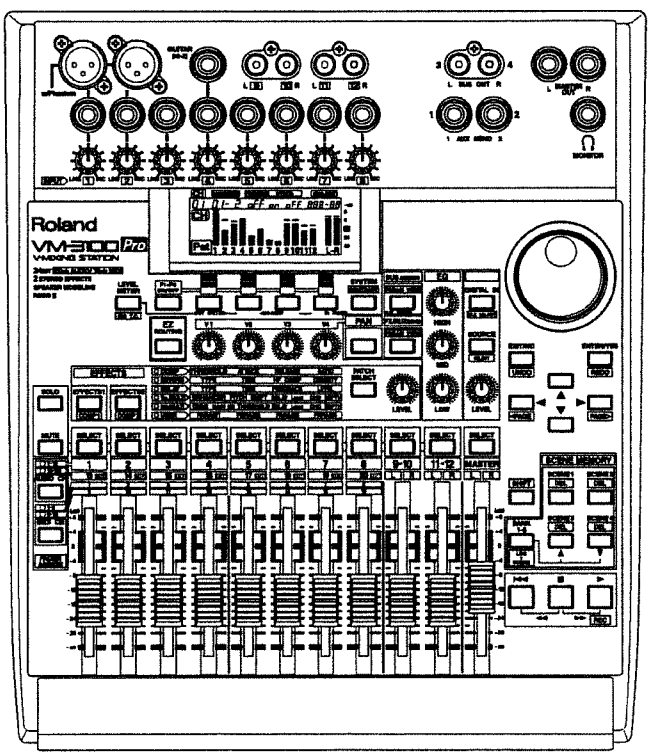
Roland®

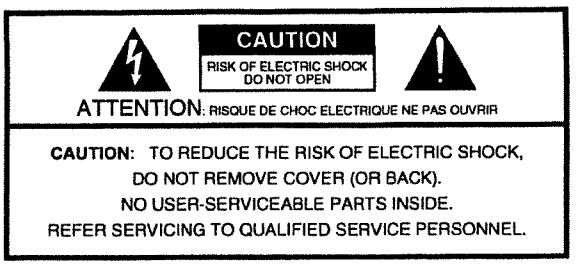
V-Mixer

V-MIXING STATION
VM-3100

OWNER'S MANUAL



The explanations in this manual include illustrations that depict what should typically be shown by the display. Note, however, that your unit may incorporate a newer, enhanced version of the system (e.g., includes newer sounds), so what you actually see in the display may not always match what appears in the manual.



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

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

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

IMPORTANT SAFETY INSTRUCTIONS
SAVE THESE INSTRUCTIONS

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

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

For the USA

GROUNDING INSTRUCTIONS

This product must be grounded. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock.

This product is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

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

For the U.K.

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

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

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

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

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

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

USING THE UNIT SAFELY

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

About ⚠WARNING and ⚠CAUTION Notices

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

About the Symbols

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

ALWAYS OBSERVE THE FOLLOWING

⚠WARNING

- Before using this unit, make sure to read the instructions below, and the Owner's Manual.
- Do not open or perform any internal modifications on the unit.
- Make sure you always have the unit placed so it is level and sure to remain stable. Never place it on stands that could wobble, or on inclined surfaces.
- Avoid damaging the power cord. Do not bend it excessively, step on it, place heavy objects on it, etc. A damaged cord can easily become a shock or fire hazard. Never use a power cord after it has been damaged.
- In households with small children, an adult should provide supervision until the child is capable of following all the rules essential for the safe operation of the unit.
- Protect the unit from strong impact.
  (Do not drop it!)
- Do not force the unit's power-supply cord to share an outlet with an unreasonable number of other devices. Be especially careful when using extension cords—the total power used by all devices you have connected to the extension cord's outlet must never exceed the power rating (watts/amperes) for the extension cord. Excessive loads can cause the insulation on the cord to heat up and eventually melt through.
- Before using the unit in a foreign country, consult with your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page.

⚠CAUTION

- Always grasp only the plug on the power-supply cord when plugging into, or unplugging from an outlet or this unit.
- Try to prevent cords and cables from becoming entangled. Also, all cords and cables should be placed so they are out of the reach of children.
- Never climb on top of, nor place heavy objects on the unit.
- Never handle the power cord or its plug with wet hands when plugging into, or unplugging from, an outlet or this unit.
- Before moving the unit, disconnect the power plug from the outlet, and pull out all cords from external devices.
- Before cleaning the unit, turn off the power and unplug the power cord from the outlet.
- Whenever you suspect the possibility of lightning in your area, pull the plug on the power cord out of the outlet.

IMPORTANT NOTES

In addition to the items listed under "IMPORTANT SAFETY INSTRUCTIONS" and "USING THE UNIT SAFELY" on pages 2 and 4, please read and observe the following:

Power Supply

- Do not use this unit on the same power circuit with any device that will generate line noise (such as an electric motor or variable lighting system).
- Before connecting this unit to other devices, turn off the power to all units. This will help prevent malfunctions and/or damage to speakers or other devices.

Placement

- Using the unit near power amplifiers (or other equipment containing large power transformers) may induce hum. To alleviate the problem, change the orientation of this unit; or move it farther away from the source of interference.
- This device may interfere with radio and television reception. Do not use this device in the vicinity of such receivers.
- Do not expose the unit to direct sunlight, place it near devices that radiate heat, leave it inside an enclosed vehicle, or otherwise subject it to temperature extremes. Excessive heat can deform or discolor the unit.
- To avoid possible breakdown, do not use the unit in a wet area, such as an area exposed to rain or other moisture.

Maintenance

- For everyday cleaning wipe the unit with a soft, dry cloth or one that has been slightly dampened with water. To remove stubborn dirt, use a cloth impregnated with a mild, non-abrasive detergent. Afterwards, be sure to wipe the unit thoroughly with a soft, dry cloth.
- Never use benzine, thinners, alcohol or solvents of any kind, to avoid the possibility of discoloration and/or deformation.

Additional Precautions

- Use a reasonable amount of care when using the unit's buttons, sliders, or other controls; and when using its jacks and connectors. Rough handling can lead to malfunctions.
- Never strike or apply strong pressure to the display.
- A small amount of noise may be heard from the display during normal operation.
- When connecting / disconnecting all cables, grasp the connector itself—never pull on the cable. This way you will avoid causing shorts, or damage to the cable's internal elements.
- A small amount of heat will radiate from the unit during normal operation.
- To avoid disturbing your neighbors, try to keep the unit's volume at reasonable levels. You may prefer to use headphones, so you do not need to be concerned about those around you (especially when it is late at night).
- When you need to transport the unit, package it in the box (including padding) that it came in, if possible. Otherwise, you will need to use equivalent packaging materials.

Introduction

We want to thank you for your purchase of the Roland "VM-3100 Series V-Mixing Station."
The "VM-3100 Series V-Mixing Station" digital mixer includes numerous features and high quality 24-bit sound. With the VM-3100 you can mix signals from CDs and MiniDisks using digital connections, mix them with analog sound sources, and use a variety of effects to enhance the sound. The final mix can also be output digitally, making the VM-3100 ideal for producing digital tapes. The VM-3100 is compact and lightweight, making it a great choice for live performances or lectures.
We think you'll enjoy using the "VM-3100 Series V-Mixing Station" to mix all kinds of projects.

