1ms – 1.20s)</td>
</tr>
<tr>
<td>17H : Feedback</td>
<td>0 – 100</td>
</tr>
<tr>
<td>18H : Effect Level</td>
<td>0 – 100</td>
</tr>
<tr>
<td>(Chorus) 19H : Rate</td>
<td>0 – 100</td>
</tr>
<tr>
<td>1AH : Depth</td>
<td>0 – 100</td>
</tr>
<tr>
<td>1BH : Effect Level</td>
<td>0 – 100</td>
</tr>
<tr>
<td>(Reverb) 1CH : Time</td>
<td>0 – 100</td>
</tr>
<tr>
<td>1DH : Effect Level</td>
<td>0 – 100</td>
</tr>
<tr>
<td>1EH : Master Level</td>
<td>0 – 100</td>
</tr>
<tr>
<td>Function</td>
<td>Transmitted</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Basic Channel Changed</td>
<td>1 - 16, 1 - 16</td>
</tr>
<tr>
<td>Mode Default Messages Altered</td>
<td>x, x, x, x, x, x, x, x, x, x</td>
</tr>
<tr>
<td>Note Number True Voice</td>
<td>x, x, x, x, x, x, x, x, x, x</td>
</tr>
<tr>
<td>Velocity Note ON Note OFF</td>
<td>x, x, x, x, x, x, x, x, x, x</td>
</tr>
<tr>
<td>After Key's Touch Ch's</td>
<td>x, x, x, x, x, x, x, x, x, x</td>
</tr>
<tr>
<td>Pitch Bender</td>
<td>x, x, x, x, x, x, x, x, x, x</td>
</tr>
<tr>
<td>Control Change</td>
<td></td>
</tr>
<tr>
<td>Prog Change True #</td>
<td>○ (0 - 127), ○ (0 - 127)</td>
</tr>
<tr>
<td>System Exclusive</td>
<td>○, ○, ○, ○, ○, ○, ○, ○, ○, ○</td>
</tr>
<tr>
<td>System Common Song Pos Song Sel Tune</td>
<td>x, x, x, x, x, x, x, x, x, x, x, x, x</td>
</tr>
<tr>
<td>System Real Time Clock Commands</td>
<td>x, x, x, x, x, x, x, x, x, x, x, x, x</td>
</tr>
<tr>
<td>Aux Messages Local ON/OFF All Notes OFF Active Sense Reset</td>
<td>x, x, x, x, x, x, x, x, x, x, x, x, x</td>
</tr>
<tr>
<td>Notes</td>
<td></td>
</tr>
<tr>
<td>*1 Basic Channel is common to transmitting/receiving but not exclusive to one of them.</td>
<td></td>
</tr>
<tr>
<td>*2 When set to OMNI On, Basic Channel number is 1.</td>
<td></td>
</tr>
</tbody>
</table>

○ : Yes
× : No
# Blank Chart

## ME-10 BLANK CHART

<table>
<thead>
<tr>
<th>GROUP</th>
<th>BANK</th>
<th>NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### COMPRESSOR
- SUSTAIN *
- ATTACK *
- TONE *
- LEVEL *

