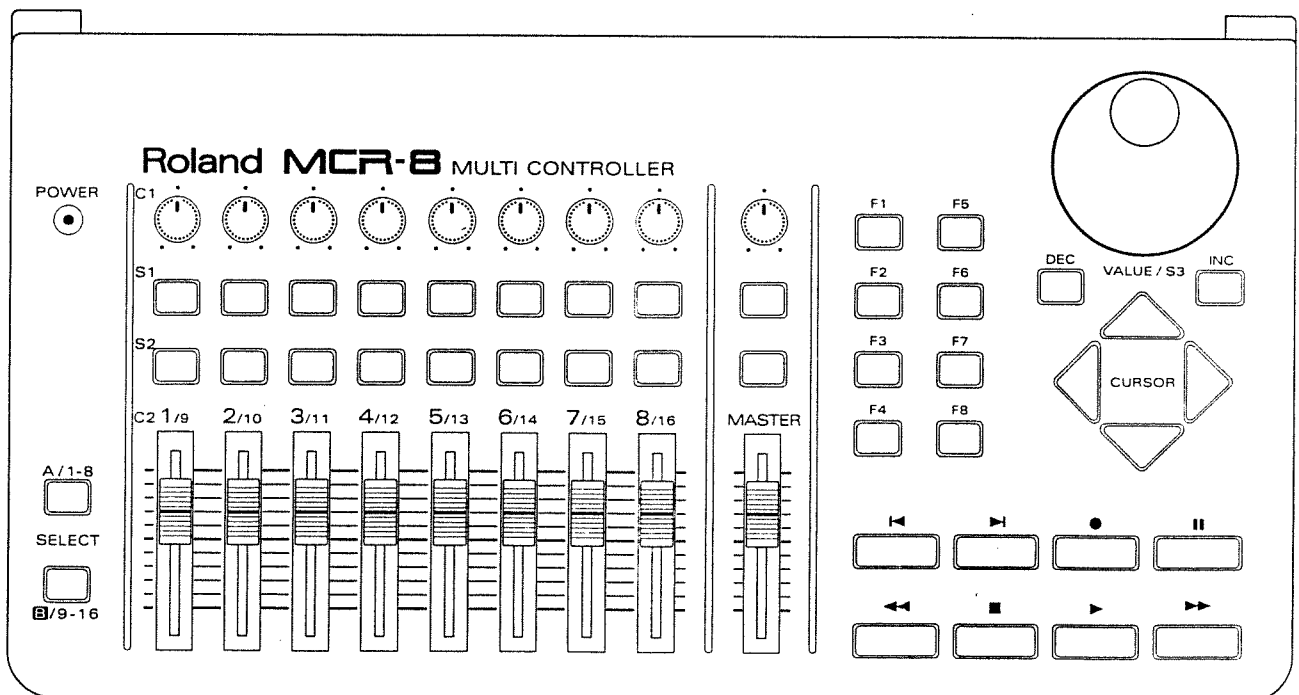


Roland®

MULTI CONTROLLER

MCR-8

Owner's Manual



For the U.K.

IMPORTANT: THE WIRES IN THIS MAINS LEAD ARE COLOURED IN ACCORDANCE WITH THE FOLLOWING CODE.

BLUE : NEUTRAL
BROWN : LIVE

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

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

For Germany

Bescheinigung des Herstellers/Importeurs

Hiermit wird bescheinigt, daß der/die/das

Roland Multi Controller MCR-8

(Gerät, Typ, Bezeichnung)

in Übereinstimmung mit den Bestimmungen der BMPT-AmtsblVfg 243/1991 funk-entstört ist. Der vorschriftsmäßige Betrieb mancher Geräte (z. B. Meßsender) kann allerdings gewissen Einschränkungen unterliegen. Beachten Sie deshalb die Hinweise in der Bedienungsanleitung.

Dem Zentralamt für Zulassungen im Fernmeldewesen wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf die Einhaltung der Bestimmungen eingeräumt.

Roland Corporation

4-16 Dojimahama 1-Chome Kita-ku Osaka 530 Japan
(Name und Anschrift des Herstellers/Importeurs)

For the USA

FEDERAL COMMUNICATIONS COMMISSION RADIO FREQUENCY INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Unauthorized changes or modification to this system can void the users authority to operate this equipment.
This equipment requires shielded interface cables in order to meet FCC class B Limit.

For Canada

CLASS B

NOTICE

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

CLASSE B

AVIS

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

Apple is a registered trademark of Apple Computer Inc., U.S.A.

Macintosh is a registered trademark of Apple Computer Inc., U.S.A.

IBM and PC/AT are registered trademarks of International Business Machines Corporation, U.S.A.

INTRODUCTION

Thank you for purchasing the Roland MCR-8 Multi Controller. To take full advantage of the MCR-8's capabilities, please read this owner's manual carefully.

FEATURES

Four Operating Modes

Depending on your equipment and requirements, the MCR-8 can function in one of four different modes, allowing you to control GS sound modules or MIDI devices, for example.

Computer Connector

With the inclusion of a computer connector, you can connect the MCR-8 directly to a computer without the need for a MIDI interface.

Simple GS Tone Editing

When the MCR-8 is set up to control a GS sound module, each Part in the module can be controlled independently.

Powerful Editing Control

Using the 8 on-board sliders, 8 channels (parameters) can be edited simultaneously. This can be very effective when adjusting the balance of 8 parameters in real-time.

Simple Controls

A large dial and switch, plus 8 sliders make editing quick and easy.

The MCR-8 is a MIDI control unit. Although it contains no sound-generating circuitry of its own, it can effectively control external units by transmitting a wide variety of MIDI messages. To ensure maximum benefit from your system, be sure to read this manual and the manual(s) of all external equipment.

CONTENTS

IMPORTANT NOTES	6
How to use the MCR-8	7
PANEL DESCRIPTIONS	8
How to use the Owner's Manual	10
Setup and Computer Switch	11
Connecting the AC Adaptor	11
Connecting to a Computer	11
Connecting to an Apple Macintosh Series	11
Connecting to an IBM PC/AT Series	13
How to use the Computer Switch	14
Setting the Soft Thru.....	15

MODE 1 : GS Control

Procedure	20
<To edit the part Parameters>	20
Specifying the Part to be edited	20
Entering data values	20
Tone Selection	21
[Changing Capital Tones]	21
[Variation Selection]	21
[Editing Part Parameters]	22
[Setting Random Pan]	23
Note Messages	24
[Note ON/OFF]	24
[Setting the Note Number]	24
[Setting the Velocity]	25
[Muting a Part]	25
<Editing the Parameters that affect the entire GS Sound Module>	26
[Adjusting the Pan of the entire Part]	26
[Adjusting the Volume of the entire Part]	26
[Setting the Key Shift of the entire Part]	26
Editing Parameters	26
[Editing Reverb Parameters]	26
[Editing Chorus Parameters]	28
Using a Sequencer	29
Other Procedures	30
[Setting the NRPN Receive Switch for the entire Part]	30
[Sending the GS Reset]	30

MODE 2 : MIDI Mixer

About the Transmit MIDI Channels	34
Data Value Entry	35
Sending Program Change Messages	35
Sending Control Change Messages	36
[Setting the C1 Knob]	36
[Setting the C2 Slider]	37
<Editing the Parameters that affect the entire sound module>	38
[Setting the overall Panning]	38
[Setting the overall Volume]	38
[Switching GS/Universal Exclusive in the Master section]	38
Sending Messages related to Notes	39
[Note ON/OFF]	39
[Setting the Note Number]	39
[Setting the Velocity]	40

[Muting]	40
Using a Sequencer	41
Other Procedures	42
[Sending GM System ON]	42

MODES 3 and 4 : Software Control

MIDI Channel Setting for Mode 4	44
---------------------------------------	----

MIDI Applications

About MIDI	46
The Exchange of MIDI Data	46
About MIDI Connectors	46
MIDI Channels	46
MIDI Messages Recognized by the MCR-8	47
The GM System and GS Format	49
MIDI Channel Setting for Mode 4	49
Changing Device ID Numbers	50

Reference

TROUBLESHOOTING	52
MIDI Control Change Table	53
Table of Output Data for Modes 1 - 4	55
Computer Cable Diagram	60
ROLAND EXCLUSIVE MESSAGES	62
MIDI Implementation	64
MIDI Implementation Chart	66
How to read a MIDI Implementation Chart	70
Specifications	71
Index	72

IMPORTANT NOTES

If the supplied template happens to be warped, remove the protective sheet on the back of the template.

Be sure to use only the AC adaptor supplied with the unit. Use of any other AC adaptor could result in damage, malfunction, or electric shock.

POWER SUPPLY

Before connecting this unit to other devices, turn off the power to all units; 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; an electric motor or variable lighting system for example.

The power requirement for this unit is indicated on its nameplate (rear panel). Ensure that the voltage in your installation meets this requirement.

Avoid damaging the power cord: do not step on it, place heavy objects on it, etc.

When disconnecting the AC adaptor from the power outlet, grasp the plug itself; never pull on the cord.

If the unit is to remain unused for an extended period of time, unplug the power cord.

PLACEMENT

Do not subject the unit to temperature extremes (eg., direct sunlight in an enclosed vehicle). Avoid using or storing the unit in dusty or humid areas, or areas that are subject to high levels of vibration.

Using the unit near power amplifiers (or other equipment containing large power transformers) may induce hum.

This device may interfere with radio and television reception. Do not use this device in the vicinity of such receivers.

Do not expose the unit to temperature extremes or install it near devices that radiate heat. Direct sunlight in an enclosed vehicle can deform or discolor the unit.

MAINTENANCE

For everyday cleaning wipe the unit with a soft, dry cloth or one that has been slightly dampened with water. To remove stubborn dirt, use a mild, non-abrasive 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 possibility of discoloration and/or deformation.

ADDITIONAL PRECAUTIONS

Protect the unit from strong impact.

Do not allow objects or liquids of any kind to penetrate the unit. In the event of such an occurrence, discontinue use immediately. Contact qualified service personnel as soon as possible.

Should a malfunction occur, or if you suspect there is a problem, discontinue use immediately. Contact qualified service personnel as soon as possible.

To avoid the risk of electric shock, do not open the unit or its AC adaptor.

How to use the MCR-8

The MCR-8 has four different operating modes. Select the mode necessary for your particular requirements.

MODE 1 : GS Control

This mode is for directly controlling a GS sound module. It allows you to control the data using a knob/slider or buttons. This allows you to edit the Reverb and Chorus effects, select sounds in each Part, edit sounds, etc.

MODE 2 : MIDI Mixer

Select this mode when the MCR-8 is connected to a MIDI device in which you wish to control each Channel. That is, Program Change, Control Change, Note messages, etc. are output in this mode.

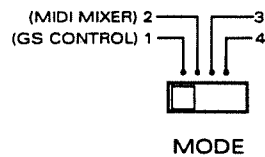
MODE 3 and 4 : Software Control

Use these modes for controlling computer software, a synthesizer or effects unit. Select Mode 3 or 4 depending on the software or device to be used.

How to change modes:

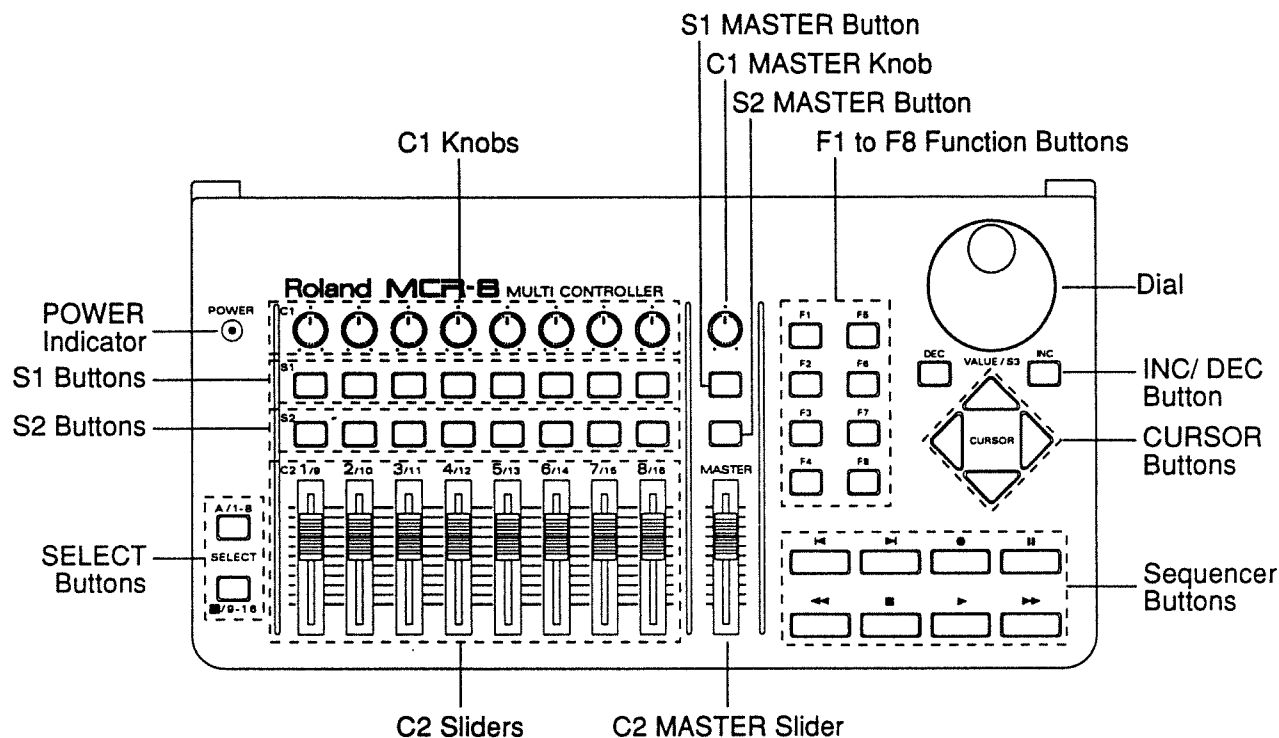
Set the Mode Switch to the desired mode.

Change the position of the Mode Switch to match your requirements.



PANEL DESCRIPTIONS

<Front Panel>



Power Indicator

This indicator lights when the unit is switched on.

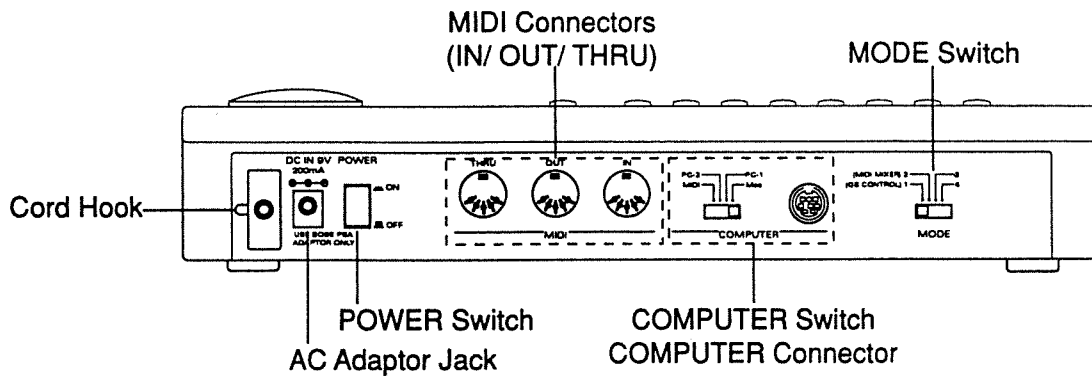
Select Buttons

Select either function A or B to be assigned to the C1 Knob, C2 Slider, or S1/S2 buttons. The Selector Button currently active will be lit. Pressing the button that is lit will cause both buttons (A and B) to go out; no messages will be output by operating [C1], [S1], [S2] or [C2]. Pressing the A/B buttons simultaneously will cause both buttons to light and both A and B messages will be output at the same time. (Except in Mode 1)

Dial

The dial is equipped with a push switch (S3).

<Rear Panel>



Cord Hook

Wrap the AC adaptor cord around this hook to prevent the plug from being accidentally disconnected.

Power Switch

This switch turns the unit on and off.

AC Adaptor Jack

Connect the supplied AC adaptor to this jack.

MIDI Connectors (IN/OUT/THRU)

Connect an external MIDI device using these connectors.

Computer Switch

Change the position of this switch to reflect the type of computer connected to the Computer Connector. When you are not using a computer, set this switch to MIDI.

*** Before changing the position of the Computer Switch, turn the MCR-8 off.**

Computer Connector

Connect the (optional) computer cable to this connector.

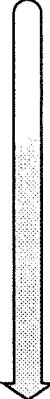
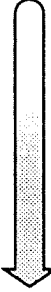






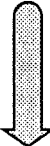
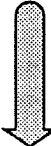




*** The appropriate cable will be determined by the type of computer. Be sure to use the correct cable.**

Mode Switch

Use this switch to select one of the four operating modes.

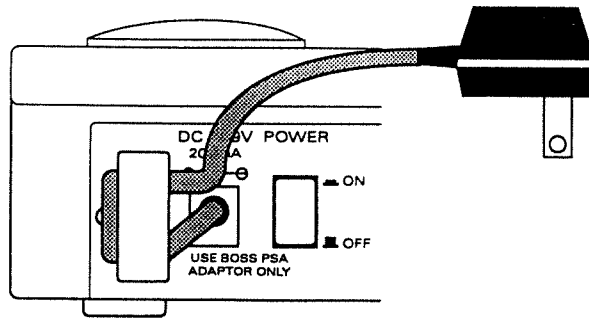
How to use the Owner's Manual

Although you really only need to read about the mode you are actually using, it is a very good idea to read about the other modes the unit has to offer; doing so will give you a good idea of what the unit can do, and may even suggest new ways of working that you may not have previously considered.

	MODE 1	MODE 2	MODE 3	MODE 4
PANEL DESCRIPTIONS				
Setup and Computer Switch				
Connecting the AC Adaptor				
Connecting to a Computer				
MODE 1: GS Control				
MODE 2: MIDI Mixer				
MODE 3 and 4: Software Control				
MIDI Applications				
Reference				

Setup and Computer Switch

Connecting the AC Adaptor



Double-check that the MCR-8 is switched off, connect the supplied AC adaptor to the AC Adaptor jack, then connect it to an AC outlet. Wrap the AC adaptor cord around the cord hook.

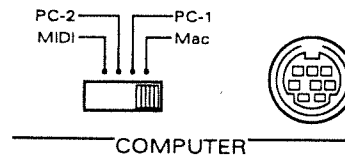
*** Be sure to use only the supplied AC adaptor. Using any other type may cause malfunction or electric shock. Disconnect the unit from the AC outlet when it is not going to be used for a long period of time.**

Connecting to a Computer

Connecting to an Apple Macintosh Series

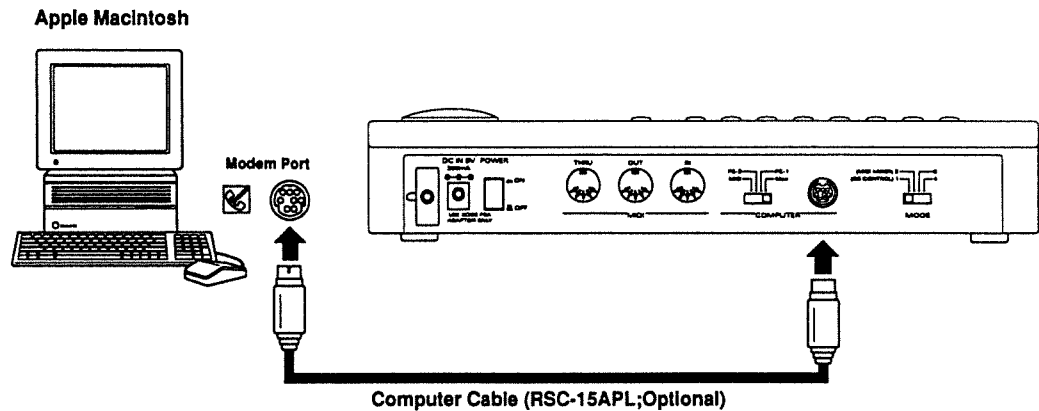
Connect the MCR-8 to an Apple Macintosh series using an optional computer cable (RSC-15APL).

- 1 Switch off the MCR-8, then change the Computer Switch on the rear of the MCR-8 to Mac.



- 2 Connect the computer cable (RSC-15APL: optional) to the Modem/Printer Port on the rear of the Macintosh.

- 3 Connect the other end of the computer cable to the Computer Connector on the MCR-8.



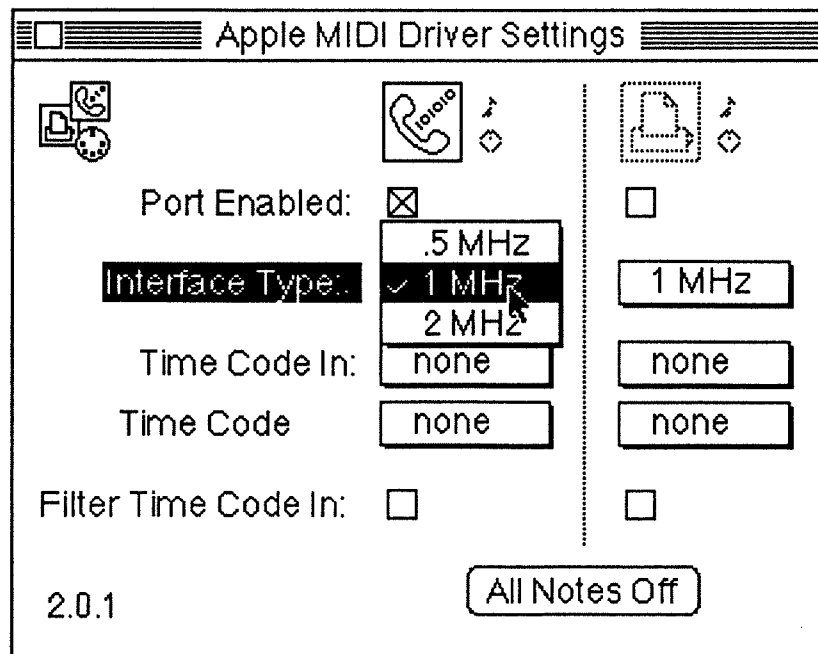
- 4 Switch on the MCR-8.