Notes on Usage

Before using this unit, carefully read the sections entitled: "IMPORTANT SAFETY INSTRUCTIONS" (p. 2), "USING THE UNIT SAFELY" (p. 3), and "IMPORTANT NOTES" (p. 4). These sections provide important information concerning the proper operation of the unit. Additionally, in order to feel assured that you have gained a good grasp of every feature provided by your new unit, Ownerr's Manual should be read in its entirety. The manual should be saved and kept on hand as a convenient reference.

About This Manual

This "User's Manual" has been provided as a guide to the proper operation of the "VM-3100 Series V-Mixing Station." While the VM-3100 Series includes both the VM-3100 and the VM-3100Pro, the contents of this manual apply to both models. Information pertaining only to the VM-3100Pro is indicated by a note - "Pro only."
Please read the list of included items to confirm that nothing has been omitted in the box.

Contents

What is the VM-3100 Series V-Mixing Station?

The Roland VM-3100 Series V-Mixing Station is a digital mixer with high quality 24-bit sound and numerous features at a low price. Experience for yourself a sound quality and ease of use that is unavailable when using analog mixers. Let's take a look at the great features offered by the VM-3100. Detailed descriptions for each function are found on the pages indicated.

The VM-3100 Series includes both the VM-3100 and the VM-3100Pro. This manual applies to both models. Information pertaining only to the VM-3100Pro is indicated by the note (VM-3100Pro only). Read this material after confirming the model you are using.

MEMO

For more detailed information specifically about the VM-3100Pro's functions, please read the included supplement.

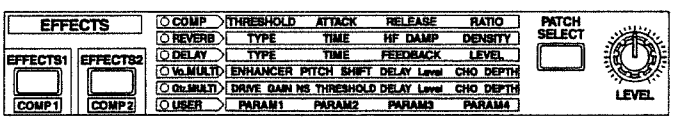
Equipped with Digital I/O for High-Quality Sound → Page 24

The VM-3100/VM-3100Pro digital mixer features 24-bit high-quality sound. You can plug in a variety of instruments and mics without worrying about the troublesome fader noise and crosstalk that have been a problem on analog mixers.

Additionally, digital I/O connectors allow you to connect to the digital connectors of MiniDisk and DAT players, thus allowing you make recordings without loss in sound quality.

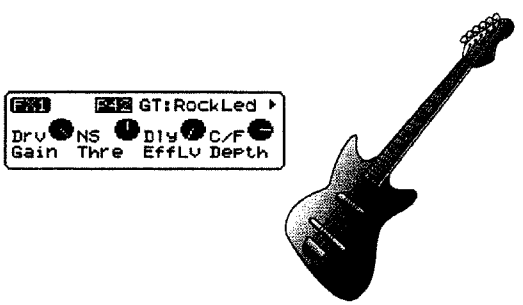
A Wide Variety of Functions for Creating Great Sounding Mixes → Page 22

The mixer features internal effects that you can use to enhance incoming signals while still keeping your mix in digital form.



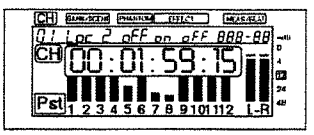
You can select just the right effects, from reverb, chorus, and delay, to guitar, keyboard, and vocal effects, and combine them with the input sounds.

You can also use the dedicated high-impedance input jack to input your guitar signal directly to the mixer and add special guitar multi-effects to the sound.

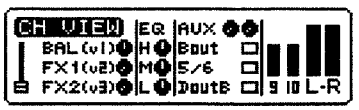


Easy-to-Read Digital Display Screen

The VM-3100's backlit graphic LCD display is easy to read, allowing you to see at a glance the content of any operation. This makes it easy to check the level meters visually while still using your ears to adjust levels.



You can also display the levels for each channel and view screen graphics while operating the mixer.



Scene Memory Makes Saving Mixer Settings Easy → Page 26

Mixer information (including channel levels, PAN, and other settings, along with any effects settings) can be saved as a "Scene Memory". Saving your scenes in advance allows you to quickly recall your mix with the press of a single button. You can record a total of 32 Scenes.This is a very convenient function that can be used for many different applications.

Control of MIDI Devices → Page 35, 41

Connecting a MIDI device to the VM-3100's MIDI IN and OUT connectors allows you to use an external MIDI sequencer to select Scenes. In addition, since the VM-3100's panel controls can be used to send MMC Start and Stop messages, you can also use it to control external MIDI sequencers.

Part Names

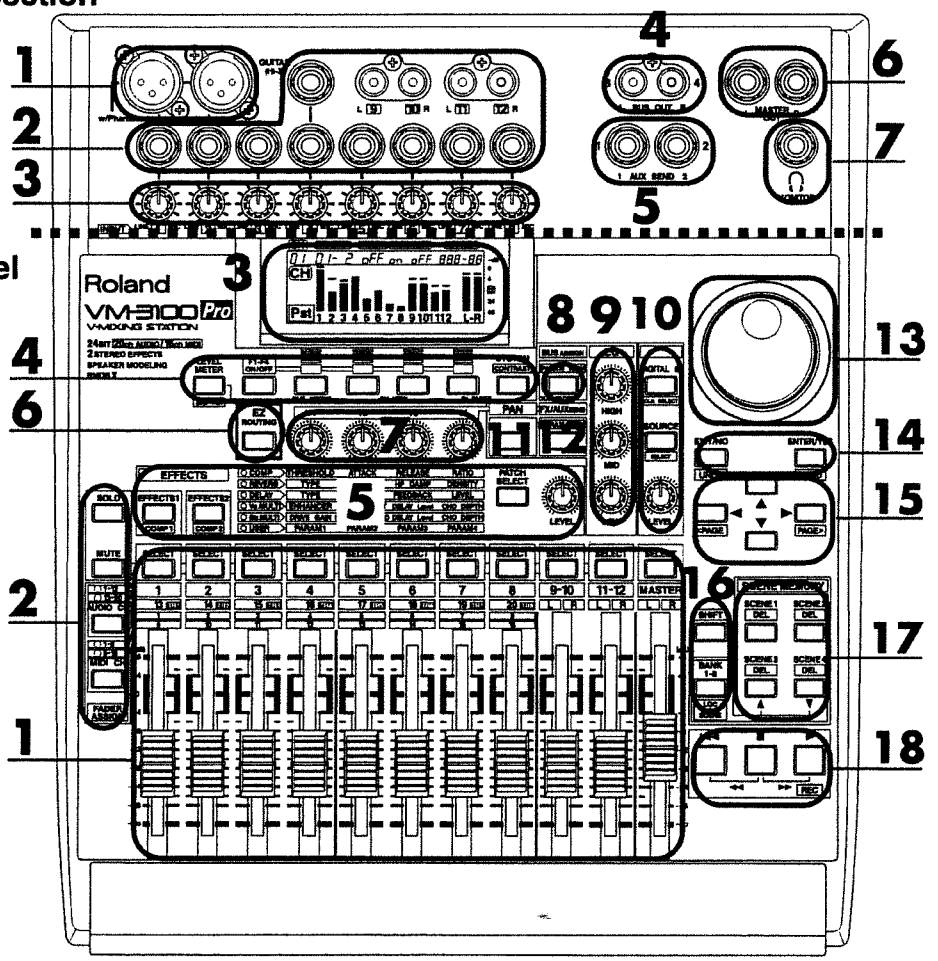
Now let's take a look at the names and functions of the different buttons and switches needed for operation of the VM-3100. Be sure to familiarize yourself with these controls, as they also appear in later explanations as well.