### OVERDRIVE / DISTORTION
- MODE *
- DRIVE *
- TONE *
- LEVEL *

### N. SUPPRESSOR
- THRESHOLD

### SEND / RETURN
- ON or OFF

### EQUALIZER
- 1:EQ / 2:WAH
- HIGH LEVEL
- MIDDLE FREQ *
- MIDDLE LEVEL
- LOW LEVEL
- TOTAL LEVEL

### PHASER
- MANUAL *
- RATE *
- DEPTH *
- RESONANCE *

### FLANGER
- EFFECT LEVEL *
- PRE DELAY *
- RATE *
- DEPTH *
- RESONANCE *

### PITCH SHIFTER
- CHROMATIC *
- FINE
- FEEDBACK *
- MIX BALANCE *

### DELAY
- DELAY TIME *
- FEEDBACK *
- HIGH CUT
- LOW CUT
- EFFECT LEVEL *

### STEREO CHORUS
- PRE DELAY *
- RATE *
- DEPTH *
- TONE
- EFFECT LEVEL *

### STEREO REVERB
- MODE
- PRE DELAY *
- TIME *
- TONE
- EFFECT LEVEL *

### MASTER LEVEL *

### G.AMP SIMULATOR

### ASSIGN

### ASSIGN MAX

### ASSIGN MIN

*: Expression Pedal Assignable
# ME-10 BLANK CHART

<table>
<thead>
<tr>
<th>Group</th>
<th>Bank</th>
<th>Number</th>
</tr>
</thead>
</table>

## Compressor
- Sustain *
- Attack *
- Tone *
- Level *

## Overdrive / Distortion
- Mode *
- Drive *
- Tone *
- Level *

## Noise Suppressor
- Threshold

## Send/Return
- On or Off

## Equalizer
- 1:EQ / 2:Wah
- High Level
- Middle Freq *
- Middle Level
- Low Level
- Total Level

## Phaser
- Manual *
- Rate *
- Depth *
- Resonance *
- Effect Level *
- Manual *

## Flanger
- Rate *
- Depth *
- Resonance *
- Effect Level *
- Pre Delay *

## Pitch Shifter
- Chromatic *
- Fine
- Feedback *
- Mix Balance *

## Delay
- Delay Time *
- Feedback *
- High Cut
- Low Cut
- Effect Level *

## Stereo Chorus
- Pre Delay *
- Rate *
- Depth *
- Tone
- Effect Level *

## Stereo Reverb
- Mode
- Pre Delay *
- Time *
- Tone
- Effect Level *

## Master Level *

## G. Amp Simulator
- Assign *

| Assign Max |
| Assign Min |
### ME-10 BLANK CHART

<table>
<thead>
<tr>
<th>GROUP</th>
<th>BANK</th>
<th>NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COMPRESSION</th>
<th>SUSTAIN</th>
<th>ATTACK</th>
<th>TONE</th>
<th>LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>OVERDRIVE / DISTORTION</td>
<td>MODE</td>
<td>DRIVE</td>
<td>TONE</td>
<td>LEVEL</td>
</tr>
<tr>
<td>N. SUPPRESSOR</td>
<td>THRESHOLD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SEND / RETURN</td>
<td>ON or OFF</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EQUALIZER</th>
<th>1:EQ / 2:WAH</th>
<th>HIGH LEVEL</th>
<th>MIDDLE FREQ</th>
<th>MIDDLE LEVEL</th>
<th>LOW LEVEL</th>
<th>TOTAL LEVEL</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>PHASER</th>
<th>MANUAL</th>
<th>RATE</th>
<th>DEPTH</th>
<th>RESONANCE</th>
<th>EFFECT LEVEL</th>
<th>MANUAL</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>FLANGER</th>
<th>RATE</th>
<th>DEPTH</th>
<th>RESONANCE</th>
<th>EFFECT LEVEL</th>
<th>PRE DELAY</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>PITCH SHIFTER</th>
<th>CHROMATIC</th>
<th>FINE</th>
<th>FEEDBACK</th>
<th>MIX BALANCE</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>DELAY</th>
<th>DELAY TIME</th>
<th>FEEDBACK</th>
<th>HIGH CUT</th>
<th>LOW CUT</th>
<th>EFFECT LEVEL</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>STEREO CHORUS</th>
<th>PRE DELAY</th>
<th>RATE</th>
<th>DEPTH</th>
<th>TONE</th>
<th>EFFECT LEVEL</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>STEREO REVERB</th>
<th>MODE</th>
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| MASTER LEVEL | |

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*: Expression Pedal Assignable
Specifications