When using MIDI Application Software (Mac)

Any MIDI application compatible with a Macintosh serial port can be used. When using the MCR-8 connected with the Computer Cable, you must set the MIDI interface as shown below.

Specify the Modem Port (the port where the MCR-8 is connected) as the serial port.

Be sure to set the Interface Type (MIDI interface clock) to 1MHz on the Macintosh application software.

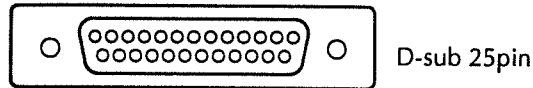
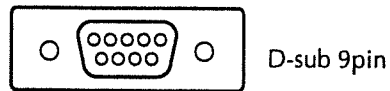


* The above display shows the MIDI Interface Settings of the Apple MIDI Driver.

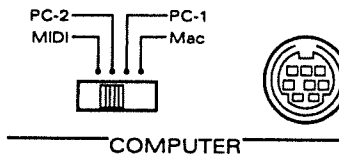
Connecting to an IBM PC/AT Series

Connect the PC/AT series to the MCR-8 using an optional computer cable (RSC-15AT).

A PC/AT series computer provides two serial ports; a D-sub 25 pin and a D-sub 9 pin. The optional computer cable RSC-15AT is a 9 pin type. If you need the 25 pin cable, refer to the Computer Cable Diagram (page 60) and purchase the appropriate cable.



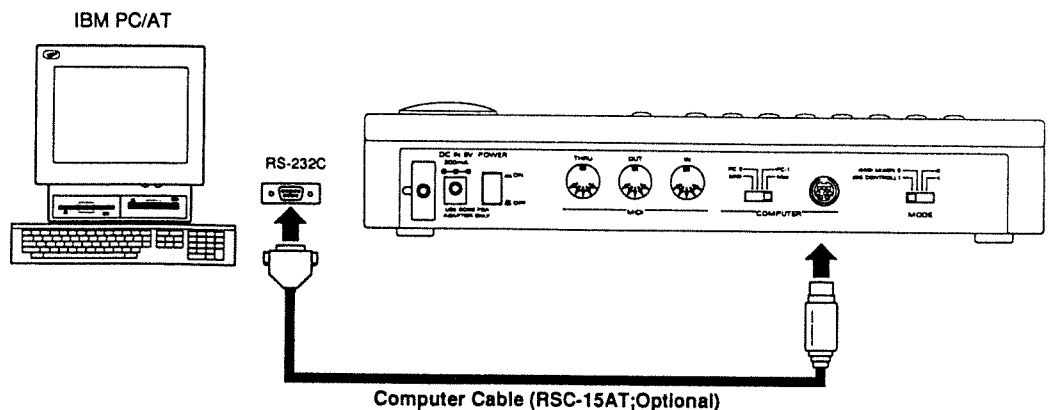
- 1 Switch off the MCR-8, then change the Computer Switch on the rear of the MCR-8 to "PC-2".



** The baud rate of the "PC-2" position is 38.4K (bit/sec). If you use a MIDI application where the baud rate is set to 31.25K (bit/sec), set the Computer Switch to PC-1.*

** When the MIDI application displays "RS232C-1", set the Computer Switch to PC-1. If it displays "RS232C-2", set it to "PC-2".*

- 2 Connect the Computer Cable (RSC-15AT : optional) to the RS-232C Port on the rear of the PC/AT.
- 3 Connect the other end of the Computer Cable to the Computer Connector on the MCR-8.



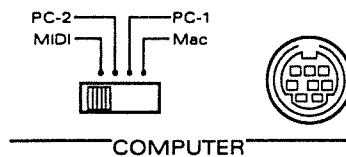
- 4 Switch on the MCR-8.

When using MIDI Application software (IBM PC/AT)

You can use any MIDI application compatible with the MIDI interface that uses RS-232C. If you are using the MCR-8 connected using a computer cable, set it so that the computer's serial port can be used.

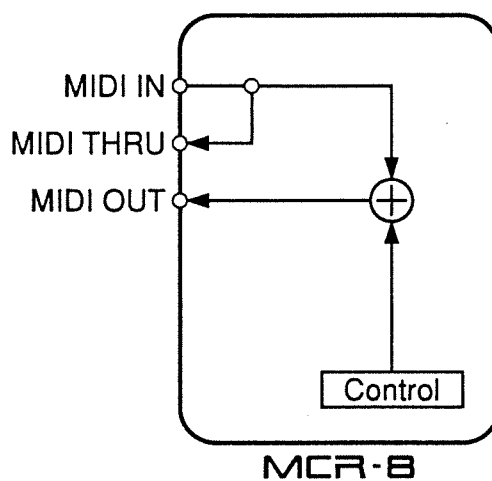
How to use the Computer Switch

The Computer Switch (on the rear of the MCR-8) determines the mode for the Computer Connector (also located on the rear of the unit).



<Set the Computer Switch to the MIDI when the MCR-8 is not connected to a computer.>

When the Computer Switch is set to the MIDI position, the Computer Connector is disabled. MIDI messages can only be sent/received through MIDI connectors.



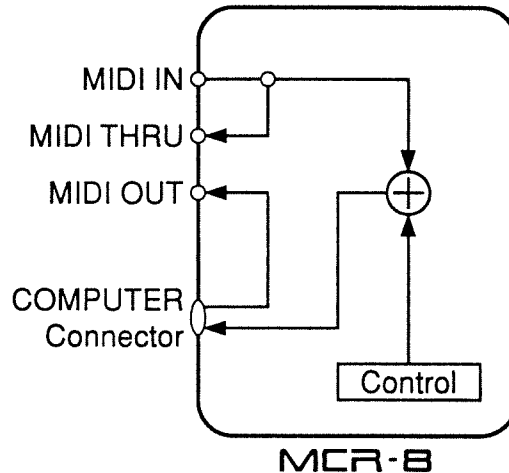
** To connect a computer to the MCR-8 via a MIDI interface, set the Computer Switch to "MIDI".*

<To connect a computer to the MCR-8, set the Computer Switch to the "Mac", "PC-1" or "PC-2" position.>

Select "Mac", "PC-1" or "PC-2" depending on the computer you use.

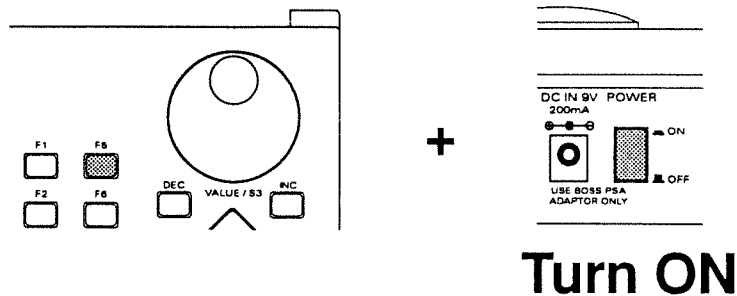
The following shows the flow chart of MIDI signals. To output the data received at the MIDI IN connector (or the operation messages of the MCR-8) through the MIDI OUT on the MCR-8 via a computer, you must set the Soft Thru on the computer to ON.

*** Soft Thru is the function that re-transmits received data without alteration.**



Setting the Soft Thru

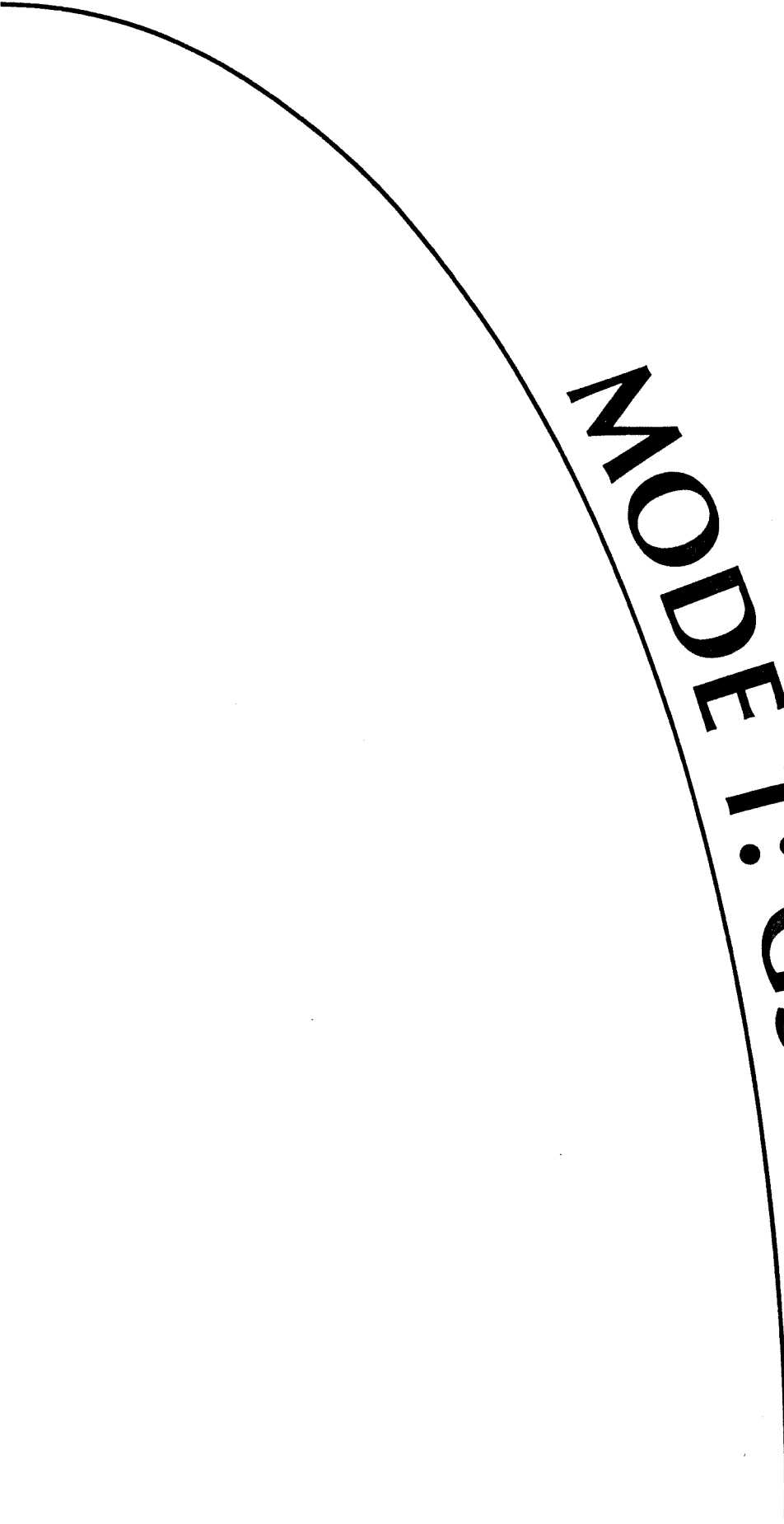
Soft Thru lets the MIDI messages received at a MIDI IN connector go through a MIDI IN or Computer Connector. Normally, it should be set to Soft Thru ON, but can be changed to Soft Thru OFF using the following procedure.



Switch on the MCR-8 while holding down [F5].

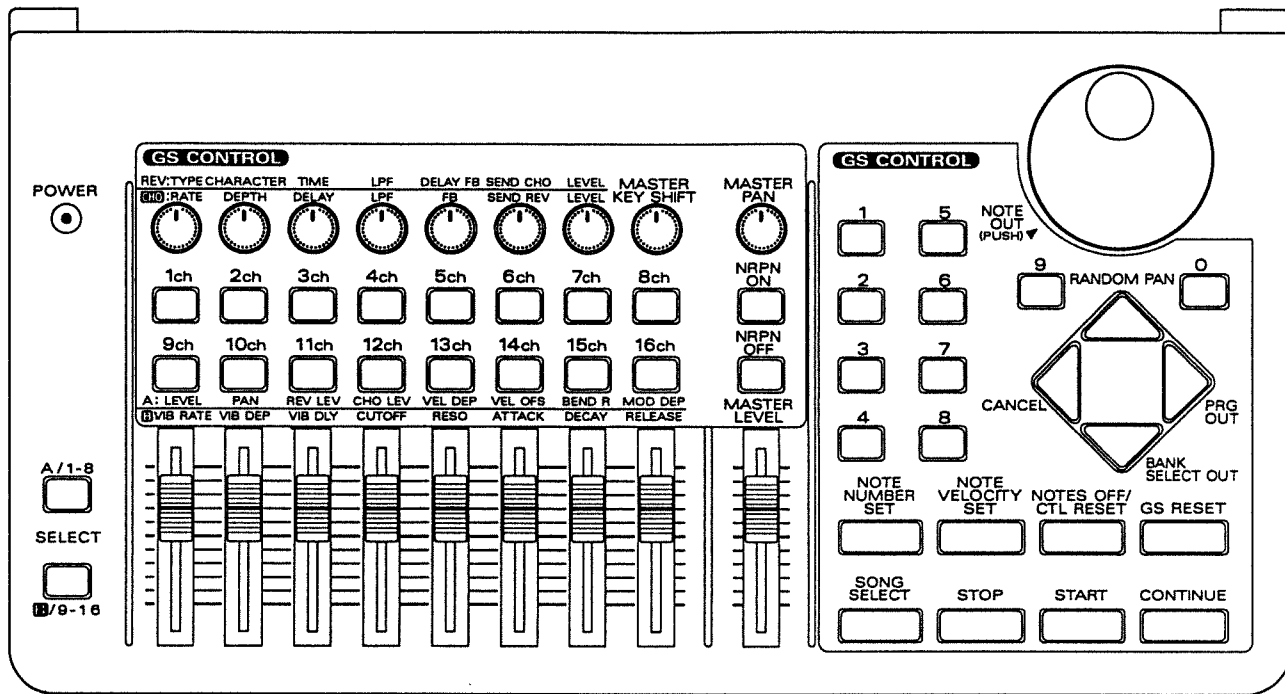
*** The Soft Thru OFF setting cannot be written into memory. Perform the above procedure each time you switch on the unit to select Soft Thru OFF.**

MEMO



MODE 1: GS Control

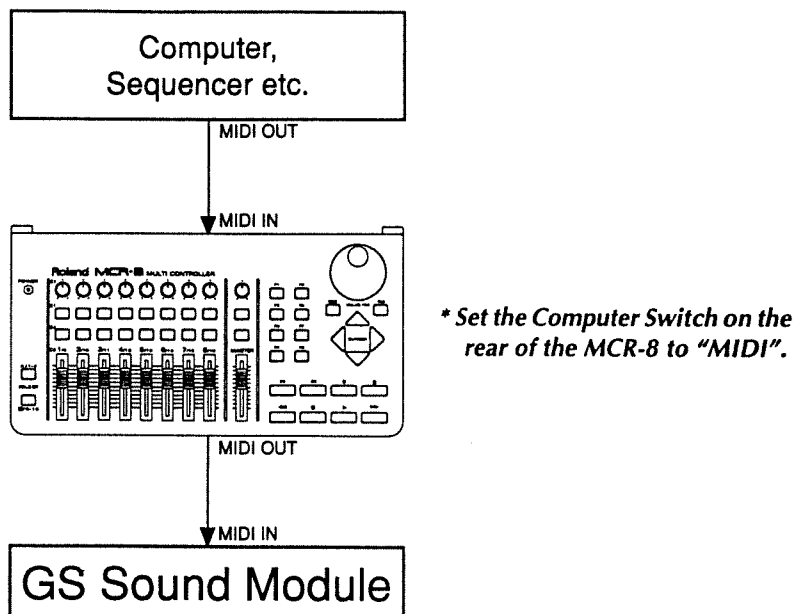
This mode allows you to directly control a GS sound module. It allows you to specify a Part and set parameters for it.



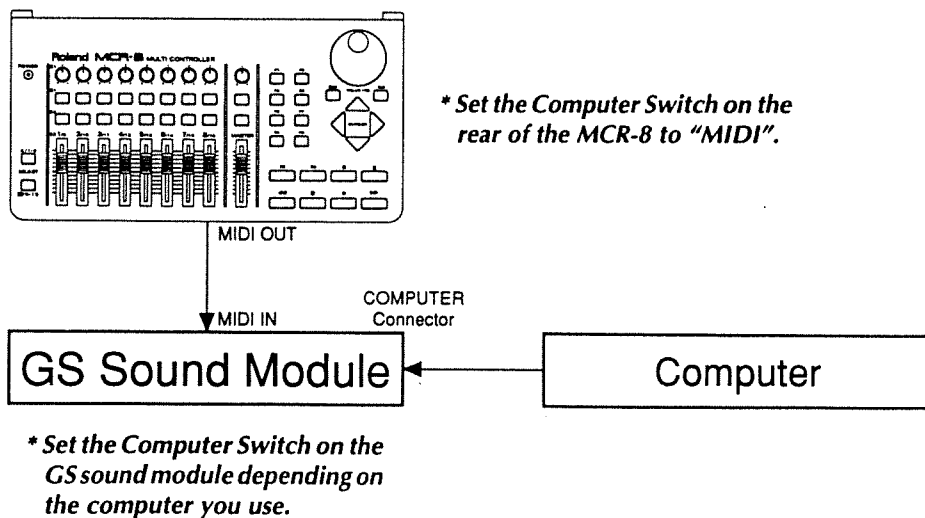
* The MCR-8 comes with a template (a plastic sheet) containing information specifically for GS control. Attach the template (written as **GS CONTROL**) to the MCR-8 when using Mode 1.

<Setup Examples>

To connect the MCR-8 to a GS sound module that does not feature a computer connector :



To connect the MCR-8 to a GS sound module that features a computer connector :



Procedure

A GS sound module has parameters that can be set for each Part (Part Parameters) and those for the overall unit (Reverb and Chorus Parameters).

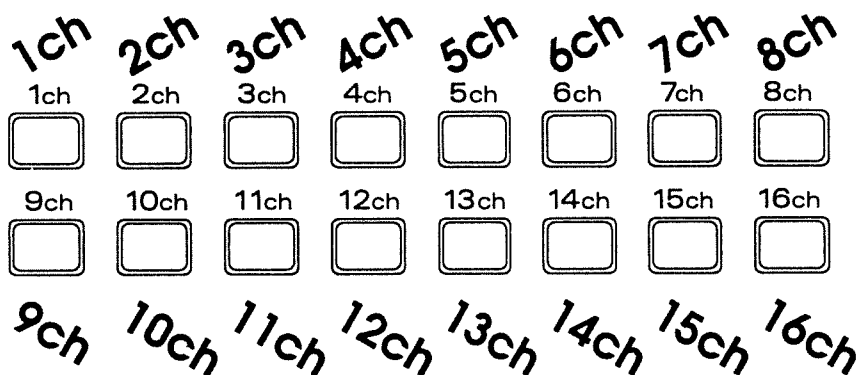
<To edit the Part Parameters>

To edit the parameters for each Part, first specify the Part to be edited.

** Switching on the unit will automatically select Part 1.*

Specifying the Part to be edited

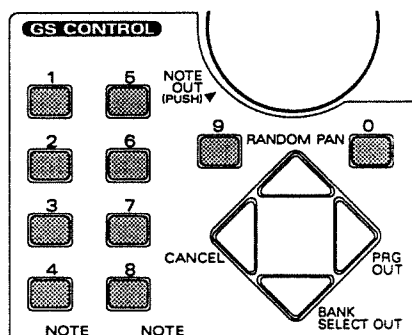
Specify the Part to be edited using [S1/S2].



Entering data values

To enter a data value, use [F1 - F8, DEC, INC] as numerical keys [0 - 9].

If you wish to cancel entering values (or to start over), press [CANCEL(◀)].

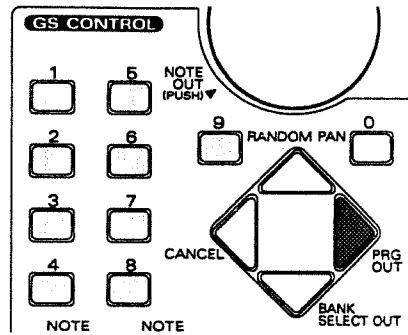


Tone Selection

(Changing Capital Tones)

First enter the desired Tone Number (data value). Pressing [PRG OUT(▷)] will then output the Program Change message to the Part you have specified.

*** You can set any Program Number from 1 — 128.**



Rotating the Dial while holding down [PRG OUT(▷)] will output the Program Change message you have set to the Program Number set on the MCR-8.

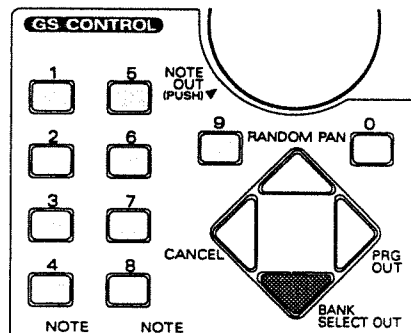
*** Switching on the unit will automatically select Program Number 1.**

(Variation Selection)

First, specify the desired Variation Number (data value). Pressing [BANK SELECT OUT(▽)] will then output the Variation Selection message to the Part you have specified.