Front Panel

* *VM-3100Pro Specifications*

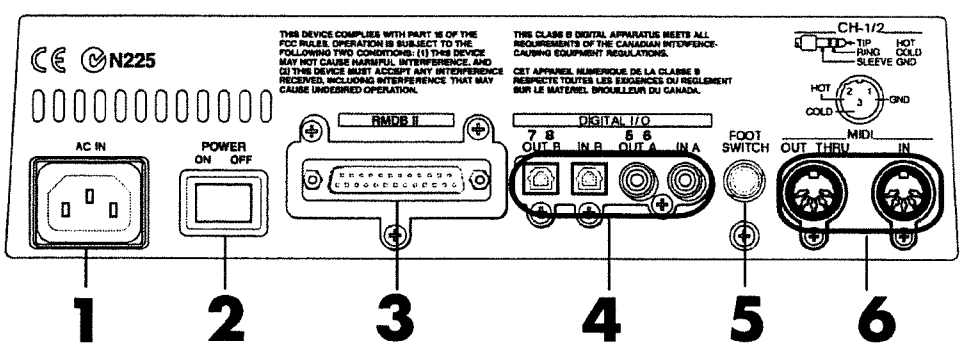
Front I/O Section

Front Panel Section



Rear Panel

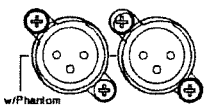
* *VM-3100Pro Specifications*



Part Functions

Front I/O Section

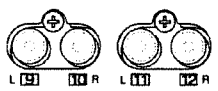
1 XLR Input Connectors



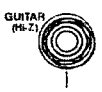
These inputs are used for connecting low-impedance microphones. With mics connected here, compressors can then be used on Channel 1 or Channel 2.

2 Channel (CH) Input Jacks

Connect mics, guitars, or other sources here.

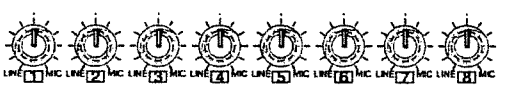


Analog signals from CD, MD, and DAT players are input here in stereo. The gain cannot be adjusted for these inputs.



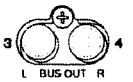
This is a special high-impedance jack for use with guitars. You can plug your guitar directly into this jack and use the guitar multi-effects. This input is switchable with Input 4.

3 GAIN Knobs



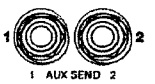
These knobs adjust the signal level input to each channel.

4 BUS OUT Jacks



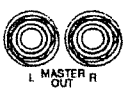
Connect these outputs to other devices in your studio, for example the INPUT jacks of a multitrack recorder.

5 AUX SEND Jacks



These outputs can be used as effect sends to an external effects processor or as outputs for a performers monitor speaker mix.

6 MASTER OUT Jacks



These are the main output jacks. Connect these to the speakers you use to monitor the Main mix.

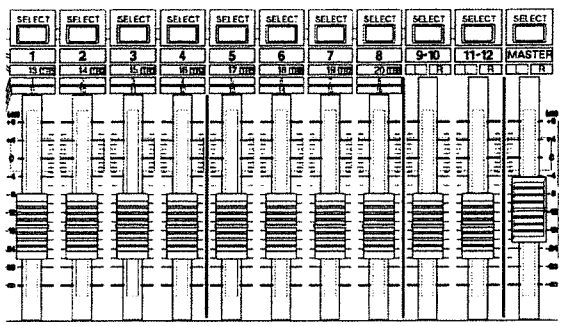
7 MONITOR Jack

Connect your headphones here. This functions as the monitor for each output. Press the DIGITAL IN button or the SOURCE button to select the output to be monitored.

Front Panel Section

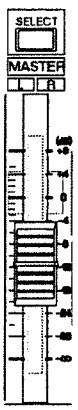
1 Faders

Channel Faders



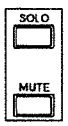
These faders adjust the volume of the signals input to each channel. The SELECT buttons can be used to select channels to make changes to effects, PAN, or other settings.

MASTER Fader



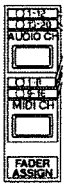
The MASTER fader adjusts the output volume of the signal mix from the channels. Press the MASTER SELECT button to make effects settings that affect the main mix and to access other functions.

2 SOLO Button, MUTE Button



These buttons determine the functions of the SELECT buttons. Press SOLO to output only the sound of a selected channel; press MUTE to mute the sound.

FADER ASSIGN Buttons

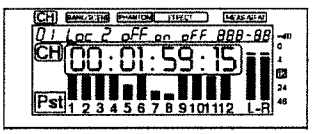


These buttons are used to determine the operation performed by the fader.

AUDIO CH: When this is pressed, the faders can be used to adjust the audio signal level of each channel.

MIDI CH: When this is pressed, the faders can be used to adjust the level of external MIDI devices (such as MIDI sound modules or keyboards).

3 Screen (Display)



This functions as a level meter and also is used to display channel settings and other information.

4 LEVEL METER Button

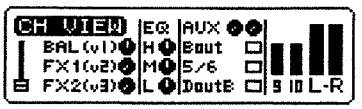
This button selects the LCD display mode.

- INPUT METER

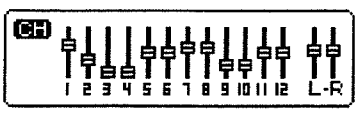
Hold down the LEVEL METER button and use the FUNCTION buttons [F1]-[F4] to switch between the four following screens.

- OUTPUT METER

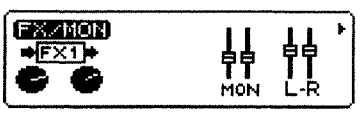
- CH VIEW



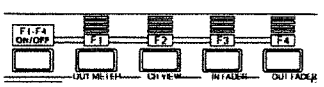
- INPUT FADER



- OUTPUT FADER



FUNCTION Buttons

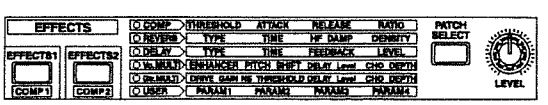


Hold down the SHIFT key and press a CURSOR button to select the next page of a screen.
You can also turn the screen function buttons on and off by pressing the [F1-F4 ON/OFF] buttons. When a function is indicated, you can then select that function by pressing the [F1]-[F4] buttons.

SYSTEM Button

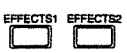
Press this button to make settings and changes to the system.

5 EFFECTS



* *This figure shows the VM-3100Pro.*

EFFECTS Buttons

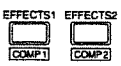


(VM-3100 Pro)

(VM-3100)

Use these buttons to select the internal effects screen. On the VM-3100, only EFFECT 1 can be selected; on the VM-3100Pro, EFFECT 1 and EFFECT 2 can be selected.