ME-10: Guitar Multiple Effects

Signal Processing:
(except, Compressor, Overdrive/Distortion, Noise Suppressor and Guitar Amp Simulator)
A/D Conversion: 16bit linear
D/A Conversion: 16bit linear

Sampling Frequency: 32kHz
Patches: 128 + Manual Setting

Built-in Effects:
Compressor, Overdrive/Distortion, Noise Suppressor, Equalizer/Wah, Phaser/Flanger/Pitch Shifter, Delay, Stereo Chorus, Stereo Reverb, Guitar Amp Simulator

Tuner:
Concert Pitch: 435Hz to 445Hz (1Hz steps)
Tuning Range: A0(27.50Hz) to B6(1975.53Hz)
Tuning Accuracy: ±1cent

Nominal Input Level:
Input: -20dBm
Effect Return: -20dBm

Input Impedance:
Input: 1MΩ
Effect Return: 100kΩ

Nominal Output Level:
Output L/R: -20dBm
Effect Send: -20dBm

Output Impedance
Output L/R: 1kΩ
Effect Send: 1kΩ

Recommended Load Impedance:
Output L/R: 10kΩ or greater
Effect Send: 10kΩ or greater

Display:
7 segments, 3 characters (LED)

Connectors:
Input Jack (1/4 inch phone type)
Output Jacks L(MONO)/R (1/4 inch phone type)
Effect Send Jack (1/4 inch phone type)
Effect Return Jack (1/4 inch phone type)
Expression Pedal 1/2 Jack
Tuner Remote Jack
Manual Remote Jack
Bypass Remote Jack
Headphones Jack (Stereo mini type)
MIDI Connectors (In, Out)

Power Supply: AC117V, AC230V or AC240V
Power Consumption: 20W
Dimensions:
435(W) x 235(D) x 70(H) mm
17-1/8"(W) x 9-1/4"(D) x 2-13/16"(H) inches
Weight:
3.6 kg / 7 lbs 15 oz

Accessories:
Pedal Seal
Owner’s Manual

Options:
FS-5U Footswitch
FV-300L Foot Volume/Expression with PCS-33
Roland EV-5 Expression Pedal

* 0dBm=0.775Vrms
* In the interest of product improvement, the specifications of this unit are subject to change without prior notice.
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Information

When you need repair service, call your local Roland Service Station or the authorized Roland distributor in your country as shown below.

U.S.A.
Roland Corporation US
7200 Dominion Circle
Los Angeles, CA 90040-3647, U.S.A.
(213) 685-5141

SPAIN
Roland Electronics de España, S. A.
Calle Bolívia 239
08020 Barcelona, SPAIN
(93) - 308 - 1000

GERMANY
Roland Elektronische Musikinstrumente Handelsgesellschaft mbH.
Gutstrasse 96, 2000
Norderstedt, GERMANY
(040)52 60 090

FRANCE
Musikenpro
102 Avenue Jean-Jaurès
69007 Lyon Cedex 07
FRANCE
(7) 858 - 54 60

MUSIKENPRO (Paris Office)
Centre Region Parisienne
41 rue Charles-Fourier, 94400 Véry s/Seine
FRANCE
(1) 4680 86 62

BELGIUM/LUXEMBOURG
Roland Benelux N. V.
Houtstraat 1
B-2260 Oevel-Westerlo
BELGIUM
(02)314-5758

DENMARK
Roland Scandianvia A/S
Langebrogade 6
Box 1937
DK-1023 Copenhagen K.
DENMARK
31 - 95 31 11

SWEDEN
Roland Scandianvia A/S
Danvikcenter 28 A, 2 tr.
S-131 30 Nacka
SWEDEN
(08) - 702 00 20

NORWAY
Roland Scandianvia A/S
Avd. Norge
Lilleakerveien 2
Postboks 95 Lilleaker
N-0216 Oslo 2
NORWAY
02 - 73 00 74