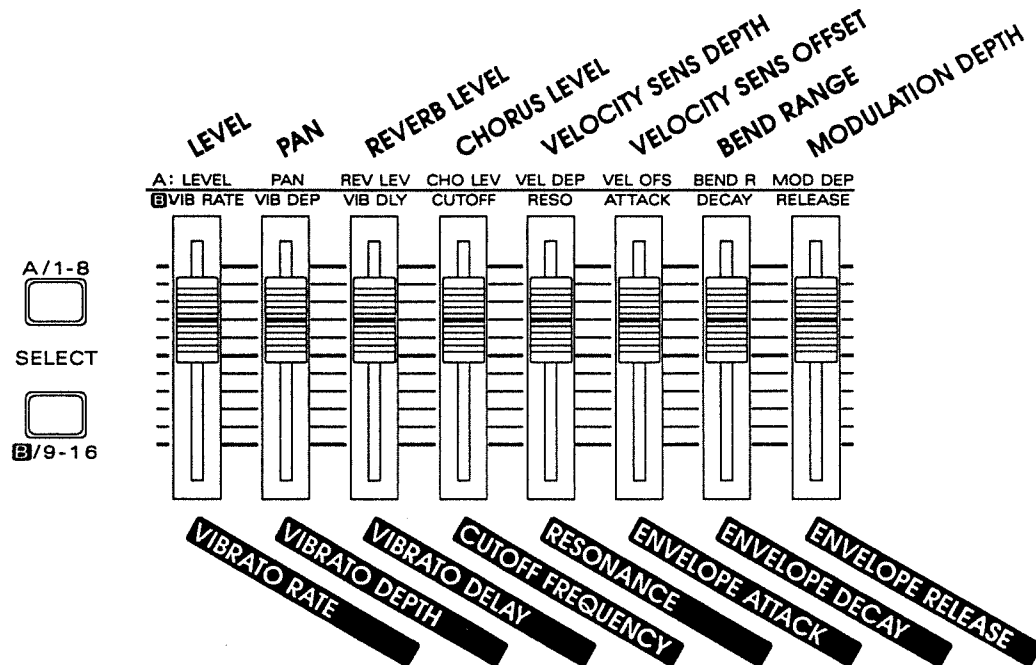
*** You can select any GS Bank Select Number from 0 — 127.**

*** Switching on the unit will automatically select GS Bank Select Number 0.**



(Editing Part Parameters)

Using [C2] sliders, you can edit any Part Parameter.



LEVEL: This parameter adjusts the volume level of each Part.

PAN: This parameter determines the positioning (stereo location) for each Tone. (For example, you can set the Drum Set and Bass to the center, Guitar to the right and Keyboard to the left.)

REVERB LEVEL: This parameter adjusts the volume of Reverb or Delay for each Part.

CHORUS LEVEL: This parameter adjusts the volume of the Chorus for each Part.

VELOCITY SENS DEPTH (Velocity Sens Depth):

VELOCITY SENS OFFSET (Velocity Sens Offset):

These parameters can change the volume relative to how you play the keyboard. If the Velocity Sens Depth value is increased, the volume will change drastically even when there is little variation in your playing strength. If it is set to a low value, the volume will change very little even if you play very hard.

** If the Velocity Sens Depth or Velocity Sens Offset values are set too low, no sound may be produced.*

BEND RANGE: This parameter controls the maximum amount of pitch change caused by the pitch bend lever or wheel on a MIDI keyboard (Pitch Bend Messages).

MODULATION DEPTH:

This parameter controls the depth of the modulation (e.g. vibrato effect) caused by the modulation lever or wheel (Modulation Messages).

VIBRATO RATE: This parameter adjusts the rate of the pitch fluctuation.

VIBRATO DEPTH: This parameter adjusts the depth of the pitch fluctuation.

VIBRATO DELAY: This parameter adjusts the time needed for the vibrato effect to start working.

CUTOFF FREQUENCY:

This parameter adjusts the frequency at which the harmonics of sound are cut off. In some Tones, the effect of this parameter will be pronounced. Normally, decreasing the value will create a softer sound.

RESONANCE:

This parameter determines how much the harmonics around the cutoff frequency will be emphasized. Normally, setting Resonance to a higher value and the Cutoff Frequency to a lower value will create more unusual sounds.

ENVELOPE ATTACK:

This parameter determines the time needed for the sound to reach its maximum volume.

ENVELOPE DECAY:

This parameter determines the time needed for the sound to fall to the sustain level (where the volume/cutoff frequency are stable).

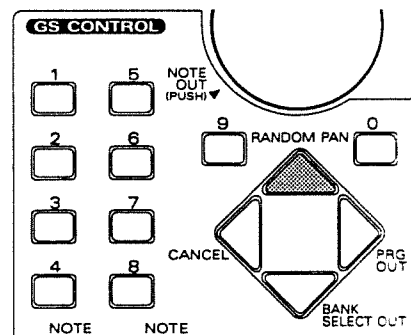
** When using Piano or Guitar Tones in which the sound decays naturally, the same parameter determines the time needed for the sound to fall to the minimum volume.*

ENVELOPE RELEASE:

This parameter determines the time needed for the sound to fall to the minimum volume.

(Setting Random Pan)

Pressing [RANDOM PAN(△)] will turn on Random Pan in the Part you have specified. To turn off Random Pan, move [PART PAN(C2-2)].

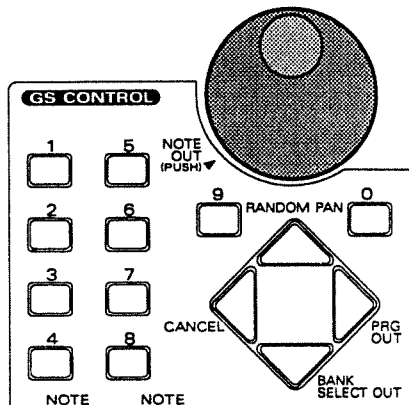


Note Messages

These messages include operation information from the keyboard. When a Note ON is transmitted, the sound module will respond in accord with how it is set (Note Number settings, Velocity, etc.).

(Note ON/OFF)

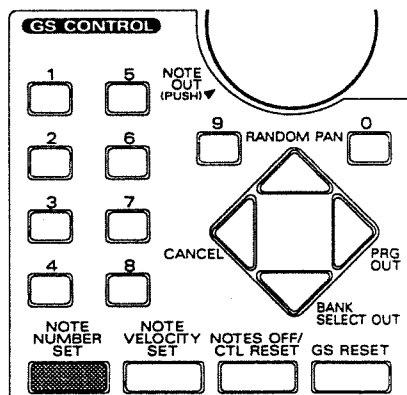
Pressing the Dial will output a Note ON, while releasing the Dial will output a Note OFF. Note ON/OFF messages contain information about pressing and releasing keys.



(Setting the Note Number)

First, specify the desired Note Number (data value). Pressing [NOTE NUMBER SET(◀)] will then enter the specified Note Number. (A Note Number is a number assigned to each key.)

*** You can set any Note Number from 0 — 127.**



If you rotate the Dial without releasing [NOTE NUMBER SET(◀)], the Note Number you have specified will be set to the Note Number selected on the MCR-8.

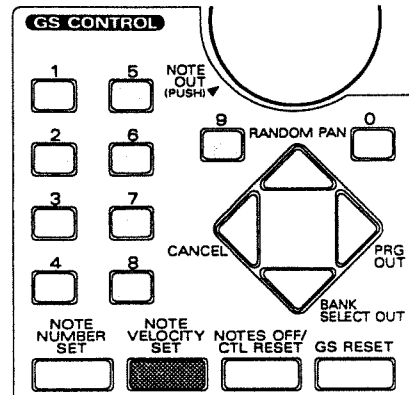
*** When the MCR-8 is switched on, Note A4 (#69) will be automatically selected.**

(Setting the Velocity)

First, specify the velocity (data value). Pressing [NOTE VELOCITY SET(▶)] will then enter the value you have specified.

Velocity represents how fast you press each key on the keyboard — this affects the volume and tone quality of the sound.

*** You can set any velocity value from 1 — 127.**

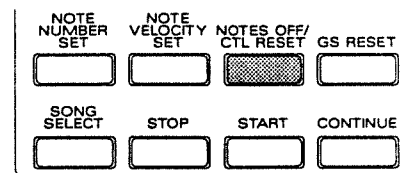


If you rotate the Dial without releasing [NOTE NUMBER SET(▶)], the Note Velocity you have specified will be set to the Note Velocity selected on the MCR-8.

*** When the MCR-8 is switched on, a Velocity value of 96 will be automatically selected.**

(Muting a Part)

The [NOTES OFF/CTL RESET(●)] button can be used as a switch for All Note Off/Reset All Controllers. That is, pressing [NOTES OFF/CTL RESET(●)] will set all the Note ON messages to Note OFF messages.



<Editing the Parameters that affect the entire GS sound module>

(Adjusting the Pan of the entire Part)

Using the [MASTER C1] knob, you can adjust the pan (stereo location) of the entire Part.

** When the GS sound module is connected to a mono sound system, the pan setting will have no affect.*

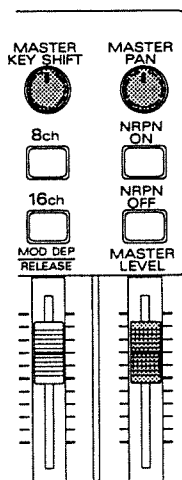
(Adjusting the Volume of the entire Part)

Using the [MASTER C2] slider, you can adjust the volume of the entire Part.

(Setting the Key Shift of the entire Part)

The [C1-8/16]'s volume is the Key Shift value for the entire Part.

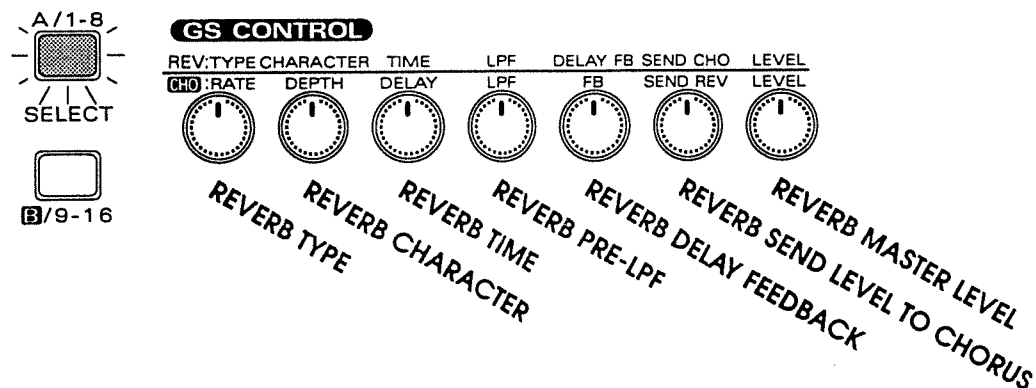
** Even if you change this setting, the pitch of the Drum Part will not be affected.*



Editing Parameters

(Editing Reverb Parameters)

When SELECT A is lit, [C1] determines the Reverb setting. Each Reverb parameter set here affects the entire Part.



REVERB TYPE: You can choose one of 8 different Reverb Types pre-programmed into a GS sound module.

** Editing the REVERB TYPE will automatically alter the CHARACTER, TIME, PRE-LPF, DELAY FEEDBACK, SEND LEVEL TO CHORUS to the values pre-programmed in the GS sound module.*

REVERB CHARACTER:

This parameter determines the reverb type.

Rooms 1/2/3:

These reverbs simulate various room acoustics.

Halls 1/2:

These reverbs simulate the reverberations created in a concert hall. (These are deeper reverbs than the Room settings.)

Plate:

This setting simulates the reverberations of a metal plate. (It has a distinctive metallic quality about it.)

Delay:

This setting can be used for creating various echo effects (multiple reflections).

Pan Delay:

With this unique parameter, sounds "bounce" from one speaker to the other, creating a real sense of motion.

REVERB TIME: This parameter controls different reverb times (length) depending on how the REVERB CHARACTER has been set.

REVERB CHARACTER: Room, Hall or Plate:

The Reverb Time adjusts the length of the reverberation decay. Higher values create a longer reverberation time.

REVERB CHARACTER: Delay or Pan Delay:

The Time parameter adjusts the time needed for the delay sound to be heard after the direct sound is played.

REVERB PRE-LPF: This parameter adjusts the amount of upper frequencies that will be attenuated. That is, setting this value higher will cut more upper frequencies, making the reverberation sound softer.

REVERB DELAY FEEDBACK:

This parameter adjusts the number of feedback sounds when Delay or Pan Delay is selected. Setting a higher value will increase the number of repetitions. When it is set to "0", a single delay sound will be created.

REVERB SEND LEVEL TO CHORUS:

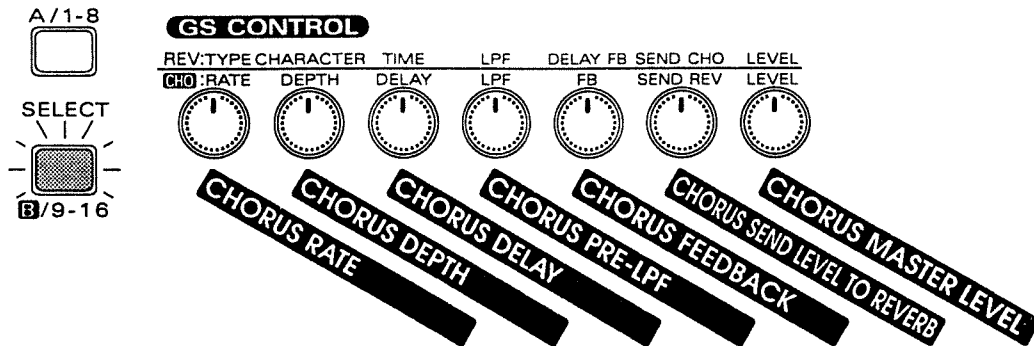
This parameter adjusts the amount of chorus added to the reverberation.

REVERB MASTER LEVEL:

This parameter adjusts the volume of the reverb or delay sound.

(Editing Chorus Parameters)

When "SELECT B" is lit, [C1] determines the Chorus setting. Each Chorus parameter set here affects the entire Part.



CHORUS RATE: This parameter determines the chorus rate (speed). Higher values result in faster chorus effects.

CHORUS DEPTH: This parameter determines the depth of the chorus. Increasing the value will deepen the chorus effect.

CHORUS DELAY: This parameter sets the time needed for the chorus sound to be produced after the direct sound is played. Increasing the value will make the time longer, creating a "doubling" effect.

CHORUS PRE-LPF: This parameter adjusts the amount of upper frequencies that will be attenuated. That is, setting this value higher will cut more upper frequencies, making the chorus sound softer.

CHORUS FEEDBACK: This parameter adjusts the amount of chorus feedback. Setting a higher value will increase the number of repetitions, creating a flanger effect. When set to 0, a normal chorus sound (without feedback) will be created.

CHORUS SEND LEVEL TO REVERB: This parameter adjusts the amount of reverberation added to the chorus sound.

CHORUS MASTER LEVEL: This parameter adjusts the volume of the chorus sound. Increasing the value will raise the volume.

Using a Sequencer

[SONG SELECT(◀◀)], [STOP(■)], [START(▶)] and [CONTINUE(▶▶)] are used to control a sequencer.

(Song Selection)

To select a song, first specify the Song Number (data value), then press [SONG SELECT(◀◀)].

** You can select any Song Number from 1 — 128.*

Rotate the Dial while holding [SONG SELECT(◀◀)], and the Song Select Number you have specified will be transmitted.

** When the MCR-8 is switched on, Song Select Number 1 will be automatically selected.*

<STOP>

This button stops the playback of song data.

<START>

This button starts playback of song data.

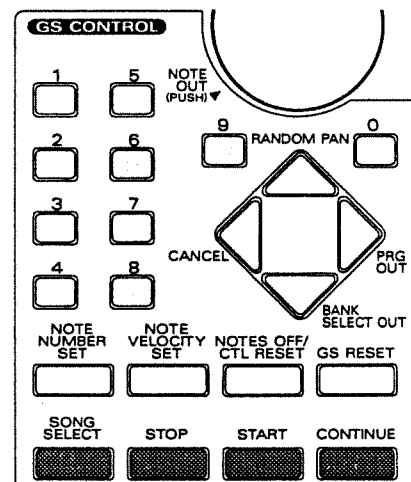
<CONTINUE>

This button resumes playback of the song data which has been stopped.

** The MCR-8 does not output MIDI clock messages (F8H) and therefore cannot control the start/stop functions on some sequencers.*

** Be sure that the sequencer is set to the Remote mode.*

Remote Mode: This mode plays back data with Start and Continue messages from an external device, using the internal clock in the sequencer.



Other Procedures

(Setting the NRPN Receive Switch for the entire Part)

[MASTER S1] turns on the NRPN Receive Switch for the entire Part.
 [MASTER S2] turns off the NRPN Receive Switch for the entire Part.



In a GS sound module, the NRPN Receive is automatically turned off when the unit is switched on, or when it receives a GM System On. Therefore you should press [MASTER S1] to turn it on. When the NRPN Receive Switch is turned on, you can edit the parameters that use the NRPN.

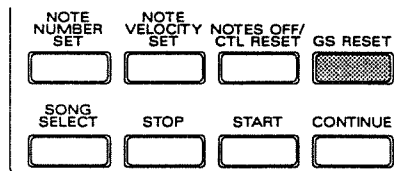
** When a GS sound module receives a GS Reset message, the NRPN Receive Switch will be automatically turned on.*

[About NRPN (Non Registered Parameter Number)]

Control Change provides a special area where you can designate a unique function in a device without defining that function. This area is called NRPN. On a GS module, parameters can be edited using the NRPN.

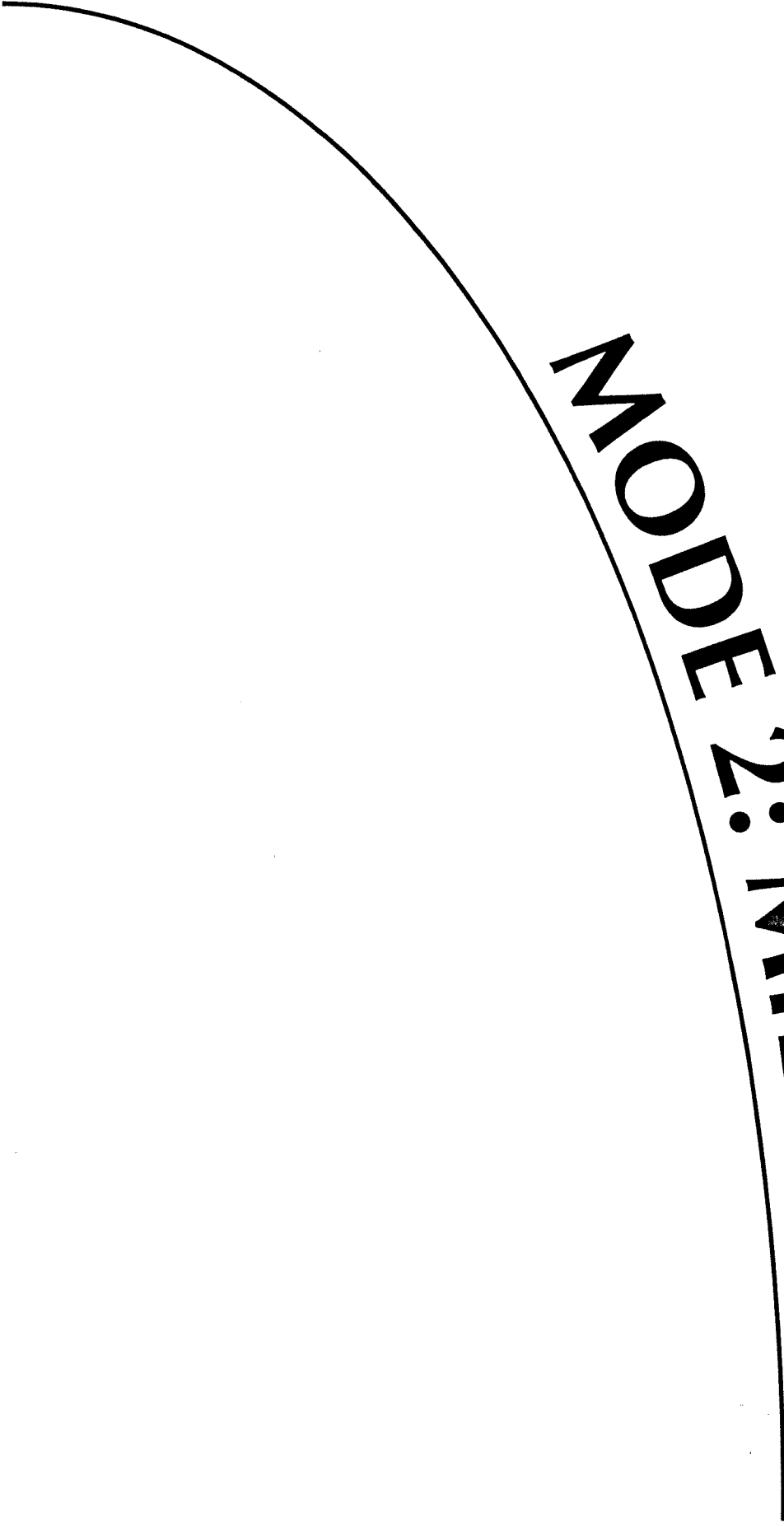
(Sending the GS Reset)

[GS RESET(■)] can be used as the GS Reset switch.
 Pressing this button will restore the basic settings of the GS sound module.