COMPRESSOR Buttons



(VM-3100 Pro)

(VM-3100)

Use this button to display the compressor settings screen. Once the compressor screen is displayed, this button can turn the internal compressor on and off.

PATCH SELECT Button

This switches among the effects types indicated on the effects section of the front panel. When the button is pressed, the light by the name of the selected effect is lit.

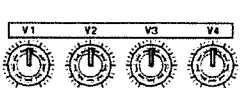
Effect LEVEL Knob

Use this knob to adjust the output of the selected effect.

6 EZ ROUTING Button

Use this button to display the EZ Routing screen. This function lets you set up and recall internal routings for input and output signals.

7 VALUE Knobs



Use Volume to adjust the settings for each channel, including effects and PAN settings.

8 BUS ASSIGN Button

This button allows you to specify the channel signals sent to the BUS OUT jacks, etc.

9 Equalizer (EQ)

Use the equalizer knobs to boost or cut the high, midrange, and low frequencies. Equalization for each channel can be set individually.

10 MONITOR Buttons

DIGITAL IN Button

Press this button to route the signal from the DIGITAL IN directly to MONITOR.

SOURCE Button

Press this button to route the monitor source signal to MONITOR.

MONITOR LEVEL Knob

Use this knob to adjust the volume level of the signal output to MONITOR.

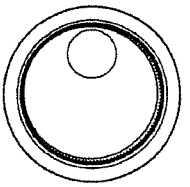
11 PAN Button

Use the PAN button to adjust the left-right distribution of a channel's signal. The initial settings of each channel have the signals centered. The channel pairs 9-10 and 11-12 are hard panned to the left and right respectively.

12 AUX SEND Button

Press this button to select the AUX SEND screen. Here you select the information to send, and the send level of the signals sent, to the AUX SEND jack from each channel. Items that can be adjusted include EFFECT 1, EFFECT 2 (VM-3100Pro only), and AUX MONAURAL OUT 1 and 2 (factory settings).

13 VALUE Dial



Use the Value Dial to make changes to parameter values.

14 ENTER/YES, EXIT/NO Buttons

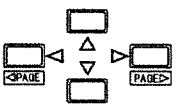
ENTER/YES Button

Use these buttons to respond to a Yes/No question or to execute a specific function.

EXIT/NO Button

Use this button to undo adjusted values or parameters.

15 CURSOR Buttons

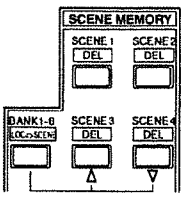


Use these buttons to move the screen cursor to the desired parameter. Use these buttons in conjunction with the SHIFT button to select different parameter screens.

16 SHIFT Button

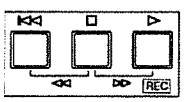
Holding down the SHIFT button while pressing a panel button executes the function indicated within the box printed on that button.

17 SCENE MEMORY



Use the SCENE 1 - SCENE 4 buttons to store the current mixer configuration. The VM-3100 contains 8 banks of scenes, each containing 4 scenes. You can switch among Banks 1-8 by pressing the BANK button and record four Scenes within each bank (refer to p. 26 in this manual). This switching feature can also be used as a locator function.

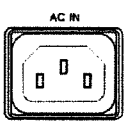
18 Transport Buttons



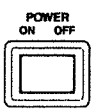
The transport buttons can be used to operate an external MIDI sequencers.

Rear Panel

1 AC IN Jack

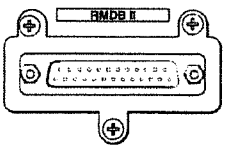


2 POWER Switch



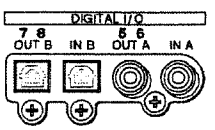
Make sure you turn down the volume of external amplification before powering the Mixer on or off.

3 RMDB II Connector (VM-3100Pro only)



This is a multichannel digital I/O connector. The optional Roland DIF-AT can be connected.

4 DIGITAL I/O Connectors



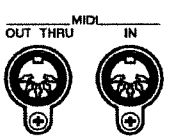
S/P DIF digital input/output format MD players and DAT recorders can be connected here. These connectors provide high-quality sound for playback and recording.

* *Digital signals from MD and CD players cannot be input merely by connecting these devices to the DIGITAL connectors. Please refer to p. 20 for instructions on making the necessary settings.*
* *Coaxial connectors cannot be used to input or output analog signals.*

5 FOOT SWITCH Jack

You can use a foot switch connected here to select Scenes or carry out other operations.

6 MIDI I/O Connectors

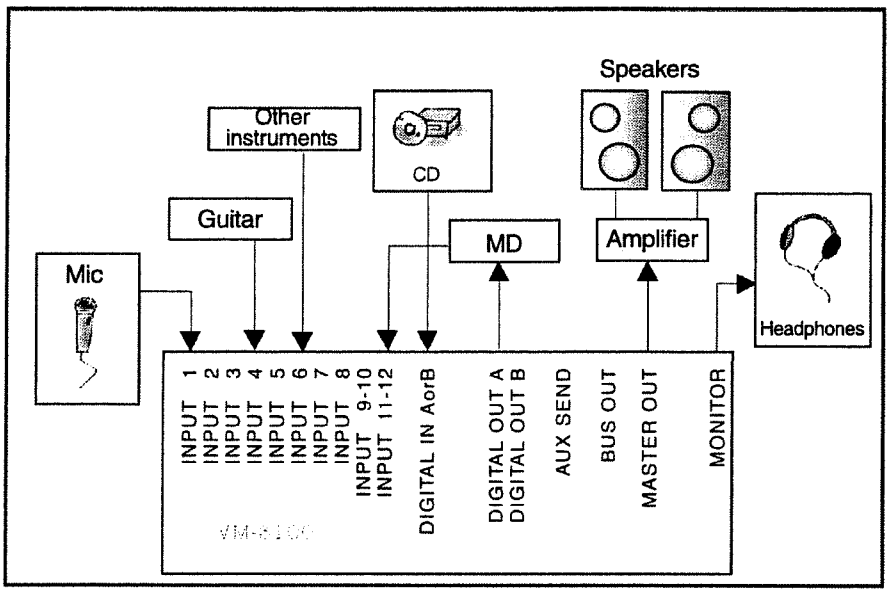


An external MIDI device can be connected here, allowing you to use the mixer to control, for example, a MIDI sequencer, or to select a VM-3100 Scene from a MIDI keyboard.

Trying Out the VM-3100

Connecting to Other Equipment

First, connect a pair of monitor headphones to the VM-3100, then connect any sound sources you want to mix. Since we are now connecting only basic devices, connect any other devices you want to use as the need arises. Also refer to the "Digital Mixer Workbook" starting on p.24.



The Difference Between MASTER OUT and MONITOR OUT

The VM-3100 has 4 primary buses to output signals. The "MASTER OUT" bus is used to combine the sends from all channels of the VS-3100. The "MONITOR OUT" allows you to listen to the selected signals with the MONITOR buttons. The "BUS OUT" is used primarily as an input/output for multitrack recording. The "AUX SEND" is used to send signals to a performers' monitor speakers or to external effects. Here, let's make sure the difference between MASTER and MONITOR is clear. As the main signals, the signals output from MASTER OUT are the final mixed signals. In contrast, signals selected with the MONITOR buttons are output from the MONITOR OUT. This allows you to monitor not only the same sounds as those output from MASTER OUT, but also sounds directly from each channel or from DIGITAL IN. Thus, through skillful use of the MONITOR, you can check the sounds on each channel without affecting the MASTER OUT, making this a very convenient function.