FINLAND
Fazer Music Inc.
Länstullietie
POB 169
SF-02101 Espoo
FINLAND
9 - 43 50 11

NEW ZEALAND
Roland Corporation (NZ) Ltd.
37 Mt. Eden Road, Mt. Eden
Auckland 3
NEW ZEALAND
(09)3098 - 715

SWITZERLAND
Musitronic AG
Gerberstrasse 5, CH-4410
Liestal, SWITZERLAND
(061)921 16 15

RAIL K (Switzerland) AG
Postfach/Hauptstrasse 21
CH-4456 Tennen
SWITZERLAND
(061)98 60 55
Repair Service by Musitronic AG

AUSTRIA
E. Dmatte & Co.
Neu-Funing-Straße 4
A-6021 Innsbruck, Box 591
AUSTRIA
(0512)36 451

GRECE
V. Dimitriadis & Co. Ltd.
2 Phidion Str., GR 106 78
Athens, GRECE
1 - 3626130

PORTUGAL
Casal Cunha Instrumentos Musicais Ltda.
Rua de Santa Catarina 131
Porto, PORTUGAL
(02) - 38 44 56

HUNGARY
Intermusica Ltd.
Warehouse Area 'DEPO' Moszkva, Budapest
HUNGARY
(1) 1668905

ISRAEL
D.J.A. International Ltd.
25 Pinsker St., Tel Aviv
ISRAEL
(972) - 2923 5283015

CYPRUS
Radex Sound Equipment Ltd.
17 Pantelis Katelari Str.
P.O.Box 2046, Nicosia
CYPRUS
453426, 466423

TURKEY
Barkat Sanayi ve Ticaret
Sirnaseliler Cad. 86/6
Taksim Istanbul, TURKEY
149 93 24

EGYPT
AI Fanny Trading Office
9, Elhag Hurghada Street, Ard El Golf.
Heliopolis, Cairo, EGYPT
2917803 - 665918

THAILAND
Theera Music Co., Ltd.
330 Vemakorn Kasem
Soi 2, Bangkok 10100, THAILAND
14108821

MALAYSIA
Syarikat Bentley
No.142, Jalang Bukit
Bintang 55100 Kuala Lumpur, MALAYSIA
2421288

INDONESIA
PT Galeastra Inti
Kompleks Perkantoran
Duta Merlin Blok C/59
Jl. Gajah Mada No.3-5
Jakarta 10130
INDONESIA
(021) 3546406, 354606

TANZANIA
Siruba Enterprise(Tanzania)
Room. 5. 91. No. 112
Chung Shan Road Sec.2
Taipei, TAIWAN, R.O.C.
(02)5364546

SOUTH AFRICA
That Other Music Shop(PTY) LTD.
256 Bree Street,
Johannesburg 2001
Republic of South Africa
337 - 6573

Paul Bothner(PTY) LTD.
17 Werdmuller Centre
Clarendon 7700
Republic of South Africa
021 - 64-4030

As of Jan. 8, 1992
**Apparatus containing Lithium batteries**

**ADVARSEL!**
Lithiumbatteri – Explosionsfare ved fejlagtig håndtering.
Udskriftning må kun ske med batteri af samme fabrikat og type.
Lever det brugte batteri tilbage til leverandøren.

**VARNING!**
Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera användt batteri enligt fabrikantens instruktion.

**ADVARSEL!**
Lithiumbatteri – Explosionsfare.
Ved udskriftning benyttes kun batteri som anbefalt av apparatforskerkant.
Brukt batteri returneres apparatleverandøren.

**VAROITUS!**
Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vältä paristo ainoastaan laittevalmistajan suosittelemaan tyypin.
Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

---

**Bescheinigung des Herstellers/Importeurs**
Hiermit wird bescheinigt, daß der/die/das
GUITAR MULTIPLE EFFECTS ME-10
(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 tested 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 television reception.

The equipment described in this manual generally 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 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. 004-000-00345-4.

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**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.

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**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.