[NOTE]

When the settings on the GS sound module are not changed, press [GS RESET(■)] or [NRPN ON(MASTER S1)] so that the GS sound module can receive NRPN.
 If the Device ID Number in the GS sound module has been changed, you must set the Device ID Number on the MCR-8 to match it. If you do not change the Device ID Number on the MCR-8, it will remain as Number 17. To change Device ID Numbers, see "Changing Device ID Numbers" on page 50.



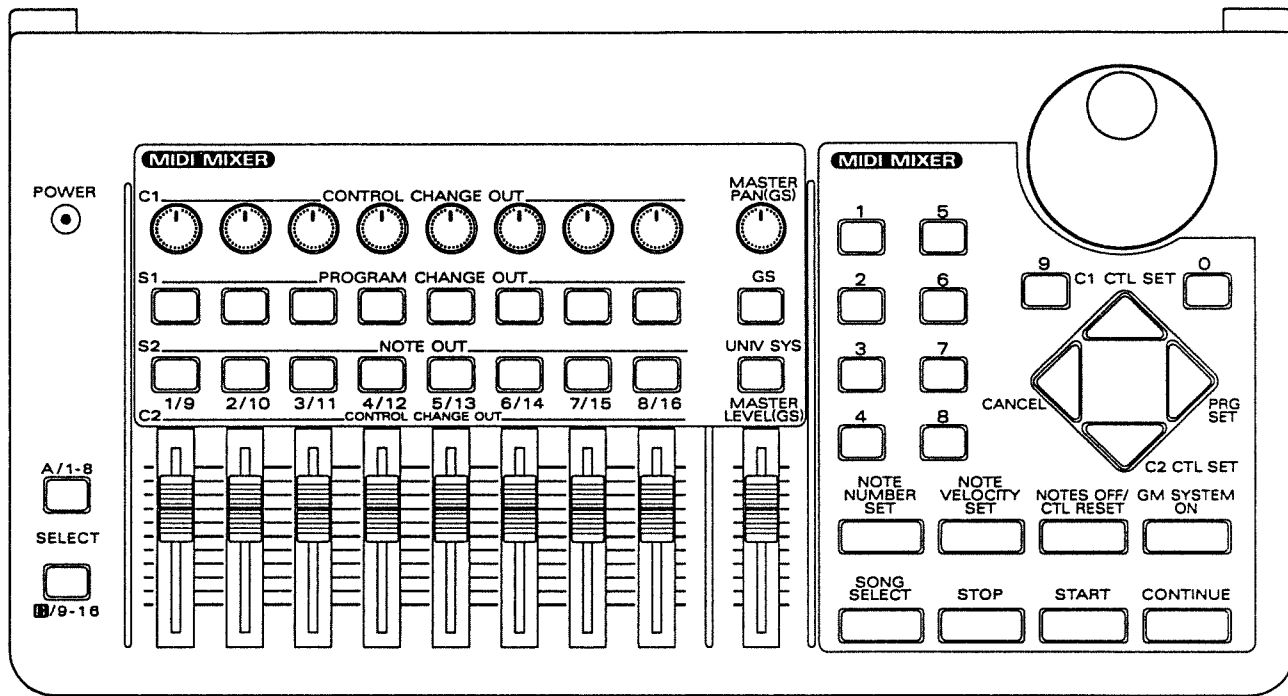
MODE 2: MIDI Mixer

This is the mode that directly controls a multi-timbral sound module. It features 8 channels x 2 (SELECT A/B), allowing you to control 8 channels of data simultaneously.

In this mode, almost all the Control Changes (00 — 95) can be assigned to the MCR-8's panel controls, and Program Change and Note messages to each channel individually.

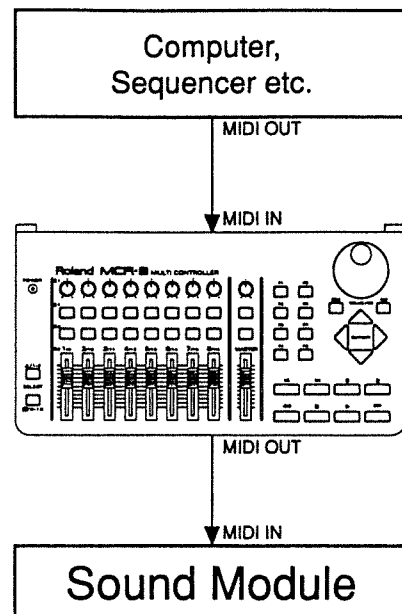
By using a sequencer in this mode, you can achieve "Compu-Mixing" via MIDI.

It is also possible to control the volume and other parameters in real-time (on the play display of the computer sequence software). (This applies only to software that can receive external MIDI messages.)

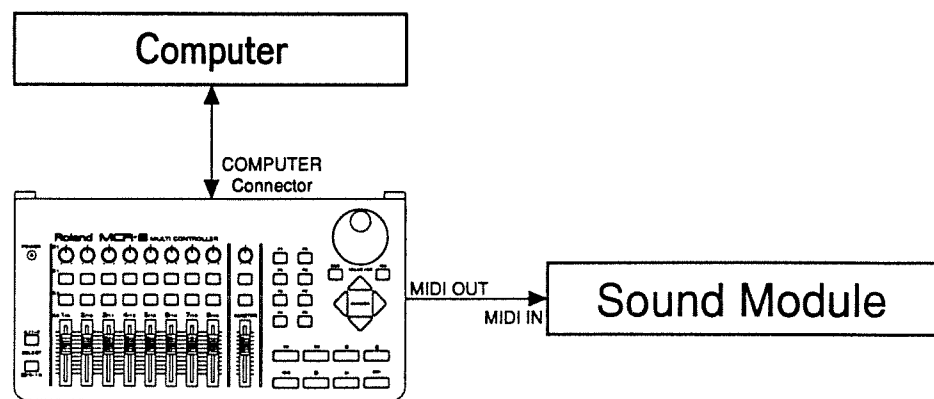


* A template (plastic sheet) for the MIDI Mixer mode is supplied with the MCR-8. When using the MCR-8 in Mode 2, place the template (**MIDI MIXER**) onto the unit.

<Setup Examples>



** Set the Computer Switch on the rear of the MCR-8 to "MIDI".*



** Set the Computer Switch on the rear of the MCR-8 depending on the computer you use.*

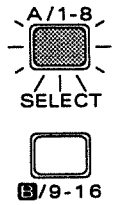
** When a computer is connected to the Computer Connector on the MCR-8, the operations of the master section may not be recognized by some software.*

** When a computer is connected to the Computer Connector on the MCR-8, the computer's display may not change even when making changes on the MCR-8.*

About the Transmit MIDI Channel

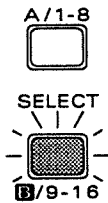
(When SELECT A is selected)

Each channel sends data for channels 1 — 8.



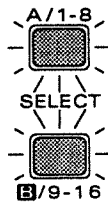
(When SELECT B is selected)

Each channel sends data for channels 9 — 16.



(When SELECT A and SELECT B are both selected)

Pressing [SELECT A] and [SELECT B] simultaneously will select both SELECT A and SELECT B. The data of channels 1 — 8 and 9 — 16 are sent simultaneously.



(When neither SELECT A or SELECT B is selected)

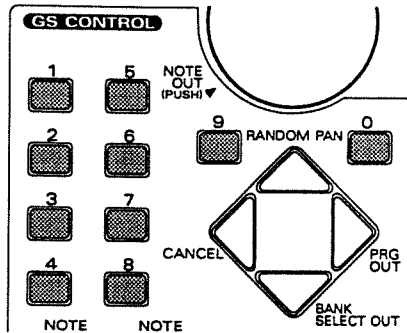
No data is sent even by operating [C1], [S1], [S2] and [C2].

** The positions of [C1] and [C2] can be changed without sending data.*



Data Value Entry

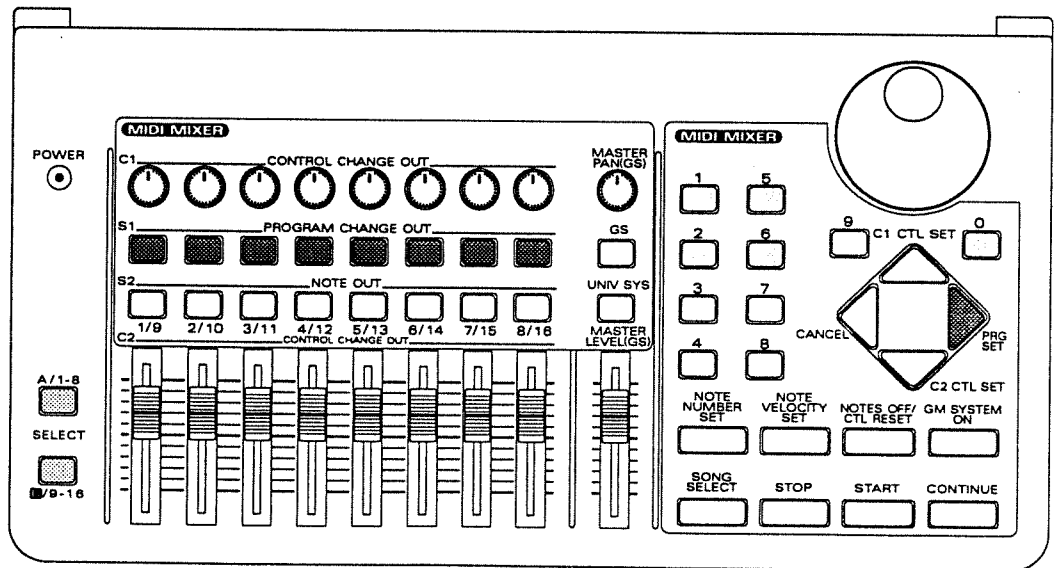
To enter the value, use [F1 — F8, DEC and INC] as numerical keys 0 — 9. If you wish to cancel entering values (or to start over), press [CANCEL(◀)].



Sending Program Change Messages

First, specify the Program Number (data value) you wish to send and then press [PRG SET(▶)]. Then press [S1] that corresponds to the channel you wish to send the Program Change message to. The Program Change message is transmitted.

** You can set any Program Number from 1 — 128.*



If you rotate the Dial without releasing [PRG SET(▶)], the Program Change message you have specified will be sent to the Program Number set on the MCR-8. Then press [S1] that corresponds to the channel you wish to send the Program Change message to. The Program Change message you have specified is transmitted.

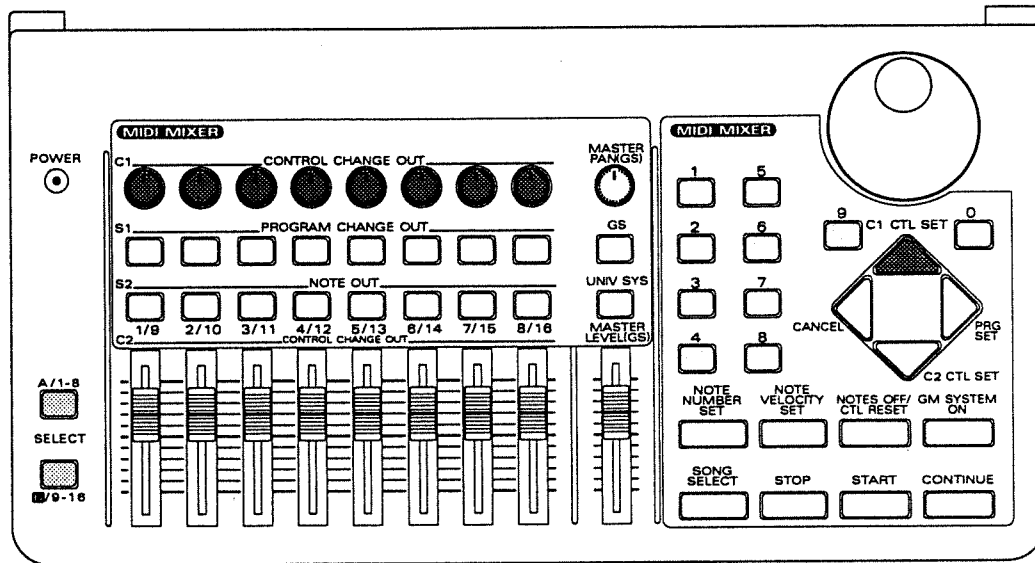
** When the MCR-8 is switched on, Program Number 1 will be automatically selected.*

Sending Control Change Messages

You can set any Control Number from 0 — 95.

(Setting the C1 knob)

First, specify the Control Number (data value) you want, then press [C1 CTL SET(Δ)]. Then rotate [C1] that corresponds to the channel you wish to send the Control message to. The Control Number you have specified will be transmitted.

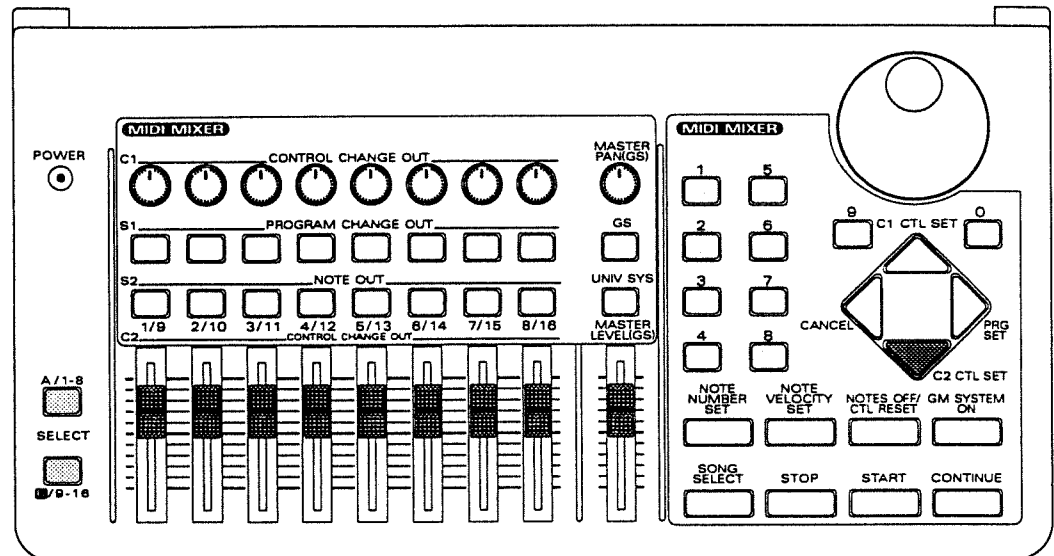


If you rotate the Dial without releasing [C1 CTL SET(Δ)], the Control Number you have specified will be sent to the Control Number set on the MCR-8. Next, rotate [C1] that corresponds to the channel you wish to send the Control message to. The Control Number you have specified will be transmitted.

** When the MCR-8 is switched on, Control Number 10 (PAN) will be automatically selected.*

(Setting the C2 Slider)

First, specify the Control Number (data value), then press [C2 CTL SET(▽)]. Next, press [C2] that corresponds to the channel you wish to send the Control Change message to. The Control Number you have specified will be transmitted.



If you rotate the Dial without releasing [C2 CTL SET(▽)], the Control Number you have specified will be set to the Control Number set on the MCR-8. Next, by operating [C2] that corresponds to the channel to which you wish to send the Control message, you can send the Control Number you have specified.

*** When the MCR-8 is switched on, Control Number 07 (VOLUME) will be automatically selected.**

<Editing the Parameters that affect the entire sound module>

(Setting the overall Panning)

Using [MASTER C1], you can set the Master Pan (overall panning) for a GS sound module, or the Master Balance of the Universal Realtime Exclusive Format.

(Setting the overall Volume)

Using [MASTER C2], you can set the Master Volume (overall volume) of a GS sound module or the Master Volume of the Universal Exclusive Format.

(Switching GS/Universal Exclusive in the Master section)

You can set the format of the data to be transmitted using the Master section. Pressing [GS(MASTER S1)] will output the "MASTER C1/C2" operation with the data in the GS Format. Pressing [UNIVSYS(MASTER S2)] will output the "MASTER C1/C2" operation with the data in the Universal Realtime Exclusive Format.

- * *When the MCR-8 is switched on, the GS Format will be automatically selected.*
- * *You cannot control a sound module that does not feature GS Format compatibility or the Universal Realtime Exclusive Format.*



<About Universal Exclusive>

Exclusive messages are those that are unique to a specific manufacturer, and Universal Exclusive Messages are common to most units. Any sound module that can receive Universal Exclusive messages allows you to adjust its overall volume or balance.

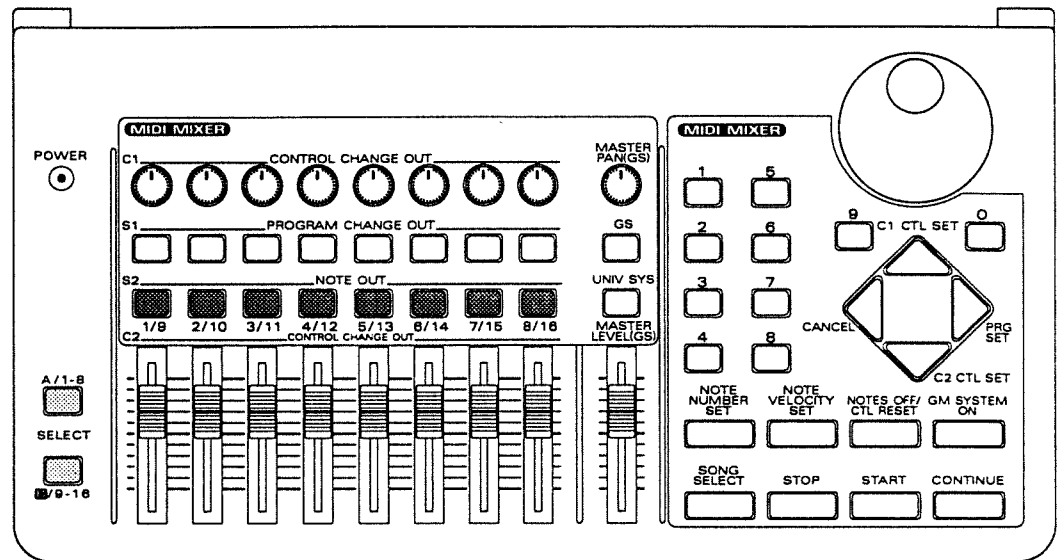
- * *Universal Exclusive messages include non-realtime exclusive, realtime exclusive, etc. Master Balance and Master Volume are included in the Universal Realtime Exclusive messages.*

Sending Messages related to Notes

Note messages carry information about a keyboard performance. When a Note ON message is output, the sound specified by the corresponding Note Number and Velocity will be played.

(Note ON/OFF)

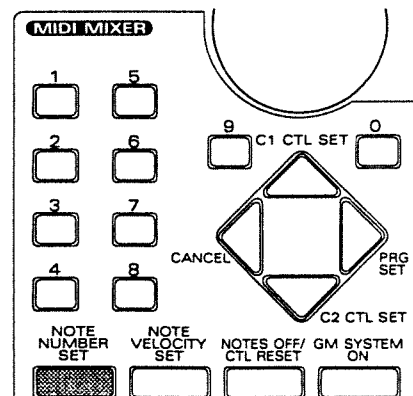
Press [S2] that corresponds to the channel to which you wish to send the message, and the Note ON will be transmitted. Releasing [S2] will transmit a Note OFF message. That is, Note ON and Note OFF messages describe playing and releasing the keys on a keyboard.



(Setting the Note Number)

Specify the Note Number (data value) you want and then press [NOTE NUMBER SET(◀)] to enter the Note Number.

** You can set any Note Number from 0 — 127.*



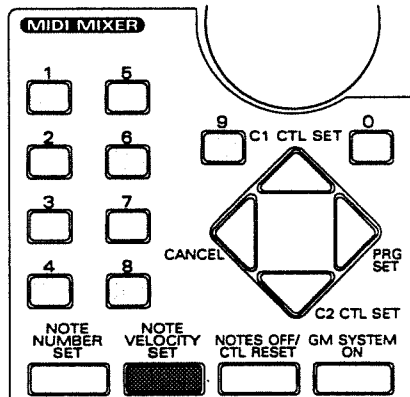
If you rotate the Dial without releasing [NOTE NUMBER SET(◀)], the Note Number you have specified will be set to the Note Number pre-programmed on the MCR-8.

** When the MCR-8 is switched on, A4(#69) will be automatically set.*

(Setting the Velocity)

Specify the Velocity value (data value) then press [NOTE VELOCITY SET(▶1)].

*** You can set any Velocity value from 1 — 127.**



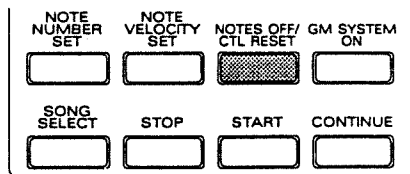
If you rotate the Dial without releasing [NOTE VELOCITY SET(▶1)], the Note Velocity you have set will be set to the Note Velocity pre-programmed on the MCR-8.

*** When the MCR-8 is switched on, Velocity value 96 will be automatically selected.**

(Muting)

[NOTES OFF/CTL RESET(●)] button is used to send "All Note OFF" and "Reset All Controllers" messages. Pressing [NOTE OFF/CTL RESET(●)] will turn off all the Note ON sounds in all the channels.

*** This muting function does not apply to devices that don't feature All Note Off or Reset All Controllers messages.**



Using a Sequencer

[SONG SELECT(◀◀)], [STOP(■)], [START(▶▶)] and [CONTINUE(▶▶▶)] can be used for controlling a sequencer.