It is important to distinguish between the Master and Monitor bus. The Master bus contains your final mixed signals.The Monitor bus only contains signals selected with the Monitor buttons. The Monitor bus is useful to isolate specific channels or to troubleshoot a mix.

NOTE

Before connecting any equipment, always be sure to turn off the power of all devices to be connected. Connecting equipment with the power turned on may result in a malfunction or damage to the equipment.

NOTE

Use a cable from Roland to make the connection. If using some other make of connection cable, please note the following precautions. Some connection cables contain resistors. Do not use cables that incorporate resistors for connecting to this unit. The use of such cables can cause the sound level to be extremely low, or impossible to hear. For information on cable specifications, contact the manufacturer of the cable.

MEMO

We recommend connecting audio devices equipped with digital inputs and outputs to the VM-3100's DIGITAL connectors. For more detailed information, please see p.20.

NOTE

The MONITOR section includes the DIGITAL IN and SOURCE buttons. For more detailed information on these buttons, refer to p.14.

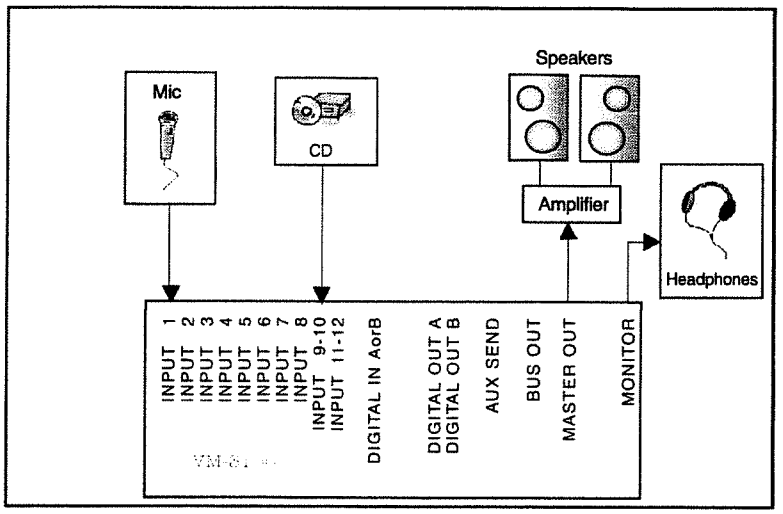
Listening to Sounds

Now let's connect a CD player to the VM-3100 via analog jacks and listen to the sound.

1

Connecting a CD player.

Connect a CD player to Channels 9-10. Analog signals are used for this connection.



2

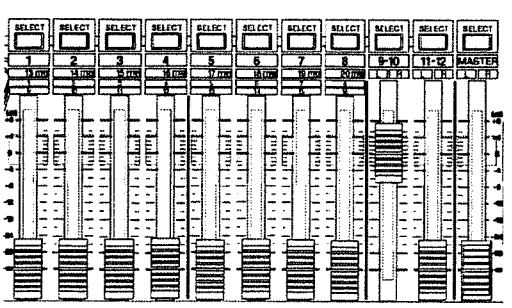
Turn the POWER switch on.

Press the POWER switch on the VM-3100's rear panel to turn on the power to the unit. The following screen is displayed when the VM-3100 is ready for use.

3

Set the channel faders.

Raise the channel fader for Channel 9-10, to which the CD player is connected, to the 0 dB position.



NOTE

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

1.VM-3100
2.Other instruments

NOTE

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

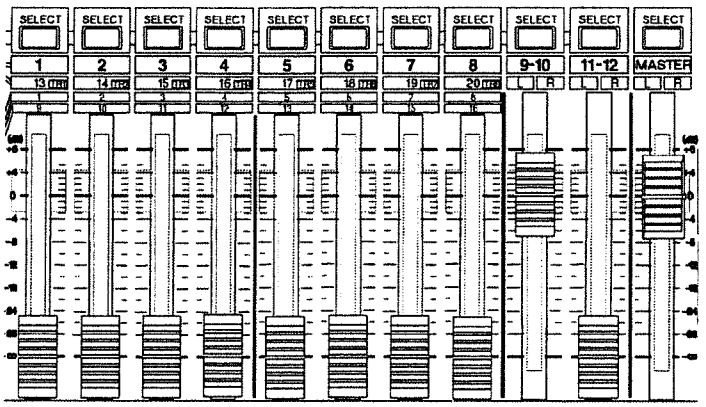
NOTE

Always make sure to have the volume level turned down before switching on power. Even with the volume all the way down, you may still hear some sound when the power is switched on, but this is normal, and does not indicate a malfunction.

4

Bring up the MASTER fader.

Adjust the volume by slowly raising the MASTER fader to a suitable level.



Can you hear the sound?

If the material is not audible, refer to the "What if the sound is not audible" on p.19 and try again.

NOTE

Channel 9-10 and Channel 11-12 cannot be adjusted with GAIN knobs. If the sound becomes distorted, adjust the output level of the CD player or other device.

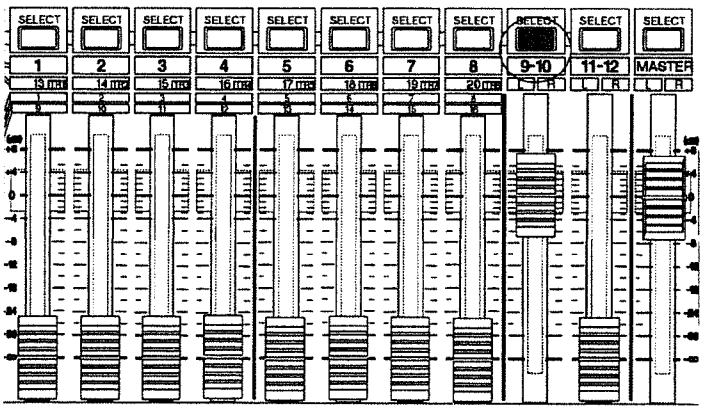
Adjusting the Sound

After confirming that you can hear the sound output, the next step is to try adjusting the sound. For now, try adjusting the PAN and equalizer (EQ).

1

Select the channel for which the sound is to be adjusted.

Press the [SELECT] button for the channel you want to adjust, lighting the button. In this case, press the [SELECT] button for Channel 9-10.



MEMO

Before proceeding with an operation, you can press the [LEVEL METER] button to call up the Level Meter screen.

2

Boost the high end.

To adjust the high frequency range, rotate the [HIGH] volume knob.

MEMO

If you adjust the equalizer while listening to the sound, you may notice a clicking noise. This is not a malfunction. If the noise is objectionable, make adjustments while the sound is mot playing.

Rotating the knob to the right (clockwise) increases the volume of the high end. Set this to a suitable level while listening to the sound.

3

Next, adjust the PAN.

Press the PAN button to display the following PAN settings.

Four channels, including the channel to be adjusted, can be displayed by pressing the channel fader [SELECT] button.

Rotate the display VALUE volume controls, corresponding to V1-V4 from left to right respectively, to change the L and R values. Set these to the appropriate positions while monitoring the sound.