(Song Selection)

First, specify the Song Number (data value), then press [SONG SELECT(◀◀)].

*** You can set any Song Number from 1 - 128.**

If you rotate the Dial without releasing [SONG SELECT(◀◀)], the Song Select Number you have specified will be output to the Song Select Number pre-programmed on the MCR-8.

*** When the MCR-8 is switched on, Song Select Number 1 will be automatically selected.**

<STOP>

This button stops the playback of song data.

<START>

This button starts playback of song data.

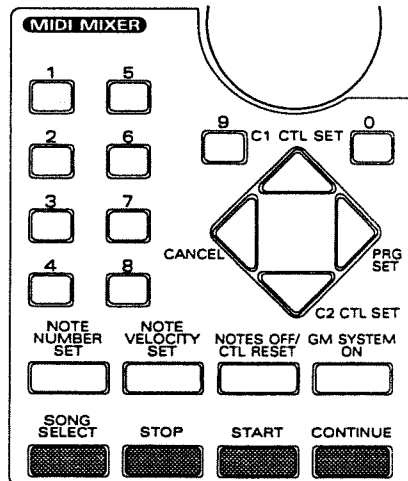
<CONTINUE>

This button resumes playing song data which has been stopped.

*** The MCR-8 does not output MIDI clock messages (F8H) and therefore cannot control the Start/ Stop functions of some sequencers.**

*** The sequencer connected to the MCR-8 should be set to the Remote Mode.**

Remote Mode: This mode plays back data with Start and Continue messages from an external device, using the internal clock in the sequencer.

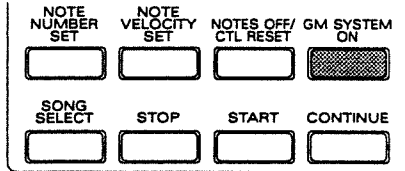


Other Procedures

(Sending GM System ON)

[GM SYSTEM ON(■)] is used to activate the GM SYSTEM settings.

Pressing the [GM SYSTEM ON (■)] button will activate the basic settings on a GM sound module.



MODE 3 and 4: Software Control

These modes are provided for controlling computer software, synthesizers, effects, etc.
Depending on the software of device you use, select Mode 3 or 4.

The same knobs and buttons function differently depending on the software or device connected. Please read the relevant owner's manual.

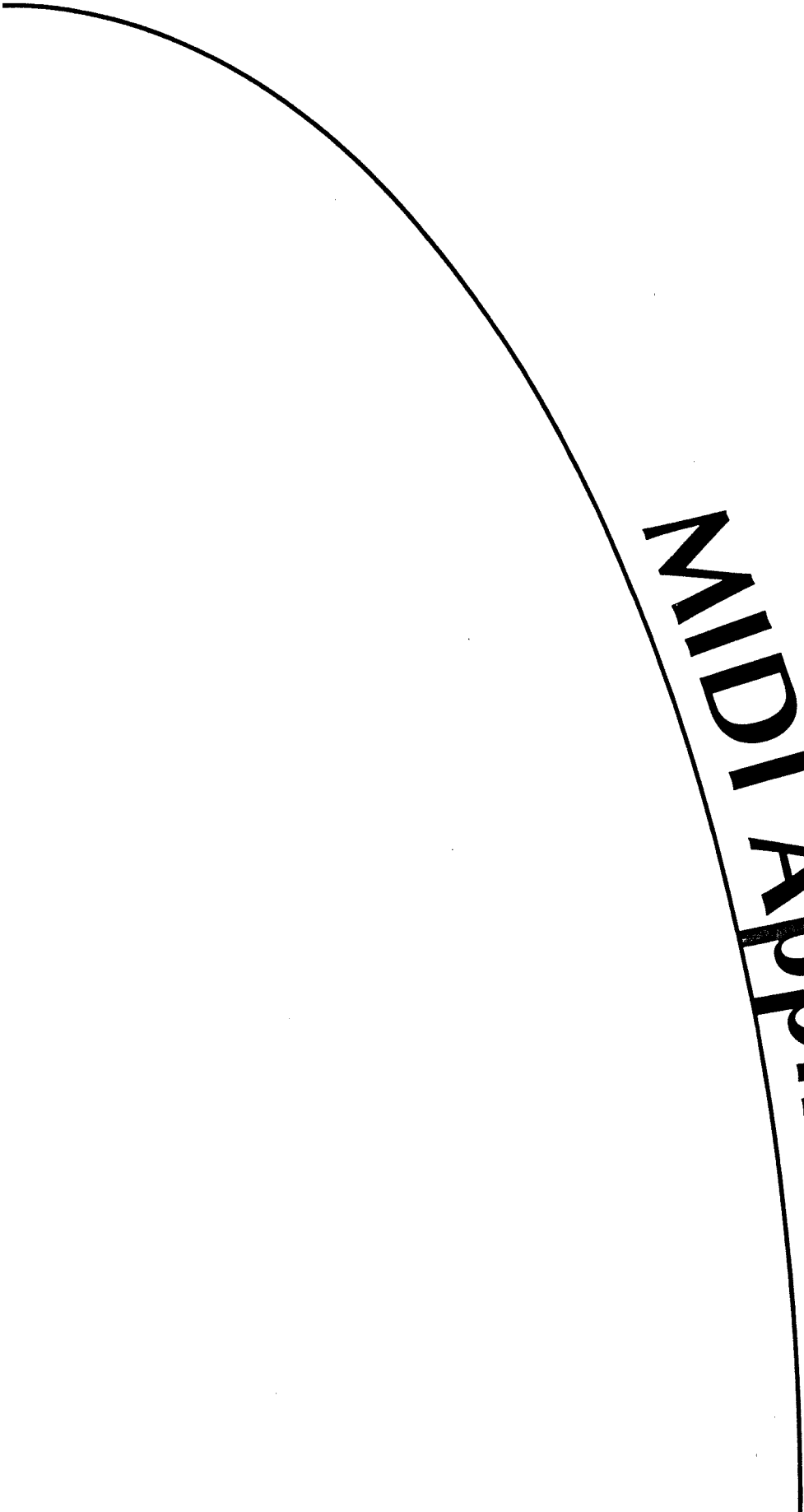
See "Setup and Computer Switch" on page 11 to set up the units correctly.

** The supplied blank template can be used depending on the software or device you have.*

MIDI Channel Setting for Mode 4

Mode 4 transmits Control Change messages using only one MIDI channel. You should change MIDI channels depending on the software or device you use. If you do not change MIDI channels when you switch on the MCR-8, channel 16 will be automatically set.

** See "MIDI Channel Setting for Mode 4" on page 49 to change MIDI channels.*



MIDI Applications

About MIDI

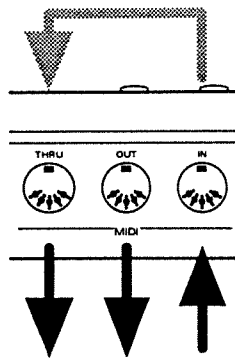
MIDI is the acronym for “Musical Instrument Digital Interface.” It is an industry-wide standard that allows for data (such as that representing the music played, or for changes in sounds used) to be exchanged among various instruments and computers. As long as they are MIDI compatible, all devices, regardless of model or manufacturer, can exchange whatever performance data they are both equipped to ‘understand.’

The Exchange of MIDI Data

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

About MIDI Connectors

In carrying out the exchange of MIDI data, the three connectors shown below are used. MIDI cables can be routed from these connectors in varying ways depending on the kind of setup you have in mind.



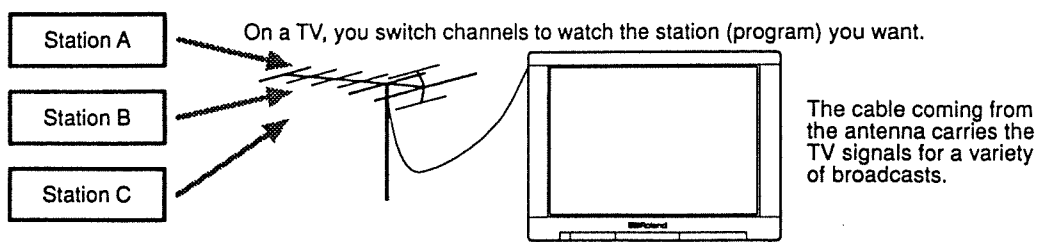
- MIDI IN:** Receives data from another MIDI device.
- MIDI OUT:** Transmits data originating in the unit.
- MIDI THRU:** Sends out an exact copy of the data received at MIDI IN.

** In theory, any number of MIDI devices could be connected together using MIDI THRU connectors, but it is best to consider 4 or 5 devices as being the practical limit. This is because the further down the line a device is located, the greater the likelihood of signal deterioration or delay.*

MIDI Channels

In MIDI communications, a single cable simultaneously carries different streams of performance information for a multiple number of MIDI devices. This is possible thanks to the concept of MIDI channels.

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



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

There is, however, one major difference: a TV lets you see only one program at a time, whereas on the GS or Multi-timbral Sound Module you can receive and play data on up to 16 channels at once! This way you can take 16 Parts, one per channel, and play them all at once, with a different instrument for each channel. In general, any sound module that can do this is called "multi-timbral".

MIDI Messages Recognized by the MCR-8

In order to convey the great variety of expression possible with music, the MIDI standard contains a large range of data 'types' (messages). MIDI messages can be divided into two main types: messages that are handled on each channel (Channel messages); and messages that are handled independently of channels (System messages).

CHANNEL MESSAGES

These messages are used to convey the events of a performance. In most circumstances, they alone are sufficient for providing the range of control needed. The specific results obtained by the various MIDI message of this type are determined by the settings on the unit receiving them.

Program Change Messages

These messages are used for conveying information about changes to another sound. Sounds are changed using Program Change Numbers, numbered from 1 through 128. The Program Numbers on the MCR-8 correspond numerically with MIDI Program Change Numbers.

Control Change Messages

Control Change messages serve in enhancing the expressiveness of a performance. Every available function can be identified by its own Control Number. The functions which are available for control can vary widely depending on the MIDI device being used. On the MCR-8, these messages are used to control selected parameters.

Pitch Bend Messages

These messages convey the action of a Pitch Bend Lever (Wheel) that is found on many synthesizers.

Note Messages

These contain information about keyboard performance, including the following:

Note number	A number indicating the note (key) that was pressed or released.
Note on	A message indicating that a note (key) was pressed.
Note off	A message indicating that a note (key) was released.
Velocity	A number indicating how strongly the note (key) was pressed.

SYSTEM MESSAGES

System messages include Exclusive messages, messages used for synchronizing the performance of multiple units, and other messages employed for diagnostic purposes. The MCR-8 supports the use of Exclusive messages.

Exclusive Messages

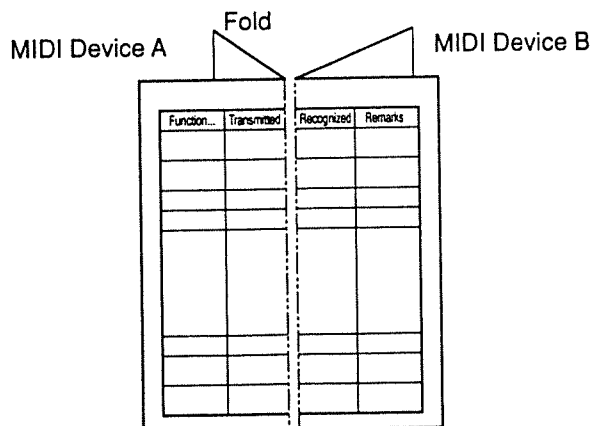
Exclusive messages handle information related to a unit's own unique sounds, or other device-specific information.

Whenever Exclusive messages are to be used for communication, both devices must be set to the same Device ID number.

MIDI Implementation Chart

MIDI has made it possible for a wide range of musical instruments to communicate with each other, but that doesn't necessarily mean that the many types of data will all be understood. If communication between two connected MIDI devices is to be successful, it must take place using only the types of data that they have in common.

It is for this reason that every owner's manual — for all kinds of MIDI devices — always includes a MIDI Implementation Chart as a quick reference to the types of MIDI messages it is capable of handling. You should compare the MIDI Implementation Charts for any two devices in order to find out which types of data can be exchanged. Since these charts are standardized, you can place them so they overlap. This way you can easily compare the receiving device with the transmitting device.



**For more detailed information about handling MIDI messages, refer to "MIDI Implementation" on page 64.*

The GM System and GS Format



What is the General MIDI System?

The General MIDI System is a universal set of specifications for sound generating devices which has been agreed upon by both the Japanese MIDI Standards Committee and the American MMA (MIDI Manufacturer's Association). These specifications seek to allow for the creation of music data which is not limited to equipment by a particular manufacturer or to specific models.

The General MIDI System defines things such as the minimum number of voices that should be supported, the MIDI messages that should be recognized, which sounds correspond to which Program Change numbers, and the layout of rhythm sounds on the keyboard. Thanks to these specifications, any device that is equipped with sound sources supporting the General MIDI System will be able to accurately reproduce General MIDI Scores (music data created for the General MIDI System), regardless of the manufacturer or model.



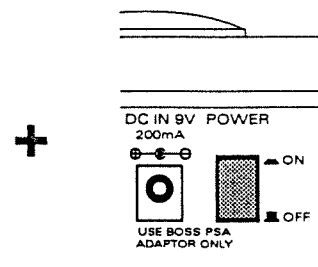
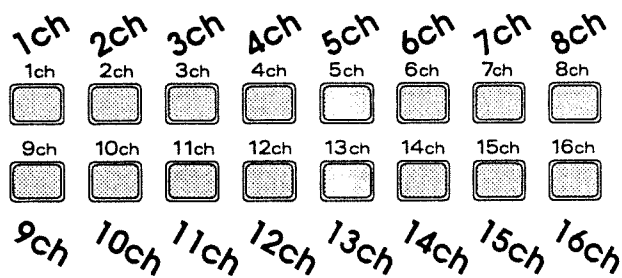
What is the GS Format?

The GS Format is a standardized set of specifications for Roland's sound sources which defines the manner in which multi-timbral sound generating units will respond to MIDI messages. The GS Format also complies with the General MIDI System.

The GS Format also defines a number of other details. These include unique specifications for sounds and the functions available for Tone editing and effects (chorus and reverb), and other specifications concerning the manner in which sound sources will respond to MIDI messages. Any device that is equipped with GS Format sound sources can faithfully reproduce GS Music Data (music data created under the GS Format).

MIDI Channel Setting for Mode 4

While holding down the button that corresponds to the MIDI channel you wish to set as shown below, switch on the MCR-8.



Turn ON

**The MIDI channel you have set here is not written in memory. So you must use the above procedure each time you switch on the unit.*

** Changing Device ID Numbers (described below) will automatically change MIDI channels.*

Changing Device ID Numbers

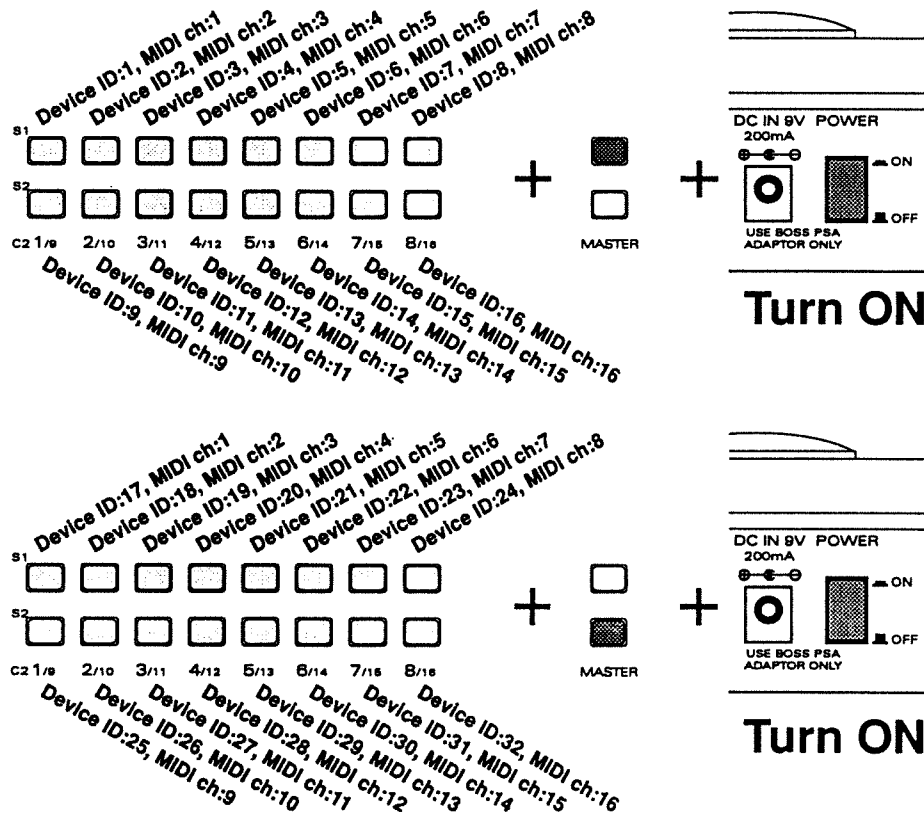
When you use MIDI exclusive messages (especially when using several of the same model), you should change Device ID Numbers to distinguish each device. The Device ID Number should be set to the same number as the connected GS sound module.

If you do not change Device ID Numbers when you switch on the MCR-8, the Device ID Number will be automatically set to 17.

How to change Device ID Numbers:

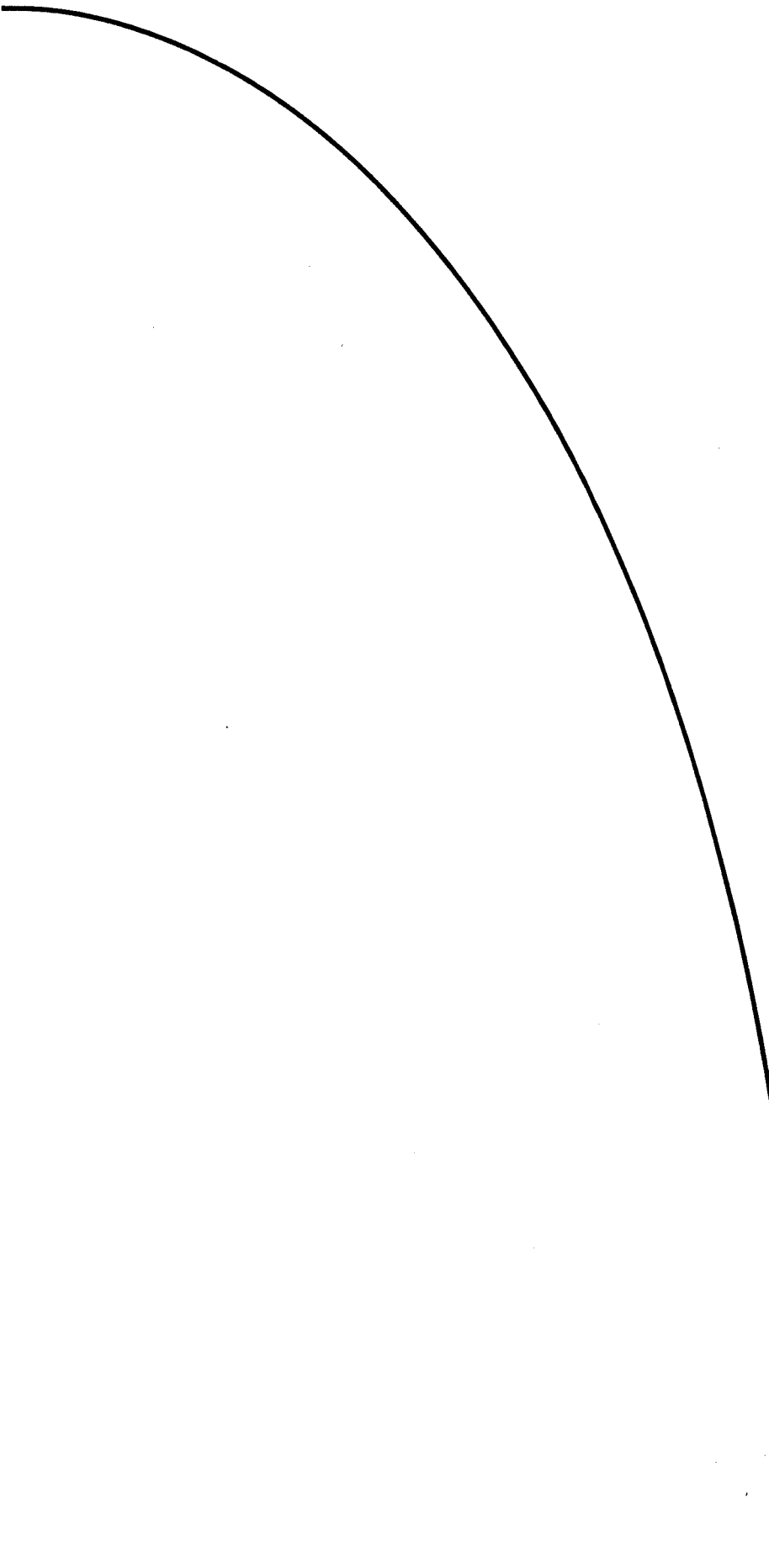
While holding down the following two switches, turn on the MCR-8.

If you change Device ID Numbers, the MIDI channel for Mode 4 should also be changed as described above.



* The Device ID Number you have set is not written into memory, so you must use the above procedure every time you switch on the MCR-8.

Reference



TROUBLESHOOTING

If the system does not work as it should, check the following points. If you are unable to resolve the problem contact your Roland retailer or nearest Roland Service Station.

The MCR-8 cannot be turned on.

Be sure the AC adaptor is connected properly. (Be sure to use only the supplied adaptor.)

The GS sound module does not response.

- Check if the Computer Switch is set to the correct position.
- Check if the Mode Switch is set to GS Control.
- Check if the Device ID Number is set correctly.
- Check if you have specified the Part to be set.
- Check if you have selected a Bank where no sound is stored.
- Check if you are not trying to edit the Drum Part. Check if the NRPN Receive is turned on.
- Check if the Receive Switch on the sound module is turned on.
- Check if the sound module is not muted.

No sound is played on the MIDI device.

- Check if the Computer Switch is set to the correct position.
- Check if the Mode Switch is set to MIDI Mixer (or other correct position).
- Check if the channels are set correctly.
- Check if the Level Parameter (Volume/Expression) was not lowered by a Control Change.
- Check if the Note Number or Velocity is set too low.
- Check if the Note Number is set too high.
- Check if the Note Numbers are properly assigned in the Drum Part.

The sequencer or other device does not respond.

- Check if the Sequencer is set to the Remote Mode.
- Check if your Sequencer features a Remote Mode.
- Check if you have selected more songs than possible.

The computer does not response.

- Check if the Computer Switch is set to the correct position.
- Check if the Mode Switch is set to the correct position.
- Check if the units are connected using proper cables.
- Check if the Soft Thru is set correctly.
- Check if the channels are set correctly for Mode 4.

Other check points

- Check if the cables are damaged.
- Check if the units are connected correctly and securely.
- Determine if an excessive amount of data was transmitted to the MCR-8 all at once.

MIDI Control Change Table

CC	Function	MODE 1	MODE 2	MODE 3	MODE 4
0	Bank Select MSB	down	*2		S1-1
1	Modulation		*2		S1-2
2	Breath Controller		*2		S1-3
3			*2		S1-4
4	Foot Controller		*2		S1-5
5	Portamento Time		*2		S1-6
6	Data Entry MSB	*1	*2		S1-7
7	Main Volume	C2-1	*2		S1-8
8	Balance		*2		pause ■■
9			*2		reset ◀
10	Pan	C2-2	*2		F1
11	Expression Pedal		*2		F2
12	Effect Control 1		*2		F3
13	Effect Control 2		*2		F4
14			*2		F5
15			*2		F6
16	General Controller 1		*2	C1	F7
17	General Controller 2		*2	C2	F8
18	General Controller 3		*2	M-C1, C2	skip ▶
19	General Controller 4		*2		rew ◀◀
20			*2		ff ▶▶
21			*2		stop ■
22			*2		play ▶
23			*2		rec ●
24			*2		dec
25			*2		inc
26			*2		up
27			*2		down
28			*2		left
29			*2		right
30			*2		S-3
31			*2		
32	Bank Select LSB		*2		S1-9
33			*2		S1-10
34			*2		S1-11
35			*2		S1-12
36			*2		S1-13
37			*2		S1-14
38			*2		S1-15
39			*2		S1-16
40			*2		S2-1
41			*2		S2-2
42			*2		S2-3
43			*2		S2-4
44			*2		S2-5
45			*2		S2-6
46			*2		S2-7
47			*2		S2-8
48			*2		C2-9
49			*2		C2-10
50			*2		C2-11

CC	Function	MODE 1	MODE 2	MODE 3	MODE 4
51			*2		C2-12
52			*2		C2-13
53			*2		C2-14
54			*2		C2-15
55			*2		C2-16
56			*2		C1-9
57			*2		C1-10
58			*2		C1-11
59			*2		C1-12
60			*2		C1-13
61			*2		C1-14
62			*2		C1-15
63			*2		C1-16
64	Damper Pedal (Hold 1)		*2		C2-1
65	Portamento		*2		C2-2
66	Sostenuto		*2		C2-3
67	Soft Pedal		*2		C2-4
68			*2		C2-5
69	Hold 2		*2		C2-6
70			*2		C2-7
71			*2		C2-8
72			*2		C1-1
73			*2		C1-2
74			*2		C1-3
75			*2		C1-4
76			*2		C1-5
77			*2		C1-6
78			*2		C1-7
79			*2		C1-8
80	General Controller 5		*2	S1	M-C1
81	General Controller 6		*2	S2	M-C2
82	General Controller 7		*2	F / seq	M-S1
83	General Controller 8		*2	di / cus	M-S2
84			*2		
85			*2		
86			*2		
87			*2		
88			*2		S2-9
89			*2		S2-10
90			*2		S2-11
91	Effect 1 (External Effects) Depth	C2-3	*2		S2-12
92	Effect 2 (Tremolo) Depth		*2		S2-13
93	Effect 3 (Chorus) Depth	C2-4	*2		S2-14
94	Effect 4 (Celeste) Depth		*2		S2-15
95	Effect 5 (Phaser) Depth		*2		S2-16
96					dial

*1 : Sent with NRPN or RPN. C2 — 7, C2 — 9 to C2 — 16.

*2 : Can be set to C1 and C2.

F : F1 to F8

seq : reset, skip, rec, pause, rew, stop, play, ff

cus : dec, inc, up, down, left, right

di : dial, S3

Table of Output Data for Modes 1 - 4

MIDI Implementation <Mode 1>

SELECT	[Hex]	
	C1-1	F0 41 DEV 42 12 40 01 30 v1 SUM F7 Reverb Type
	C1-2	F0 41 DEV 42 12 40 01 31 v1 SUM F7 Reverb Character
	C1-3	F0 41 DEV 42 12 40 01 34 v5 SUM F7 Reverb time
A	C1-4	F0 41 DEV 42 12 40 01 32 v1 SUM F7 Reverb Pre-LPF
	C1-5	F0 41 DEV 42 12 40 01 35 v5 SUM F7 Reverb Delay f.back
	C1-6	F0 41 DEV 42 12 40 01 36 v5 SUM F7 Reverb Send Chorus
	C1-7	F0 41 DEV 42 12 40 01 33 v5 SUM F7 Reverb Level
	C1-8	F0 41 DEV 42 12 40 00 05 v2 SUM F7 Master Key Shift
	C1-9	F0 41 DEV 42 12 40 01 3D v5 SUM F7 Chorus Rate
	C1-10	F0 41 DEV 42 12 40 01 3E v5 SUM F7 Chorus Depth
	C1-11	F0 41 DEV 42 12 40 01 3C v5 SUM F7 Chorus Delay
B	C1-12	F0 41 DEV 42 12 40 01 39 v1 SUM F7 Chorus Pre-LPF
	C1-13	F0 41 DEV 42 12 40 01 3B v5 SUM F7 Chorus Feedback
	C1-14	F0 41 DEV 42 12 40 01 3F v5 SUM F7 Chorus Send Reverb
	C1-15	F0 41 DEV 42 12 40 01 3A v5 SUM F7 Chorus Level
	C1-16	F0 41 DEV 42 12 40 00 05 v2 SUM F7 Master Key Shift
	C2-1	Bn 07 v5 Part Level
	C2-2	Bn 0A v5 Part Pan
	C2-3	Bn 5B v5 Part Reverb Level
A	C2-4	Bn 5D v5 Part Chorus Level
	C2-5	F0 41 DEV 42 12 40 1x 1A v5 SUM F7 Part Velocity Depth
	C2-6	F0 41 DEV 42 12 40 1x 1B v5 SUM F7 Part Velocity Offset
	C2-7	Bn 65 00 (Bn) 64 00 (Bn) 06 v6 Part Bend range
	C2-8	F0 41 DEV 42 12 40 2x 04 v5 SUM F7 Part Modulation depth
	C2-9	Bn 63 01 (Bn) 62 08 (Bn) 06 v4 Part Vibrato Rate
	C2-10	Bn 63 01 (Bn) 62 09 (Bn) 06 v4 Part Vibrato Depth
	C2-11	Bn 63 01 (Bn) 62 0A (Bn) 06 v4 Part Vibrato Delay
B	C2-12	Bn 63 01 (Bn) 62 20 (Bn) 06 v4 Part Cutoff Freq
	C2-13	Bn 63 01 (Bn) 62 21 (Bn) 06 v4 Part Resonance
	C2-14	Bn 63 01 (Bn) 62 63 (Bn) 06 v4 Part Env Attack
	C2-15	Bn 63 01 (Bn) 62 64 (Bn) 06 v4 Part Env Decay
	C2-16	Bn 63 01 (Bn) 62 66 (Bn) 06 v4 Part Env Release
	S1-1	Part set (x) to 1h , (n) to 0h
	S1-2	Part set (x) to 2h , (n) to 1h
	S1-3	Part set (x) to 3h , (n) to 2h
A	S1-4	Part set (x) to 4h , (n) to 3h
	S1-5	Part set (x) to 5h , (n) to 4h
	S1-6	Part set (x) to 6h , (n) to 5h
	S1-7	Part set (x) to 7h , (n) to 6h
	S1-8	Part set (x) to 8h , (n) to 7h
	S1-9	Part set (x) to 1h , (n) to 0h
	S1-10	Part set (x) to 2h , (n) to 1h
	S1-11	Part set (x) to 3h , (n) to 2h
B	S1-12	Part set (x) to 4h , (n) to 3h
	S1-13	Part set (x) to 5h , (n) to 4h
	S1-14	Part set (x) to 6h , (n) to 5h
	S1-15	Part set (x) to 7h , (n) to 6h
	S1-16	Part set (x) to 8h , (n) to 7h
	S2-1	Part set (x) to 9h , (n) to 8h
	S2-2	Part set (x) to 0h , (n) to 9h
	S2-3	Part set (x) to Ah , (n) to Ah
A	S2-4	Part set (x) to Bh , (n) to Bh
	S2-5	Part set (x) to Ch , (n) to Ch
	S2-6	Part set (x) to Dh , (n) to Dh
	S2-7	Part set (x) to Eh , (n) to Eh
	S2-8	Part set (x) to Fh , (n) to Fh
	S2-9	Part set (x) to 9h , (n) to 8h
	S2-10	Part set (x) to 0h , (n) to 9h
	S2-11	Part set (x) to Ah , (n) to Ah
B	S2-12	Part set (x) to Bh , (n) to Bh
	S2-13	Part set (x) to Ch , (n) to Ch
	S2-14	Part set (x) to Dh , (n) to Dh
	S2-15	Part set (x) to Eh , (n) to Eh
	S2-16	Part set (x) to Fh , (n) to Fh

```

F1      memory set number 1
F2      memory set number 2
F3      memory set number 3
F4      memory set number 4
F5      memory set number 5
F6      memory set number 6
F7      memory set number 7
F8      memory set number 8

▶ reset note number set (pp)
▶ skip note velocity set (qq)
● rec  Bn 79 00  reset all controllers
      Bn 7B 00  all notes off
      Bn 78 00  all sounds off

■ pause F0 41 DEV 42 12 40 00 7f 00 41 F7  GS Reset
▶ rew  F3 tt      song select
▶ stop FC        stop
▶ play FA        start
▶ ff   FB        continue

MASTER-C1  F0 41 DEV 42 12 40 00 06 v5 SUM F7  Master Pan
MASTER-C2  F0 41 DEV 42 12 40 00 04 v5 SUM F7  Master Level
MASTER-S1  F0 41 DEV 42 12 40 1x 0A 01 SUM F7  NRPN ON
           All part
MASTER-S2  F0 41 DEV 42 12 40 1x 0A 00 SUM F7  NRPN OFF
           All part
           Bn 65 7F (Bn) 64 7F  RPN NULL
           All part

Dial-clockwise  while depress right sw is inc ss and Cn ss
                while depress reset sw is inc pp
                while depress skip sw is inc qq
                while depress rew sw is inc tt and F3 tt

Dial-c clockwise while depress right sw is dec ss and Cn ss
                while depress reset sw is dec pp
                while depress skip sw is dec qq
                while depress rew sw is dec tt and F3 tt

Dial-sw(S3)  9n pp qq/00  Note out

dec          memory set number 9
inc          memory set number 0
up           F0 41 DEV 42 12 40 1x 1C 00 SUM F7  RANDOM PAN
down        Bn 00 rr 20 00 Cn ss  Bank Select Out
left        Cancel
right       Cn ss  Program change Number Out

```

```

DEV: 0-1Fh DEVICE ID (default : 10h)
n: 0- Fh MIDI Channel
x: 0- Fh Block number
v1: 00-07h data
v2: 28-58h data
v3: 40-58h data
v4: 0e-72h data
v5: 00-7Fh data
v6: 00-18h data
pp: 00-7Fh note number
qq: 01-7Fh note velocity / RELEASE 00
rr: 00-7Fh bank number
ss: 00-7Fh program change number
tt: 00-7Fh song select number

```

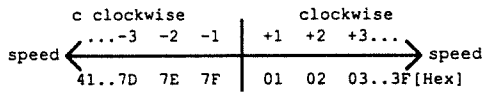

MIDI Implementation <Mode 2>

SELECT	[Hex]		
A	C1-1	B0 gg v5	F1 memory set number 1
	C1-2	B1 gg v5	F2 memory set number 2
	C1-3	B2 gg v5	F3 memory set number 3
	C1-4	B3 gg v5	F4 memory set number 4
	C1-5	B4 gg v5	F5 memory set number 5
	C1-6	B5 gg v5	F6 memory set number 6
	C1-7	B6 gg v5	F7 memory set number 7
	C1-8	B7 gg v5	F8 memory set number 8
B	C1-9	B8 gg v5	◀ reset S2 note number set (kk)
	C1-10	B9 gg v5	▶ skip S2 note velocity set (ll)
	C1-11	BA gg v5	● rec Bm 79 00 reset all controllers
	C1-12	BB gg v5	Bm 7B 00 all note off
	C1-13	BC gg v5	Bm 78 00 all sounds off
	C1-14	BD gg v5	and all channels
	C1-15	BE gg v5	
	C1-16	BF gg v5	
A	C2-1	B0 ii v5	■ pause F0 7E 7F 09 01 F7 GM system on
	C2-2	B1 ii v5	▶ rew F3 uu song select
	C2-3	B2 ii v5	■ stop FC stop
	C2-4	B3 ii v5	▶ play FA start
	C2-5	B4 ii v5	▶ ff FB continue
	C2-6	B5 ii v5	MASTER-C1 if GS master level mode (Default)
	C2-7	B6 ii v5	F0 41 DEV 42 12 40 00 06 v5 SUM F7 Master Pan
	C2-8	B7 ii v5	if Universal realtime sysEX mode
B	C2-9	B8 ii v5	F0 7F 7F 04 02 00 v5 F7 Master Balance
	C2-10	B9 ii v5	(F0 7F 7F 04 02 v5 v5 F7)
	C2-11	BA ii v5	MASTER-C2 if GS master level mode (Default)
	C2-12	BB ii v5	F0 41 DEV 42 12 40 00 04 v5 SUM F7 Master Level
	C2-13	BC ii v5	if Universal realtime sysEX mode
	C2-14	BD ii v5	F0 7F 7F 04 01 v5 v5 F7 Master Volume
	C2-15	BE ii v5	
	C2-16	BF ii v5	
A	S1-1	C0 jj	MASTER-S1 set GS master level mode
	S1-2	C1 jj	MASTER-S2 set Universal realtime sysEX mode
	S1-3	C2 jj	Dial-clockwise while depress right sw is inc jj
	S1-4	C3 jj	while depress up sw is inc gg
	S1-5	C4 jj	while depress down sw is inc ii
	S1-6	C5 jj	while depress reset sw is inc kk
	S1-7	C6 jj	while depress skip sw is inc ll
	S1-8	C7 jj	while depress rew sw is inc uu and F3 uu
B	S1-9	C8 jj	Dial-c clockwise while depress right sw is dec jj
	S1-10	C9 jj	while depress up sw is dec gg
	S1-11	CA jj	while depress down sw is dec ii
	S1-12	CC jj	while depress reset sw is dec kk
	S1-13	CC jj	while depress skip sw is dec ll
	S1-14	CD jj	while depress rew sw is dec uu and F3 uu
	S1-15	CE jj	Dial-sw(s3)
	S1-16	CF jj	
A	S2-1	90 kk 11/00	dec memory set number 9
	S2-2	91 kk 11/00	inc memory set number 0
	S2-3	92 kk 11/00	up C1 control change number set (gg)
	S2-4	93 kk 11/00	down C2 control change number set (ii)
	S2-5	94 kk 11/00	left cancel
	S2-6	95 kk 11/00	right S1 program change number set (jj)
	S2-7	96 kk 11/00	
	S2-8	97 kk 11/00	
B	S2-9	98 kk 11/00	DEV: 0-1Fh DEVICE ID (default : 10h)
	S2-10	99 kk 11/00	m: 0- Fh All Channel out
	S2-11	9A kk 11/00	gg: 00-5Fh C1 control change number
	S2-12	9B kk 11/00	ii: 00-5Fh C2 control change number
	S2-13	9C kk 11/00	jj: 00-7Fh S1 program change number
	S2-14	9D kk 11/00	v5: 00-7Fh data
	S2-15	9E kk 11/00	kk: 00-7Fh S2 note number
	S2-16	9F kk 11/00	ll: 01-7Fh S2 note velocity / RELEASE 00
		uu: 00-7Fh song select number	

MIDI Implementation <Mode 3>

* The number shown in brackets () is a decimal. "ch" represents an actual channel and "cc" a Control Change number.

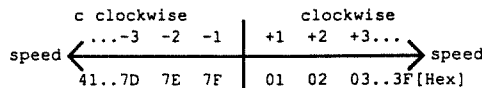
SELECT	ch	cc		ch	cc
A	C1-1	B0h(1) 10h(16) v5		F1	B0h(1) 52h(82) v5
	C1-2	B1h(2) 10h(16) v5		F2	B1h(2) 52h(82) v5
	C1-3	B2h(3) 10h(16) v5		F3	B2h(3) 52h(82) v5
	C1-4	B3h(4) 10h(16) v5		F4	B3h(4) 52h(82) v5
	C1-5	B4h(5) 10h(16) v5		F5	B4h(5) 52h(82) v5
	C1-6	B5h(6) 10h(16) v5		F6	B5h(6) 52h(82) v5
	C1-7	B6h(7) 10h(16) v5		F7	B6h(7) 52h(82) v5
	C1-8	B7h(8) 10h(16) v5		F8	B7h(8) 52h(82) v5
	C1-9	B8h(9) 10h(16) v5	◀ reset	B8h(9) 52h(82) v5	
	C1-10	B9h(10) 10h(16) v5	○ skip	B9h(10) 52h(82) v5	
	C1-11	BAh(11) 10h(16) v5	● rec	BAh(11) 52h(82) v5	
B	C1-12	BBh(12) 10h(16) v5	▬ pause	BBh(12) 52h(82) v5	
	C1-13	BCh(13) 10h(16) v5	▶ rew	BCh(13) 52h(82) v5	
	C1-14	BDh(14) 10h(16) v5	▬ stop	BDh(14) 52h(82) v5	
	C1-15	BEh(15) 10h(16) v5	▶ play	BEh(15) 52h(82) v5	
	C1-16	BFh(16) 10h(16) v5	▶ ff	BFh(16) 52h(82) v5	
	C2-1	B0h(1) 11h(17) v5	MASTER-C1	B0h(1) 12h(18) v5	
	C2-2	B1h(2) 11h(17) v5	MASTER-C2	B1h(2) 12h(18) v5	
A	C2-3	B2h(3) 11h(17) v5	MASTER-S1	B0h(1) 53h(83) v5	
	C2-4	B3h(4) 11h(17) v5	MASTER-S2	B1h(2) 53h(83) v5	
	C2-5	B4h(5) 11h(17) v5			
	C2-6	B5h(6) 11h(17) v5	Dial-c clockwise	B8h(9) 53h(83) v5	
	C2-7	B6h(7) 11h(17) v5	Dial-counterclockwise	B8h(9) 53h(83) v5	
	C2-8	B7h(8) 11h(17) v5	Dial-sw(S3)	B9h(10) 53h(83) v5	
	C2-9	B8h(9) 11h(17) v5	dec	BAh(11) 53h(83) v5	
	C2-10	B9h(10) 11h(17) v5	inc	BBh(12) 53h(83) v5	
	C2-11	BAh(11) 11h(17) v5	up	BCh(13) 53h(83) v5	
B	C2-12	BBh(12) 11h(17) v5	down	BDh(14) 53h(83) v5	
	C2-13	BCh(13) 11h(17) v5	left	BEh(15) 53h(83) v5	
	C2-14	BDh(14) 11h(17) v5	right	BFh(16) 53h(83) v5	
	C2-15	BEh(15) 11h(17) v5			
	C2-16	BFh(16) 11h(17) v5			
	S1-1	B0h(1) 50h(80) v5	v5: VOLUME:	00h-7Fh(0-127)	
	S1-2	B1h(2) 50h(80) v5	SWITCH:	Depressed 7Fh(127)/Release 00h(0)	
	S1-3	B2h(3) 50h(80) v5	Dial-c clockwise:	7Fh-41h(127-65) 2's complement	
A	S1-4	B3h(4) 50h(80) v5	Dial-counterclockwise:	01h-3Fh(1-63) with bit 6 as the sign bit	
	S1-5	B4h(5) 50h(80) v5	Dial :	The Dial transmits a positive value when rotated clockwise and a negative value when rotated counterclockwise. Rapid rotation transmits absolute values of greater value.	
	S1-6	B5h(6) 50h(80) v5			
	S1-7	B6h(7) 50h(80) v5			
	S1-8	B7h(8) 50h(80) v5			
	S1-9	B8h(9) 50h(80) v5			
	S1-10	B9h(10) 50h(80) v5			
	S1-11	BAh(11) 50h(80) v5			
B	S1-12	BBh(12) 50h(80) v5			
	S1-13	BCh(13) 50h(80) v5			
	S1-14	BDh(14) 50h(80) v5			
	S1-15	BEh(15) 50h(80) v5			
	S1-16	BFh(16) 50h(80) v5			
	S2-1	B0h(1) 51h(81) v5			
	S2-2	B1h(2) 51h(81) v5			
A	S2-3	B2h(3) 51h(81) v5			
	S2-4	B3h(4) 51h(81) v5			
	S2-5	B4h(5) 51h(81) v5			
	S2-6	B5h(6) 51h(81) v5			
	S2-7	B6h(7) 51h(81) v5			
	S2-8	B7h(8) 51h(81) v5			
	S2-9	B8h(9) 51h(81) v5			
	S2-10	B9h(10) 51h(81) v5			
	S2-11	BAh(11) 51h(81) v5			
B	S2-12	BBh(12) 51h(81) v5			
	S2-13	BCh(13) 51h(81) v5			
	S2-14	BDh(14) 51h(81) v5			
	S2-15	BEh(15) 51h(81) v5			
	S2-16	BFh(16) 51h(81) v5			



MIDI Implementation <Mode 4>

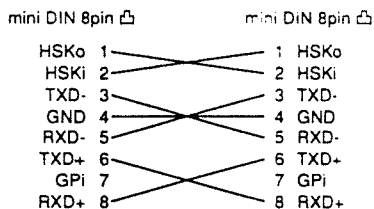
* The number shown in brackets () is a decimal. "cc" represents a Control Change number.