With the panning arrangements for Channels 9-12 appearing in the display, you can use the V1-V4 value knobs to adjust the following values.

V1.....Channel 9-10 left/right balance
V2.....Channel 9-10 left/right breadth
V3.....Channel 11-12 left/right balance
V4.....Channel 11-12 left/right breadth

What if the sound is not audible?

If no sound can be heard, even when the power is turned on, then check the following points:

- Does the channel to which the CD player or other device is connected correspond to the fader you are adjusting?
- Is the CD player or other device playing back?
- Is the fader's channel muted?
- Are the speakers or headphones properly and firmly connected?
- Has the MASTER fader been brought up?
- Has the CD player's output level been raised?
- If headphones are being used, is the MONITOR LEVEL knob set to the proper level?
- Is the [AUDIO CH] button lit? Press the [AUDIO CH] button so that it lights in red.

MEMO

To change the midrange, adjust the [MID] volume knob, and to change the low end, adjust the [LOW] volume knob. To adjust the sound on a different channel, press the [SELECT] button for the desired channel.

MEMO

Use the [SELECT] buttons to select the desired channel.

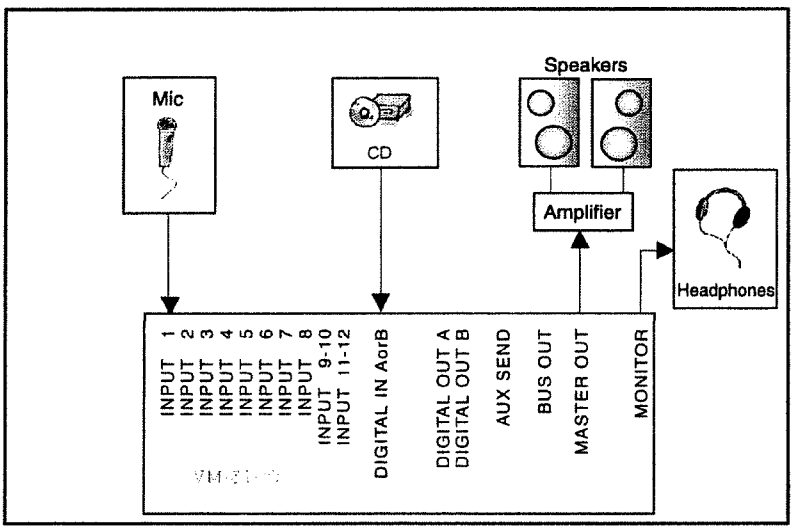
Connecting and Mixing Digital Devices

Now try using these basic mixer operations to mix multiple sounds. Use the following procedure to connect a CD player digitally, and adjust the instrument and mic signals to achieve a good balance.

1

Connect the mic and CD player.

Connect the mic to Channel 1 and the CD player to the [IN B] digital connector.



2

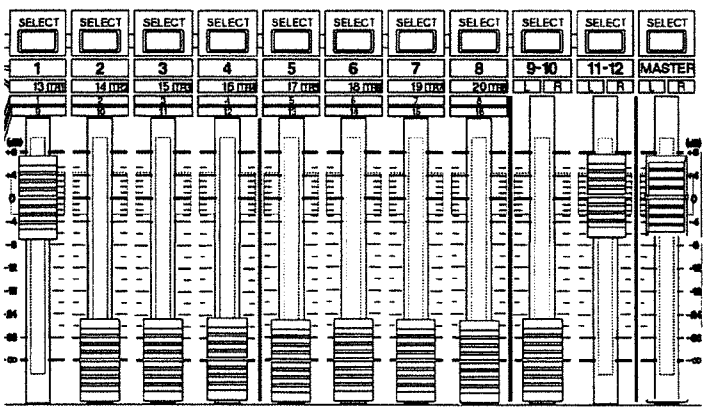
Adjust the channel faders.

Raise the faders on Channel 1 and Channel 11-12 to the 0 dB position.

3

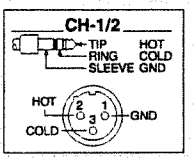
Bring up the MASTER fader.

Adjust the volume by slowly raising the MASTER fader to a suitable level. After adjusting the MASTER fader, temporarily lower the Channel 11-12 fader.



NOTE

The pin assignment for the XLR type connectors is as shown below. Before making any connections, make sure that this pin assignment is compatible with that of all your other devices.



NOTE

Howling could be produced depending on the location of microphones relative to speakers. This can be remedied by:

1. Changing the orientation of the microphone(s).
2. Relocating microphone(s) at a greater distance from speakers.
3. Lowering volume levels.

MEMO

Digital input signals are automatically input to Channel 11-12. If you want to change the channel to which digital signals are input, please refer to Appendices "Points for Better Mixing"

MEMO

Sounds from a digital device cannot be heard merely by connecting the device to the VM-3100. Use the following procedure to switch the digital signals.

1. Hold down the [SHIFT] button and press the [DIGITAL IN] button.
2. Press the [F3] button and select "DIN-B."

4

Adjust the mic volume.

Adjust the mic level. First, press the [F1-F4 ON/OFF] button and [F1] button to show to the pre-fader status. At this point, lower the channel fader.

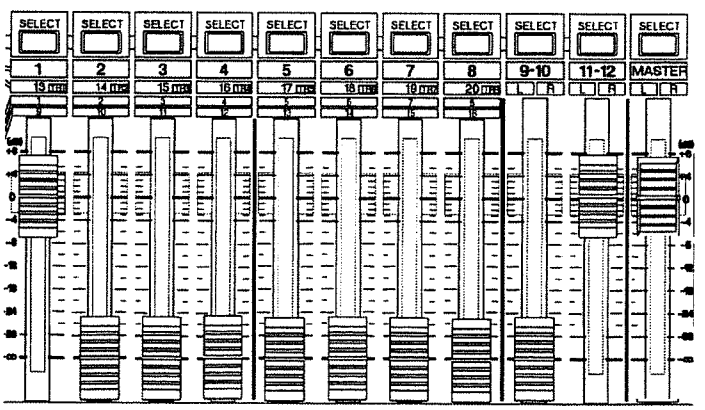
Press the [F1] button to show to the pre-fader status. At this point, lower the channel fader.

Adjust the level, rotating the GAIN knob until the meter shows the proper amount of signal.
Next, press the [F1] button to switch the display to the post-fader screen. Press the [F1-F4 ON/OFF] button to eliminate display of the functions. Raise the channel fader until the meter shows the desired amount of signal.

5

Adjust the CD player's volume.

After adjusting the mic volume, slowly raise the Channel 11-12 fader. Adjust the fader until you have obtained a good mix with the mic channel.



MEMO

Keep the Channel 11-12 fader down when adjusting mics.

MEMO

<Ideal Meter Fluctuation>
This is when the meter normally fluctuates in the range of 70-80%, without reaching the maximum.

MEMO

Use the compressor to compress the signal when vocals exhibit wide variation in volume, or when the proper amount of fluctuation is unattainable (see p. 30).