SELECT	C1-1	Bnh 48h(72) v5	F1	Bnh 0Ah(10) v5
	C1-2	Bnh 49h(73) v5	F2	Bnh 0Bh(11) v5
	C1-3	Bnh 4Ah(74) v5	F3	Bnh 0Ch(12) v5
A	C1-4	Bnh 4Bh(75) v5	F4	Bnh 0Dh(13) v5
	C1-5	Bnh 4Ch(76) v5	F5	Bnh 0Eh(14) v5
	C1-6	Bnh 4Dh(77) v5	F6	Bnh 0Fh(15) v5
	C1-7	Bnh 4Eh(78) v5	F7	Bnh 10h(16) v5
	C1-8	Bnh 4Fh(79) v5	F8	Bnh 11h(17) v5
	C1-9	Bnh 38h(56) v5	↑	reset Bnh 09h(9) v5
	C1-10	Bnh 39h(57) v5	↑	skip Bnh 12h(18) v5
	C1-11	Bnh 3Ah(58) v5	↑	rec Bnh 17h(23) v5
B	C1-12	Bnh 3Bh(59) v5	↑	pause Bnh 08h(8) v5
	C1-13	Bnh 3Ch(60) v5	↑	rew Bnh 13h(19) v5
	C1-14	Bnh 3Dh(61) v5	↑	stop Bnh 15h(21) v5
	C1-15	Bnh 3Eh(62) v5	↑	play Bnh 16h(22) v5
	C1-16	Bnh 3Fh(63) v5	↑	ff Bnh 14h(20) v5
	C2-1	Bnh 40h(64) v5	↑	MASTER-C1 Bnh 50h(80) v5
	C2-2	Bnh 41h(65) v5	↑	MASTER-C2 Bnh 51h(81) v5
	C2-3	Bnh 42h(66) v5	↑	MASTER-S1 Bnh 52h(82) v5
A	C2-4	Bnh 43h(67) v5	↑	MASTER-S2 Bnh 53h(83) v5
	C2-5	Bnh 44h(68) v5		Dial-c clockwise Bnh 60h(96) v5
	C2-6	Bnh 45h(69) v5		Dial-counterclockwise Bnh 60h(96) v5
	C2-7	Bnh 46h(70) v5		Dial-sw(S3) Bnh 1Eh(30) v5
	C2-8	Bnh 47h(71) v5		
	C2-9	Bnh 30h(48) v5	dec	Bnh 18h(24) v5
	C2-10	Bnh 31h(49) v5	inc	Bnh 19h(25) v5
	C2-11	Bnh 32h(50) v5	up	Bnh 1Ah(26) v5
B	C2-12	Bnh 33h(51) v5	down	Bnh 1Bh(27) v5
	C2-13	Bnh 34h(52) v5	left	Bnh 1Ch(28) v5
	C2-14	Bnh 35h(53) v5	right	Bnh 1Dh(29) v5
	C2-15	Bnh 36h(54) v5		
	C2-16	Bnh 37h(55) v5		
	S1-1	Bnh 00h(0) v5	n:	Channel 0h-Fh(0-15), Default Value Fh(15) n represents the number "which is smaller by one" than the actual MIDI channel. (That is, the MIDI channel number minus 1.)
	S1-2	Bnh 01h(1) v5	v5:	VOLUME : 00h-7Fh(0-127)
A	S1-3	Bnh 02h(2) v5		SWITCH : Depressed 7Fh(127) / Release 00h(0)
	S1-4	Bnh 03h(3) v5		Dial-c clockwise: 7Fh-41h(127-65) 2's complement
	S1-5	Bnh 04h(4) v5		Dial-counterclockwise: 01h-3Fh(1-63) with bit 6 as the sign bit
	S1-6	Bnh 05h(5) v5		Dial : The Dial transmits a positive value when rotated clockwise and a negative value when rotated counterclockwise. Rapid rotation transmits absolute values of greater value.
	S1-7	Bnh 06h(6) v5		
	S1-8	Bnh 07h(7) v5		
	S1-9	Bnh 20h(32) v5		
	S1-10	Bnh 21h(33) v5		
	S1-11	Bnh 22h(34) v5		
B	S1-12	Bnh 23h(35) v5		
	S1-13	Bnh 24h(36) v5		
	S1-14	Bnh 25h(37) v5		
	S1-15	Bnh 26h(38) v5		
	S1-16	Bnh 27h(39) v5		
	S2-1	Bnh 28h(40) v5		
	S2-2	Bnh 29h(41) v5		
	S2-3	Bnh 2Ah(42) v5		
A	S2-4	Bnh 2Bh(43) v5		
	S2-5	Bnh 2Ch(44) v5		
	S2-6	Bnh 2Dh(45) v5		
	S2-7	Bnh 2Eh(46) v5		
	S2-8	Bnh 2Fh(47) v5		
	S2-9	Bnh 58h(88) v5		
	S2-10	Bnh 59h(89) v5		
	S2-11	Bnh 5Ah(90) v5		
B	S2-12	Bnh 5Bh(91) v5		
	S2-13	Bnh 5Ch(92) v5		
	S2-14	Bnh 5Dh(93) v5		
	S2-15	Bnh 5Eh(94) v5		
	S2-16	Bnh 5Fh(95) v5		

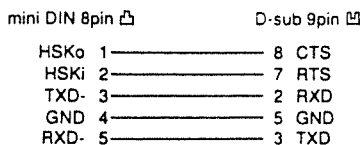
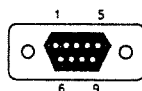
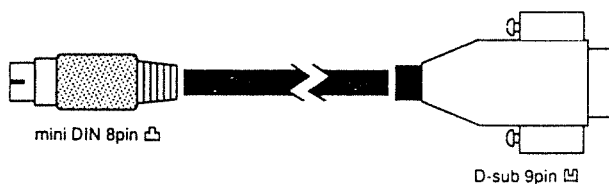


Computer Cable Diagram

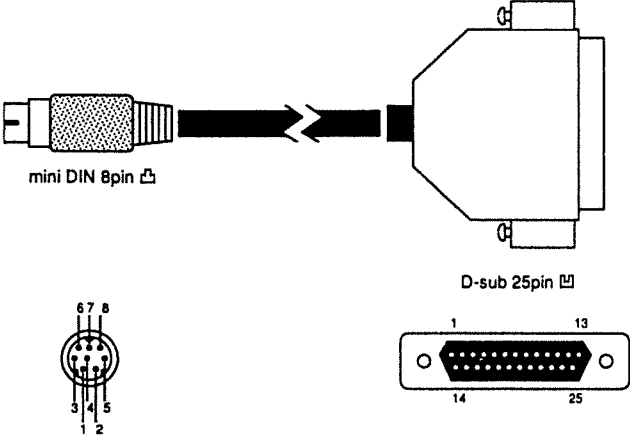
For Apple Macintosh (Optional: RSC-15APL) (RS-442)



For the IBM PC/AT (9 pin) (Optional: RSC-15AT) (RS-232C-2)



For the IBM PC/AT (25 pin) (RS-232C-2)



mini DIN 8pin		D-sub 25pin
HSK _o	1	5 CTS
HSK _i	2	4 RTS
TXD-	3	3 RXD
GND	4	7 GND
RXD-	5	2 TXD

ROLAND EXCLUSIVE MESSAGES

1. Data Format for Exclusive Messages

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

Byte	Description
F0H	Exclusive Status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
CMD	Command ID
[BODY]	Main data
F7H	End of exclusive

•MIDI status: F0H, F7H

An Exclusive message must be flanked by a pair of status codes, starting with a Manufacturer ID immediately after F0H (MIDI version 1.0).

•Manufacturer ID: 41H

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

•Device ID: DEV

The Device ID contains a unique value that identifies individual devices in the implementation of several MIDI instruments. It is usually set to 00H–0FH, a value smaller by one than that of a basic channel, but value 00H–1FH may be used for a device with several basic channels.

•Model ID: MDL

The Model ID contains a value that identifies one model from another. Different models, however, may share an identical Model ID if they handle similar data.

The Model ID format may contain 00H in one or more places to provide an extended data field. The following are examples of valid Model IDs, each representing a unique model:

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

•Command ID: CMD

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

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

•Main data: BODY

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

2. Address-mapped Data Transfer

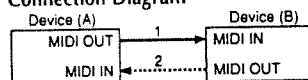
Address mapping is a technique for transferring messages conforming to the data format given in Section 1. It assigns a series of memory-resident records—waveform and tone data, switch status, and parameters, for example, to specific locations in a machine-dependent address space, thereby allowing access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

Address-mapped data transfer is therefore independent of models and data categories. This technique allows use of two different transfer procedures: one-way transfer and handshake transfer.

•One-way transfer procedure (See Section 3 for details.)

This procedure is suited to the transfer of a small amount of data. It sends out an Exclusive message completely independent of the receiving device's status.

Connection Diagram



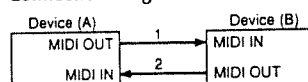
Connection at point 2 is essential for "Request data" procedures. (See Section 3.)

•Handshake-transfer procedure

(This device does not use this procedure)

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

Connection Diagram



Connection at points 1 and 2 is essential.

Notes on the above procedures

- There are separate Command IDs for different transfer procedures.
- Devices A and B cannot exchange data unless they use the same transfer procedure, share identical Device ID and Model ID, and are ready for communication.

3. One-way Transfer Procedure

This procedure sends out data until it has all been sent and is used when the messages are so short that answerbacks need not be checked.

For longer messages, however, the receiving device must acquire each message in time with the transfer sequence, which inserts 20 milliseconds intervals.

Types of Messages

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

• Request data #1: RQ1 (11H)

This message is sent out when there is a need to acquire data from a device at the other end of the interface. It contains data for the address and size that specify designation and length, respectively, of data required.

On receiving an RQ1 message, the remote device checks its memory for the data address and size that satisfy the request.

If it finds them and is ready for communication, the device will transmit a "Data set 1 (DT1)" message, which contains the requested data. Otherwise, the device won't send out anything.

Byte	Description
F0H	Exclusive Status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
11H	Command ID
aaH	Address MSB
	LSB
ssH	Size MSB
	LSB
sum	Check sum
F7H	End of exclusive

- The size of the requested data does not indicate the number of bytes that will make up a DT1 message, but represents the address fields where the requested data resides.
- Some models are subject to limitations in data format used for a single transaction. Requested data, for example, may have a limit in length or must be divided into predetermined address fields before it is exchanged across the interface.
- The same number of bytes comprises address and size data, which, however, vary with the Model ID.
- The error-checking process uses a checksum that provides a bit pattern where the last 7 bits are zero when values for an address, size, and that checksum are summed.

• Data set 1: DT1 (12H)

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

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

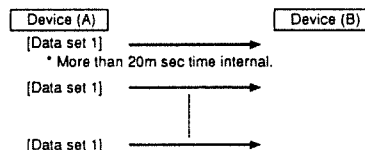
Byte	Description
F0H	Exclusive Status
41H	Manufacturer ID (Roland)
DEV	Device ID
MDL	Model ID
12H	Command ID
aaH	Address MSB
	LSB
ddH	Data MSB
	LSB
sum	Check sum
F7H	End of exclusive

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

• Example of Message Transactions

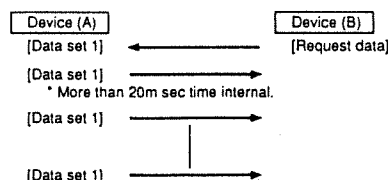
- Device A sending data to Device B

Transfer of a DT1 message is all that takes place.



- Device B requesting data from Device A

Device B sends an RQ1 message to Device A. Checking the message, Device A sends a DT1 message back to Device B.



1.RECOGNIZED RECEIVE DATA

SYSTEM REALTIME MESSAGE

Active Sensing

Status
FEH

When the MCR-8 receives Active Sensing messages, it starts to monitor the arrival of all subsequent messages. In this mode, the MCR-8 will turn off all Note ON messages (and stop sending Active Sensing messages) if the interval between consecutive messages exceeds 420ms. (It assumes there is a problem and simply shuts down the system.)

SYSTEM EXCLUSIVE MESSAGE

Status	Data	Status
FOH	iiH,ddH,...,eeH	F7H

FOH: System Exclusive

ii = ID Number :
The ID Number (manufacturer's ID) is used to distinguish one manufacturer's Exclusive messages from another. Roland's manufacturer ID is 41H.
ID numbers 7EH and 7FH are used as Universal Non-realtime messages, and Universal Realtime message (7FH) for extending the MIDI standard.

dd,...,ee= Data: 00H-7FH (0-127)
F7H: EOX EOX (End Of System Exclusive)

System Exclusive messages that the MCR-8 can receive are Data Request (RQ1) and Data Set (DT1).

For a detailed explanation about Data Request (RQ1) and Data Set (DT1), refer to "About Roland Exclusive Messages" and Section 3.

2.TRANSMITTED DATA

2.1 Sending the Received Messages

When the Soft Thru function is set to ON, the received messages are transmitted.

2.2 Received Messages

CHANNEL VOICE MESSAGE

Note Off

Status	Second	Third
9nH	kkH	vvH

n = MIDI Channel Number : 0H-FH(ch.1-ch.16)
k = Note Number : 00H-7FH(0-127)
vv = Velocity : 00H(0)

* Specifically when Mode 1 or 2 is selected.

Note On

Status	Second	Third
9nH	kkH	vvH

n = MIDI Channel Number : 0H-FH(ch.1-ch.16)
k = Note Number : 00H-7FH(0-127)
vv = Velocity : 01H-7FH(1-127)

* Specifically when Mode 1 or 2 is selected.

CONTROL CHANGE

Status	Second	Third
BnH	ccH	vvH

n = MIDI Channel Number : 0H-FH(ch.1-ch.16)
cc = Control Number : 00H-60H(0-96)
vv = Control Value : 00H-7FH(0-127)

NRPN MSB/LSB

Status	Second	Third
BnH	63H	mmH
BnH	62H	llH

n = MIDI Channel Number : 0H-FH(ch.1-ch.16)
mm = Upper bytes of the parameter number specified with NRPN.
ll = Lower bytes of the parameter number specified with NRPN.

* Specifically when Mode 1 is selected.
* For output data, refer to the table of output data for Mode 1.

RPN MSB/LSB

Status	Second	Third
BnH	63H	mmH
BnH	62H	llH

n = MIDI Channel Number : 0H-FH(ch.1-ch.16)
mm = Upper bytes of the parameter number specified with RPN.
ll = Lower bytes of the parameter number specified with RPN.

* Specifically when Mode 1 is selected.
* For output data, refer to the table of output data for Mode 1.

PROGRAM CHANGE

Status	Second
CnH	ppH

n = MIDI Channel Number : 0H-FH(ch.1-ch.16)
pp = Program Number : 00H-7FH(prog.1-prog.128)

* Specifically when Mode 1 or 2 is selected.

CHANNEL MODE MESSAGE

ALL SOUND OFF

Status	Second	Third
BnH	78H	00H

n = MIDI Channel Number : 0H-FH(ch.1-ch.16)

* Specifically when Mode 1 or 2 is selected.

RESET ALL CONTROLLER

Status	Second	Third
BnH	79H	00H

n = MIDI Channel Number : 0H-FH(ch.1-ch.16)

* Specifically when Mode 1 or 2 is selected.

ALL NOTE OFF

Status	Second	Third
BnH	7BH	00H

n = MIDI Channel Number : 0H-FH(ch.1-ch.16)

* Specifically when Mode 1 or 2 is selected.

SYSTEM COMMON MESSAGE

SONG SELECT

Status	Second
F3H	ssH

ss = Value : 00H-7FH(song1-song128)

* Specifically when Mode 1 or 2 is selected.

SYSTEM REALTIME MESSAGE

START

Status
FAH

* Specifically when Mode 1 or 2 is selected.

CONTINUE

Status
FBH

* Specifically when Mode 1 or 2 is selected.

STOP

Status
FCH

* Specifically when Mode 1 or 2 is selected.

ACTIVE SENSING

Status
FEH

* Continually sent in approximately 250 msec intervals.

* When message intervals are being monitored at the input section, the output of active sensing messages will cease for a certain period of time if the input interval exceeds 420 ms.

SYSTEM EXCLUSIVE MESSAGE

Status	Data	Status
F0H	iiH,ddH,.....eeH	F7H

F0H : System Exclusive
 ii = ID Number : 41H (65)
 dd,.....,ee = Data :00H-7FH (0-127)
 F7H : EOX (End of Exclusive/System common)

For a detailed explanation, see "About Roland Exclusive Messages" and Section 3.

UNIVERSAL REALTIME SYSTEM EXCLUSIVE

Status	Data	Status
F0H	7FH,7FH,04H,sid,llH,mmH	F7H

Byte	Description
F0H	Exclusive Status
7FH	ID Number (Universal Realtime Message)
7FH	DeviceID (Broadcast)
04H	Sub ID #1 (Device Control messages)
sid	Sub ID #2 (01: Master Volume 02: Master Balance)
llH	Lower bytes of Data
mmH	Upper bytes of Data
F7H	EOX (End of Exclusive)

* Specifically when Mode 1 is selected.

SYSTEM EXCLUSIVE FOR GS SOUND MODULE

Byte	Description
F0H	Exclusive Status
41H	Manufacturer ID (Roland)
dev	Device ID (dev: 00H - 1FH)
mdl	Model ID (mdl: 42H)GS
12H	Command ID (DT1)
aaH	Address MSB
bbH	Address
ccH	Address LSB
ddH	Data
:	:
eeH	Data
sum	Checksum
F7H	EOX (End of Exclusive)

* Specifically when Mode 1 or 2 is selected.

* For the GS output data, refer to the table of output data for Modes 1 and 2.

3.EXCLUSIVE COMMUNICATIONS

Using Roland's one-way Exclusive message you can transfer data between MCR-8 and another device.

The model ID of the Exclusive message that can be used in the MCR-8 is 64H (MCR-8). The Device ID can be set with 00H - 1FH.

Request Data 1RQ1(11H)

Byte	Description
F0H	Exclusive Status
41H	Manufacturer ID (Roland)
dev	Device ID (dev: 00H - 1FH)
mdl	Model ID (mdl: 64H) MCR-8
11H	Command ID (RQ1)
aaH	Address
ssH	Size
sum	Checksum
F7H	EOX (End of Exclusive)

DATA SET 1DT1(12H)

Byte	Description
F0H	Exclusive Status
41H	Manufacturer ID (Roland)
dev	Device ID(dev: 00H - 1FH)
mdl	Model ID (mdl: 64H)MCR-8
12H	Command ID (DT1)
aaH	Address
ddH	Data
:	:
eeH	Data
sum	Checksum
F7H	EOX (End of Exclusive)

4.PARAMETER ADDRESS MAP (Model ID=64H)

address(H)	size(H)	data(H)	mode	— RQ1 ONLY —
00	01	00-03		00:mode 1 01:mode 2 02:mode 3 03:mode 4

When the MCR-8 is switched on, or when the Mode Switch is changed on the MCR-8, the current status of the mode is output. This is also output when it receives a Data Request. Data Set will be ignored.

address(H)	size(H)	data(H)	select condition	— RQ1 ONLY —
01	01	00-03		00:select off 01:select A 02:select B 03:select A & B

When the MCR-8 is switched on, or when the Selector Switch is changed on the MCR-8, the current status of the Selector Switch is output. This is also output when it receives a Data Request. Data Set will be ignored.

address(H)	size(H)	data(H)	select change
02	01	00-04	00:select off 01:select A 02:select B 03:select A & B 04:another select A <-> B A & B <-> off

This is output when the MCR-8 receives a Data Request. When a Data Set is received, the status of the Selector Switch will be changed.

address(H)	size(H)	data(H)	00ab_cdefB select A & B data trans request
03	01	00-3F	a:C1-selectA 0: no trans 1: data trans b:C2-selectA 0: no trans 1: data trans c:C1-selectB 0: no trans 1: data trans d:C2-selectB 0: no trans 1: data trans e:Master-C1 0: no trans 1: data trans f:Master-C2 0: no trans 1: data trans

00111111B is output when a Data Request is received. When Data Set is received, the status of the Rotary/Slide control currently specified will be output according to the format of the active mode.

address(H)	size(H)	data(H)	midi channel select for MODE 4
04	01	00-0F	00 : Channel 1 01 : Channel 2 : 0E : Channel 15 0F : Channel 16

When a Data Request is received, data of mode 4's MIDI channel will be output. When Data Set is received, the MIDI channel of mode 4 will be changed.