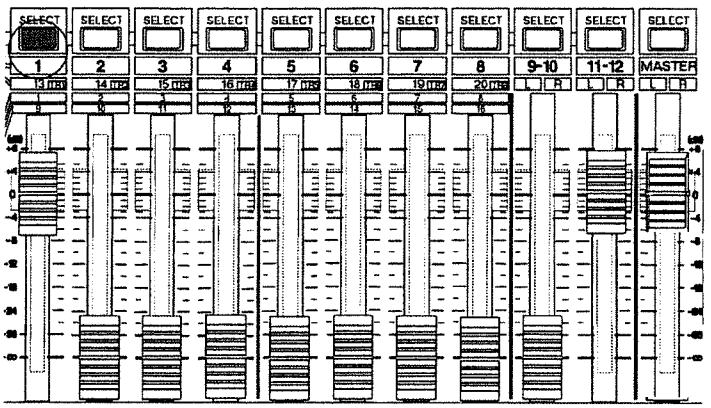
Adding Effects to the Mic Channel

The VM-3100 allows you to add a variety of effects to the mic signal. Let's try adding some reverb to the mic signal.

1

Prepare the channel.

Press the [SELECT] button for Channel 1, so that it is lit.



MEMO

Adjust the channel faders, MASTER fader, and GAIN controls to the appropriate levels.

2

Select an effect.

First, select the effect. Let's try using the reverb effect. Press the [EFFECTS 1] button. The EFFECTS display will appear. Next, press [PATCH SELECT] button several times until the REVERB lamp lights.

Rotate the [EFFECTS LEVEL] knob to raise the effect output level to somewhere around the 6-8 level.

MEMO

The VALUE volume knobs in the display correspond to V1-V4 from left to right, respectively. Rotate these volume knobs to adjust the levels.

3

Adjust the effect level.

Next, press the [AUX SEND] button. The following reverb settings screen appears in the display.

Rotate the VALUE volume V1 knob, adjusting the reverb level. After confirming that the reverb effect is being applied to the mic sound, adjust the reverb to a suitable level.

When you have finished making these settings, press the [LEVEL METER] button to return to the first LEVEL METER screen.

MEMO

Now you can change the level of the signal sent to EFFECT1 (FX1).

Saving your mix to a Scene

After making these settings — channel fader adjustments, MASTER fader volume levels, PAN settings and effects added to the mic sound — you may find that you want to use them again. The VM-3100 features a "Scene Memory" function which allows you to save the current mixer configuration and settings.

1

Press a SCENE button to save the current mixer settings.

A scene can be saved to any unlit Scene button. Press the [SCENE1] button. The button will light when a Scene Memory has been saved to that location.

MEMO

Instructions for selecting additional banks of scenes and clearing previously saved scenes can be found on p.27.

2

Recalling a previously saved scene

After saving a Scene, lower all of the faders, turn the power off and then on again. After the initial boot-up process, press the [SCENE 1] button.

3

Confirm that the Scene was recorded

Speak into the mic while playing back a CD in the CD player. Even with the faders down, the signals are mixed using the same settings that were just saved.

Digital Mixer Workbook

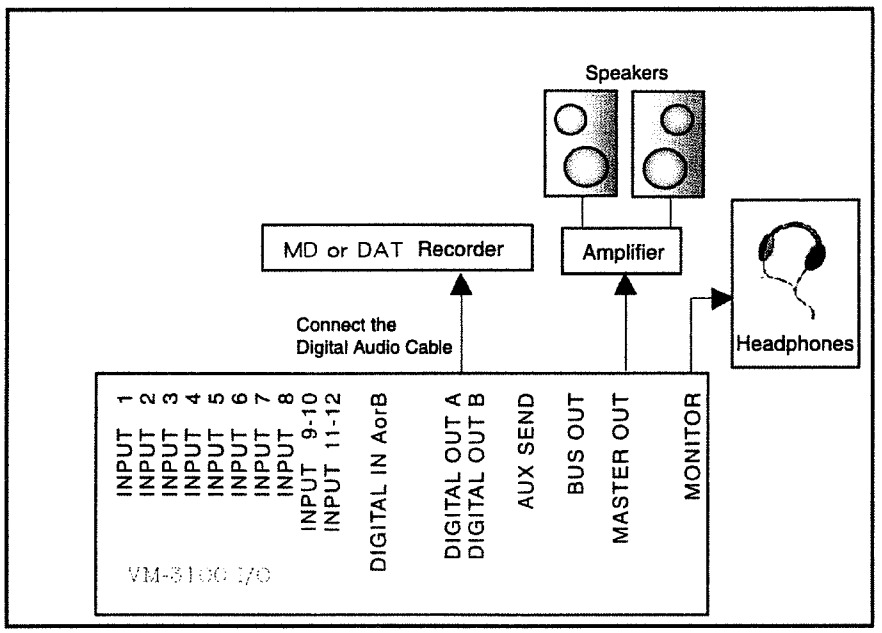
Here is an introduction to some even more practical ways of using the VM-3100's many various features. Understanding the material in this section can give you a better idea of the possibilities available only with a digital mixer.
These examples illustrate real-life advantages of the VM-3100 digital mixer. First, we'll show how to get the most out of the digital outputs of your digital mixer.

How to record into digital recorders (DAT, MD...)

Let's record the output of the VM-3100 into digital recorders such as DAT, MD, and the hard disk recorders such as the VS-1680/880EX.

1 Connect the equipment according to the picture below.

<Connection with DAT or MD recorder>



2 Set the digital equipment to record

Set the digital equipment to be able to record the digital signals which come in via its digital input jack.

3 Start the recording operation on the connected equipment.

MEMO
Besides MASTER OUT, the VM-3100 is equipped with BUS OUT, AUX SEND, and MONITOR (phones) for analog output signals, and DIGITAL OUT for digital output signals.

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

MEMO
The VM-3100's DIGITAL Outputs are set at the factory to send the same signals as the MASTER Outputs.

MEMO
Before proceeding with an operation, you can press the [LEVEL METER] button to call up the Level Meter screen.

MEMO
Please set the sampling rate of the digital equipment to record at 44.1 kHz. Some models set the sampling rate automatically, and don't need to be set manually.

I cannot record correctly / Wrong sounds are recorded...

- Is the output source of the DIGITAL OUT connector set to "MIX" (mix bus)?

→ Check with EZ Routing page.

1. Press [EZ ROUTING].
2. Press [F1-F4 ON/OFF], then [F2](OUT).
3. Select "DoutA=" with the cursor button ▸.
4. Set to "MIX" by turning the value dial.
5. Press [LEVEL METER] to go back to the level meter page.

- Do the MASTER OUTPUTs output the correct signals to be recorded?

→ Check the settings of each channel of the VM-3100 such as the channel fader.

- Is the digital equipment set to record the digital input signal?