MIDI Implementation Chart

Function...		Transmitted	Recognized	Remarks
Basic Channel	Default Changed	1 1 - 16	x x	
Mode	Default Messages Altered	x x *****	x x	
Note Number	True Voice	o 0 - 127	x x	
Velocity	Note ON Note OFF	o x	x x	
After Touch	Key's Ch's	x x	x x	
Pitch Bend		x	x	
Control Change	0, 32	o	x	Bank Select
	6	o	x	Data Entry
	7	o	x	Volume
	10	o	x	Panpot
	91	o	x	General Effect 1
	93	o	x	General Effect 3
	98, 99	o	x	NRPN LSB, MSB
	100, 101	o	x	RPN LSB, MSB
	120	o	x	All Sounds Off
121	o	x	Reset All Controllers	
Prog Change	True #	o 0 - 127	x x	Program Number 1-128
System Exclusive		o	o	
System Common	Song Pos Song Sel True	x o (0 - 127) x	x x x	
System Real Time	Clock Commands	x o	x x	
AUX Messages	Local ON/OFF All Notes OFF Active Sense Reset	x o o x	x x o x	
Notes	This chart corresponds to MODE 1 (GS Control).			

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

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

o : Yes
x : No

MIDI Implementation Chart

Function***		Transmitted	Recognized	Remarks
Basic Channel	Default	1 - 16	x	
	Changed	1 - 16	x	
Mode	Default	x	x	
	Messages	x	x	
	Altered	*****		
Note Number	True Voice	o	x	
		0 - 127	x	
Velocity	Note ON	o	x	
	Note OFF	x	x	
After Touch	Key's	x	x	
	Ch's	x	x	
Pitch Bend		x	x	
Control Change	0 - 95	o *1	x	
	120	o	x	All Sounds Off Reset All Controllers
	121	o	x	
Prog Change	True #	o	x	Program Number 1-128
		0 - 127	x	
System Exclusive		o	o	
System Common	Song Pos	x	x	
	Song Sel	o (0 - 127)	x	
	True	x	x	
System Real Time	Clock	x	x	
	Commands	o	x	
AUX Messages	Local ON/OFF	x	x	
	All Notes OFF	o	x	
	Active Sense	o	o	
	Reset	x	x	
Notes		This chart corresponds to MODE 2 (MIDI Mixer). *1 Default C1:10, C2:07		

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

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

o : Yes
x : No

MIDI Implementation Chart

Function...		Transmitted	Recognized	Remarks
Basic Channel	Default	1 - 16	x	
	Changed	1 - 16	x	
Mode	Default	x	x	
	Messages Altered	x *****	x	
Note Number	True Voice	x	x	
		*****	x	
Velocity	Note ON	x	x	
	Note OFF	x	x	
After Touch	Key's Ch's	x	x	
		x	x	
Pitch Bend		x	x	
Control Change	16	o	x	General Controller 1 General Controller 2 General Controller 3 General Controller 5 General Controller 6 General Controller 7 General Controller 8
	17	o	x	
	18	o	x	
	80	o	x	
	81	o	x	
	82	o	x	
	83	o	x	
Prog Change	True #	x *****	x x	
System Exclusive		o	o	
System Common	Song Pos	x	x	
	Song Sel	x	x	
	True	x	x	
System Real Time	Clock Commands	x	x	
		x	x	
AUX Messages	Local ON/OFF	x	x	
	All Notes OFF	x	x	
	Active Sense	o	o	
	Reset	x	x	
Notes		This chart corresponds to MODE 3.		

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

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

o : Yes
 x : No

MIDI Implementation Chart

Function...		Transmitted	Recognized	Remarks
Basic Channel	Default	16	x	
	Changed	1 - 16	x	
Mode	Default	x	x	
	Messages	x	x	
	Altered	*****		
Note Number	True Voice	x	x	
		*****	x	
Velocity	Note ON	x	x	
	Note OFF	x	x	
After Touch	Key's	x	x	
	Ch's	x	x	
Pitch Bend		x	x	
Control Change	00 - 30	o	x	
	32 - 83	o	x	
	88 - 96	o	x	
Prog Change	True #	x	x	
		*****	x	
System Exclusive		o	o	
System Common	Song Pos	x	x	
	Song Sel	x	x	
	True	x	x	
System Real Time	Clock	x	x	
	Commands	x	x	
AUX Messages	Local ON/OFF	x	x	
	All Notes OFF	x	x	
	Active Sense	o	o	
	Reset	x	x	
Notes		This chart corresponds to MODE 4.		

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

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

o : Yes
 x : No

How to read a MIDI Implementation Chart

- o: MIDI messages that can be transmitted or received.
- x: MIDI messages that cannot be transmitted or received.

Basic Channel

The MIDI channel for transmitting (receiving) MIDI messages can be specified over this range. The MIDI channel setting is remembered even when the power is turned off.

Mode

Most recent keyboard use mode 3 (omni off, poly).

- Reception: MIDI messages are received only on the specified channels, and played polyphonically.
- Transmission: All MIDI data is transmitted on the specified MIDI channel.

* *"Mode" refers to MIDI Mode messages.*

Note Number

This is the range of note numbers that can be transmitted (received). Note number 60 is middle C (C4).

Velocity

This is the range over which velocity can be transmitted (received) by Note On and Note Off messages.

Aftertouch

- Key's: Polyphonic Aftertouch
- Ch's: Channel Aftertouch

Pitch Bender

Set the receiving range of Pitch Bend messages by using Bend Range of each part.

Control Change

This indicates the control numbers that can be transmitted (received), and what they will control. For details, refer to the MIDI implementation.

Exclusive

Exclusive message reception can be turned on/off by the exclusive message receiving switch.

Common, Real time

These MIDI messages are used to synchronize sequencers and rhythm machines.

Aux messages

These messages are mainly used to keep a MIDI system running correctly. Active sensing transmission can be turned on/off.

Specifications

MCR-8: MULTI CONTROLLER

Connector

MIDI IN/ OUT/ THRU
Computer connector
AC Adaptor Jack

Switch

POWER Switch
COMPUTER Switch
MODE Switch
SELECT Button
S1 Button x8
S2 Button x8
S1 MASTER Button
S2 MASTER Button
Function Button x8
CURSOR Button x4
INC/ DEC Button
Sequencer Button x8
Dial

Volume

C1 Knob x8
C2 Slider x8
C1 MASTER Knob
C2 MASTER Slider
Dial

Indicator

POWER Indicator
SELECT A/ B

Power Supply

9V DC : AC Adaptor

Power Consumption

175mA

Dimensions

280(W) x 147.5(D) x 51.5(H) mm
11-1/16(W) x 5-13/16(D) x 2-1/16(H) inches

Weight

750g / 1lb 11oz (excluding AC Adaptor)

Accessories

AC Adaptor (BOSS PSA-Series)
GS Control template 1/2
MIDI Mixer template 1/2
Blank template 1/2
MIDI Cable
Owner's Manual

Optional

Computer Cable
RSC-15APL (for Apple Machintosh)
RSC-15AT (for IBM PC/AT)

** In the interest of product development, the specifications and/or appearance of this unit are subject to change without proior notice.*

Index

About Exclusive Messages	62	Random Pan	23
AC Adaptor	11	Reference	51
Adjusting the Pan of the entire Part	26, 38	Remote Mode	29, 41
Adjusting the Volume of the entire Part	26, 38	Reset All Controllers	25, 40
All Note OFF	25, 40		
Capital Tones	21	Select Buttons	8
Channel Messages	47	Sequencer	29, 41
Computer Cable Diagram	60	Setting the C1 Knob	36
Computer Switch	9, 14	Setting the C2 Slider	37
Control Change Messages	36, 47	Setting the Key Shift of the entire Part	26
Connecting to a Computer	11	Soft Thru	15
Connecting to an Apple Macintosh Series	11	Software Control	7, 43
Connecting to an IBM PC/AT Series	13	Specifications	71
Contents	4	Specifying the Part to be edited	20
CONTINUE	29, 41	START	29, 41
		STOP	29, 41
Data Value Entry	20, 35	System Messages	48
Device ID Number	30, 50		
Editing Chorus Parameters	28	Table of Output Data for Modes	55
Editing Reverb Parameters	26	Template	18
Exclusive Message	48	To edit the Part Parameters	20
		Tone Selection	21
GM System	49	Transmit MIDI Channel	34
GM System ON	42	Troubleshooting	52
GS Control	7, 17		
GS Format	49	Variation	21
GS Reset	30	Velocity	25, 40, 47
How to read the MIDI Implementation Chart	70	Universal Exclusive	38
Important Notes	6		
Key Shift	26		
MIDI Channels	46		
MIDI Clock	29, 41		
MIDI Control Change Table	53		
MIDI Implementation	64		
MIDI Implementation Chart	48, 66		
MIDI Mixer	7, 31		
Mode	7		
Modem Port	12		
Multi-timbral sound module	32		
Muting a Part	25, 40		
Note Messages	47		
Note Number	24, 39, 47		
Note ON/OFF	24, 39, 47		
NRPN Receive Switch	30		
Part Parameters	22		
Pitch Bend Messages	47		
Program Change Messages	35, 47		

MEMO

Information

When you need repair service, call your nearest Roland Service Center or authorized Roland distributor in your country as shown below.

AFRICA

EGYPT

Al Fanny Trading Office
9, EBN Hagar A1 Askalany Street,
ARD El Golf, Heliopolis,
Cairo 11341, EGYPT
TEL: 20-2-417-1828

REUNION

Maison FO - YAM Marcel
25 Rue Jules Hermann,
Chaudron - BP79 97 491
Ste Clotilde Cedex,
REUNION ISLAND
TEL: (0262) 218-429

SOUTH AFRICA

**That Other Music Shop
(PTY) Ltd.**
11 Melle St., Braamfontein,
Johannesburg, SOUTH AFRICA

P.O.Box 32918, Braamfontein 2017
Johannesburg, SOUTH AFRICA
TEL: (011) 403 4105

Paul Bothner (PTY) Ltd.
17 Werdmuller Centre,
Main Road, Claremont 7708
SOUTH AFRICA

P.O. BOX 23032, Claremont 7735,
SOUTH AFRICA
TEL: (021) 674 4030

ASIA

CHINA

**Beijing Xinghai Musical
Instruments Co., Ltd.**
6 Huangmuchang Chao Yang
District, Beijing, CHINA
TEL: (010) 6774 7491

**Shanghai Xingtong Acoustics
Equipment CO., Ltd.**
5F, No.1500 Pingliang Road
New East Club Plaza, Shanghai,
CHINA
TEL: (021) 5580-0800

HONG KONG

**Tom Lee Music Co., Ltd.
Service Division**
22-32 Pun Shan Street, Tsuen
Wan, New Territories,
HONG KONG
TEL: 2415 0911

INDIA

Rivera Digitec (India) Pvt. Ltd.
409, Nirman Kendra Mahalaxmi
Flats Compound Off. Dr. Edwin
Moses Road, Mumbai-400011,
INDIA
TEL: (022) 498 3079

INDONESIA

PT Citra IntiRama
Jl. Cideng Timur No. 15J-150
Jakarta Pusat
INDONESIA
TEL: (021) 6324170

KOREA

Cosmos Corporation
1461-9, Seocho-Dong,
Seocho Ku, Seoul, KOREA
TEL: (02) 3486-8855

MALAYSIA

BENTLEY MUSIC SDN BHD
140 & 142, Jalan Bukit Bintang
55100 Kuala Lumpur, MALAYSIA
TEL: (03) 2144-3333

PHILIPPINES

G.A. Yupangco & Co. Inc.
339 Gil J. Puyat Avenue
Makati, Metro Manila 1200,
PHILIPPINES
TEL: (02) 899 9801

SINGAPORE

Swee Lee Company
150 Sims Drive,
SINGAPORE 387381
TEL: 846-3676

**CRISTOFORI MUSIC PTE
LTD**
Blk 3014, Bedok Industrial Park E.
#02-2148, SINGAPORE 489980
TEL: 243 9555

TAIWAN

**ROLAND TAIWAN
ENTERPRISE CO., LTD.**
Room 5, 9F, No. 112 Chung Shan
N.Road Sec.2, Taipei, TAIWAN,
R.O.C.
TEL: (02) 2561 3339

THAILAND

Theera Music Co., Ltd.
330 Vergn NakornKasem, Soi 2,
Bangkok 10100, THAILAND
TEL: (02) 2248821

VIETNAM

Saigon Music
138 Tran Quang Khai St.,
District 1
Ho Chi Minh City
VIETNAM
TEL: (08) 844-4068

AUSTRALIA/ NEW ZEALAND

AUSTRALIA

**Roland Corporation
Australia Pty., Ltd.**
38 Campbell Avenue
Dee Why West, NSW 2099
AUSTRALIA
TEL: (02) 9982 8266

NEW ZEALAND

Roland Corporation Ltd.
32 Shaddock Street, Mount Eden,
Auckland, NEW ZEALAND
TEL: (09) 3098 715

CENTRAL/LATIN AMERICA

ARGENTINA

Instrumentos Musicales S.A.
Av Santa Fe 2055
(1123) Buenos Aires
ARGENTINA
TEL: (011) 4508-2700

BRAZIL

Roland Brasil Ltda
Rua San Jose, 780 Sala B
Parque Industrial San Jose
Cotia - Sao Paulo - SP, BRAZIL
TEL: (011) 4615 5666

COSTA RICA

**JUAN BANSBACH
Instrumentos Musicales**
Ave.1, Calle 11, Apartado 10237,
San Jose, COSTA RICA
TEL: 258-0211

CHILE

Comercial Fancy II S.A.
Rut.: 96.919.420-1
Nataliel Cox #739, 4th Floor
Santiago - Centro, CHILE
TEL: (02) 688-9540

EL SALVADOR

OMNI MUSIC
75 Avenida Norte y Final
Alameda Juan Pablo II,
Edificio No.4010 San Salvador,
EL SALVADOR
TEL: 262-0788

MEXICO

Casa Veerkamp, s.a. de c.v.
Av. Toluca No. 323, Col. Olivar
de los Padres 01780 Mexico D.F.
MEXICO
TEL: 668-0480

PANAMA

SUPRO MUNDIAL, S.A.
Boulevard Andrews, Albrook,
Panama City, REP. DE PANAMA
TEL: 315-0101

PARAGUAY

**Distribuidora De
Instrumentos Musicales**
J.E. Olear y ESQ. Manduvira
Asuncion PARAGUAY
TEL: (021) 492-124

PERU

VIDEO Broadcast S.A.
Portinari 199 (ESQ. HALS),
San Borja, Lima 41,
REP. OF PERU
TEL: (01) 4758226

URUGUAY

Todo Musica S.A.
Francisco Acuna de Figueroa 1771
C.P.: 11.800
Montevideo, URUGUAY
TEL: (02) 924-2335

VENEZUELA

Musicaland Digital C.A.
Av. Francisco de Miranda,
Centro Parque de Cristal, Nivel
C2 Local 20 Caracas
VENEZUELA
TEL: (212) 285-8586

EUROPE

AUSTRIA

Roland Austria GES.M.B.H.
Siemensstrasse 4, P.O. Box 74,
A-6063 RUM, AUSTRIA
TEL: (0512) 26 44 260

BELGIUM/HOLLAND/ LUXEMBOURG

Roland Benelux N. V.
Houtstraat 3, B-2260, Oevel
(Westerlo) BELGIUM
TEL: (014) 575811

DENMARK

Roland Scandinavia A/S
Nordhavnsvej 7, Postbox 880,
DK-2100 Copenhagen
DENMARK
TEL: (039)16 6200

FRANCE

Roland France SA
4, Rue Paul Henri SPAAK,
Parc de l'Esplanade, F 77 462 St.
Thibault, Lagny Cedex FRANCE
TEL: 01 600 73 500

FINLAND

**Roland Scandinavia As,
Filial Finland**
Lauttasaarentie 34 B
Fin-00201 Helsinki, FINLAND
TEL: (9) 682 4020

GERMANY

**Roland Elektronische
Musikinstrumente HmbH.**
Oststrasse 96, 22844 Norderstedt,
GERMANY
TEL: (040) 52 60090

GREECE

STOLLAS S.A.
Music Sound Light
155, New National Road
Patras 26442, GREECE
TEL: (061) 43-5400

HUNGARY

Intermusica Ltd.
Warehouse Area "DEPO" Pf.83
H-2046 Torokbalint, HUNGARY
TEL: (23) 511011

IRELAND

Roland Ireland
Audio House, Belmont Court,
Donnybrook, Dublin 4
Republic of IRELAND
TEL: (01) 2603501

ITALY

Roland Italy S. p. A.
Viale delle Industrie 8,
20020 Arese, Milano, ITALY
TEL: (02) 937-78300

NORWAY

**Roland Scandinavia Avd.
Kontor Norge**
Lilleakerveien 2 Postboks 95
Lilleaker N-0216 Oslo
NORWAY
TEL: 273 0074

POLAND

P. P. H. Brzostowicz
UL. Gibraltarska 4,
PL-03664 Warszawa POLAND
TEL: (022) 679 44 19

PORTUGAL

**Tecnologias Musica e Audio,
Roland Portugal, S.A.**
Cais Das Pedras, 8/9-1 Dto
4050-465 PORTO
PORTUGAL
TEL: (022) 608 00 60

ROMANIA

FBS LINES
Piata Libertatii 1,
RO-4200 Gheorgheni
TEL: (095) 169-5043

RUSSIA

MuTek
3-Bogatyrskaya Str. 1.k.1
107 564 Moscow, RUSSIA
TEL: (095) 169 5043

SPAIN

**Roland Electronics
de España, S. A.**
Calle Bolivia 239, 08020
Barcelona, SPAIN
TEL: (93) 308 1000

SWEDEN

**Roland Scandinavia A/S
SWEDISH SALES OFFICE**
Danvik Center 28, 2 tr.
S-131 30 Nacka SWEDEN
TEL: (08) 702 0020

SWITZERLAND

**Roland (Switzerland) AG
Musitronic AG**
Gerberstrasse 5, Postfach,
CH-4410 Liestal, SWITZERLAND
TEL: (061) 927-8383

UKRAINE

TIC-TAC
Mira Str. 19/108
P.O. Box 180
295400 Munkachevo, UKRAINE
TEL: (03131) 414-40

UNITED KINGDOM

Roland (U.K.) Ltd.
Atlantic Close, Swansea
Enterprise Park, SWANSEA
SA7 9FJ,
UNITED KINGDOM
TEL: (01792) 700139

MIDDLE EAST

BAHRAIN

Moon Stores
No.16, Bab Al Bahrain Avenue,
P.O.Box 247, Manama 304,
State of BAHRAIN
TEL: 211 005

CYPRUS

Radex Sound Equipment Ltd.
17, Diagonou Street, Nicosia,
CYPRUS
TEL: (02) 66-9426

IRAN

MOCO, INC.
No.41 Nike St., Dr.Shariyati Ave.,
Roberoye Cerahe Mirdamad
Tehran, IRAN
TEL: (021) 285-4169

ISRAEL

**Halilit P. Greenspoon &
Sons Ltd.**
8 Retzif Ha aliya Hashnya St.
Tel-Aviv-Yafo ISRAEL
TEL: (03) 6823666

JORDAN

AMMAN Trading Agency
245 Prince Mohammad St.,
Amman 1118, JORDAN
TEL: (06) 464-1200

KUWAIT

Easa Husain Al-Yousifi
Abdullah Salem Street,
Safat, LEBANON
TEL: 243-6399

LEBANON

A. Chahine & Fils
Gerge Zeidan St., Chahine Bldg.,
Achrafieh, P.O.Box: 16-5857
Beirut, LEBANON
TEL: (01) 20-1441

QATAR

**Al Emadi Co. (Badie Studio
& Stores)**
P.O. Box 62,
Doha, QATAR
TEL: 4423-554

SAUDI ARABIA

**aDawlah Universal
Electronics APL**
Corniche Road, Aldossary Bldg.,
1st Floor, Alkhobar,
SAUDI ARABIA

P.O.Box 2154, Alkhobar 31952
SAUDI ARABIA
TEL: (03) 898 2081

SYRIA

**Technical Light & Sound
Center**
Bldg. No. 47,
Khaled Ebn Al Wa'id St.
Damascus, SYRIA
TEL: (011) 221-1230

TURKEY

**Barkat muzik aletleri ithalat
ve ihracat Ltd Sti**
Siraselviler Caddesi Siraselviler
Pasaji No:74/20
Taksim - Istanbul, TURKEY
TEL: (0212) 2499324

U.A.E.

**Zak Electronics & Musical
Instruments Co. L.L.C.**
Zabeel Road, Al Sherooq Bldg.,
No. 14, Grand Floor, Dubai, U.A.E.
TEL: (04) 3360715

NORTH AMERICA

CANADA

**Roland Canada Music Ltd.
(Head Office)**
5480 Parkwood Way Richmond
B. C., V6V 2M4 CANADA
TEL: (0604) 270 6626

**Roland Canada Music Ltd.
(Toronto Office)**

Unit 2, 109 Woodbine Downs
Blvd, Etobicoke, ON
M9W 6Y1 CANADA
TEL: (0416) 213 9707

U. S. A.

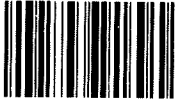
Roland Corporation U.S.
5100 S. Eastern Avenue
Los Angeles, CA 90040-2938,
U.S. A.
TEL: (323) 890 3700

Roland®

70343290

UPC

70343290



10981

Roland