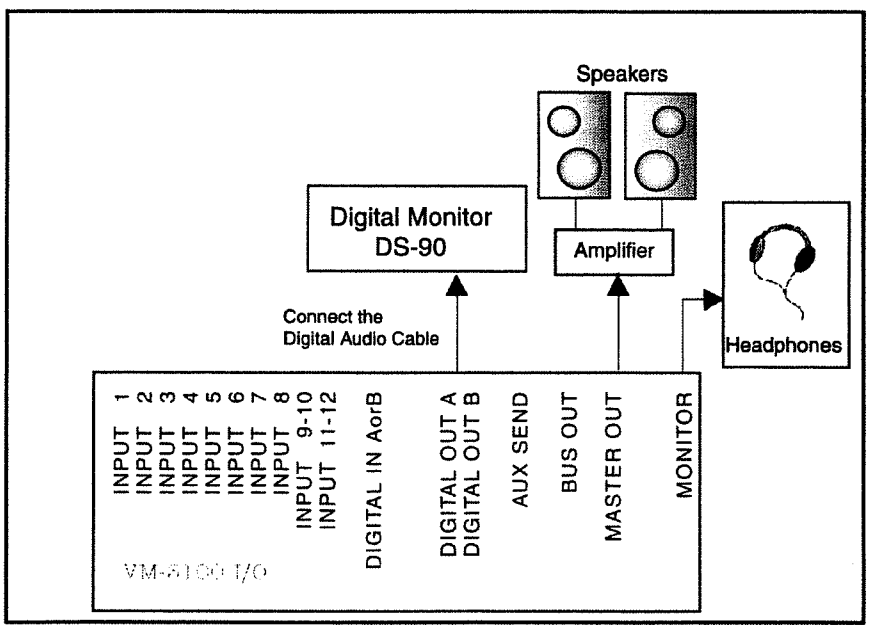
→ Check the digital input setting of the digital equipment.

* *Some DAT recorders do not support the sampling rate of 44.1kHz. In this case, please record using the analog connectors.*

Use the Digital Monitors DS-90

By using DIGITAL OUT as the master output to the Digital Monitors DS-90, you can mix and monitor the sound without deterioration.

1 Connect the equipment according to the picture below.



NOTE

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

2 Set the DS-90 Digital Monitors.

Set the DS-90 Digital Monitors so that you can input the digital signals into their digital input connectors.

MEMO
For the details of the setting, refer to the owner's manual for DS-90.

Examine the difference produced by Speaker Modeling. (VM-3100Pro Only)

By selecting a patch using the "Speaker Modeling" algorithm for Effect2, you can audition your mix with various sound characteristics of different speakers.

1. Press [EFFECT2].
2. Select a patch using "Speaker Modeling" by turning the value dial, then press [ENTER/YES].
3. Press [F1–F4 ON/OFF], then [F2](LOC).
4. Set "Location" to "INS MASTER" to insert the Effect2 to the mix bus.

Switch the patches using "Speaker Modeling" and audition your mix with various sound characteristics of different speakers.

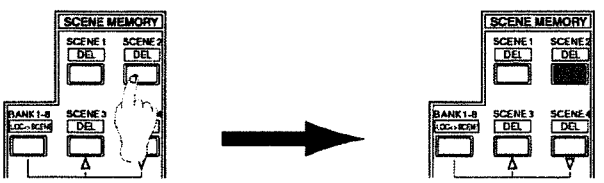
MEMO
For the effect patches using "Speaker Modeling", refer to the "Effect Patch List".

Skillful Use of SCENE MEMORY

The VM -3100 allows you to store up to 32 different mixes as scenes, making it ideal for use in live situations with PAs, for multitrack recording, and in other situations where adjustments to mics and instruments are required. Many events require adjustment of the mixer settings for each program or act. You might save the mix for vocals with accompaniment to SCENE 1, the settings for announcements or addresses during intermission to SCENE 2, and the settings for mics used for a chorus to SCENE 3. Later, at each point in the program, you can call up the settings with the press of a button. We strongly recommend gaining proficiency in the use of scenes to take full advantage of the VM-3100s power.

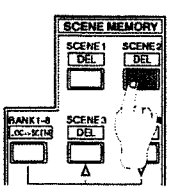
Saving your mix to a SCENE MEMORY

1. After adjusting the faders and effects, press an unlit SCENE button.
2. The button will light, indicating the mix is stored to that SCENE location.

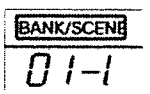


Recalling a mix from SCENE MEMORY

1. Press a lit SCENE button.



2. The VM-3100 switches to the previously stored settings. The current fader and knob positions have no effect on the mix.



Clearing a SCENE MEMORY

1. While holding down the [SHIFT] button, press the SCENE button for the SCENE you want to clear.
2. The contents of the stored settings will be deleted, and the button will no longer light.

MEMO

Once data is cleared from SCENE MEMORY, it cannot be recovered. Use due caution when clearing SCENE MEMORY.

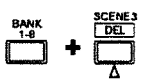
Changing the settings of a SCENE MEMORY

When you want to record new mix settings to a scene location which has already been used, first clear the SCENE MEMORY location. After confirming that the button is no longer lit, press the SCENE button once more to record the new settings.

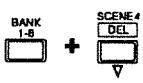
Selecting different banks of scenes

SCENE 1 to SCENE 4 comprise one BANK, and there are eight banks (a total of 32 SCENES) which you can use to store your mixes.

1. While holding down the [BANK] button, press the [SCENE3] button to increase the BANK number by one.



2. While holding down the [BANK] button, press the [SCENE4] button to lower the BANK number by one.



3. For example, if you want to select "BANK 3, SCENE 3," hold down the [BANK] button and press the [SCENE3] button twice, then release the [BANK] button and press the [SCENE3] button once.

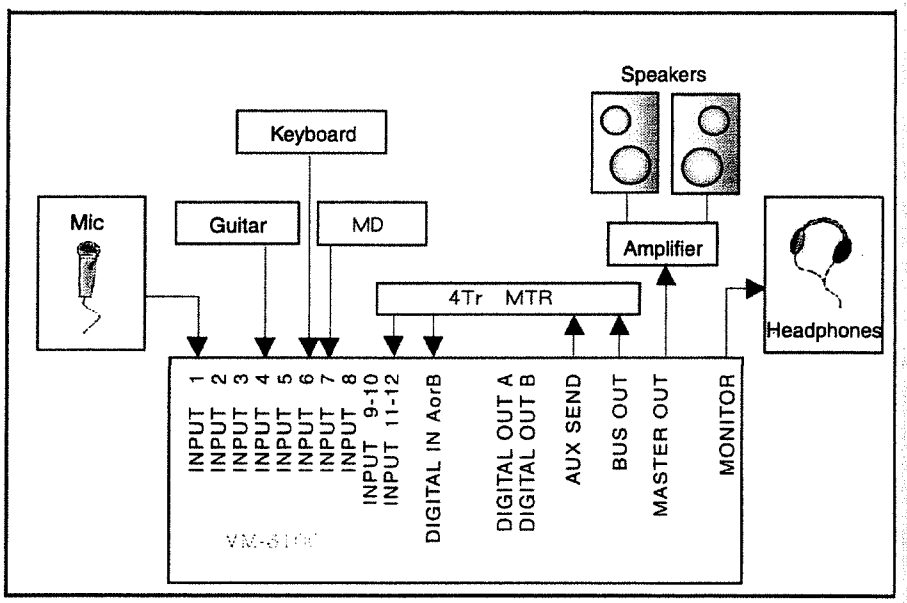
Making Demo Tapes at Your Home

Connecting Instruments and Mics and Adjusting the Sound

The VM-3100's compact design and high sound quality make it ideal for making your own demo tapes. The VM-3100 also includes a compressor effect that is perfect for recording vocals. You may use the following procedure to create your own demo tape.

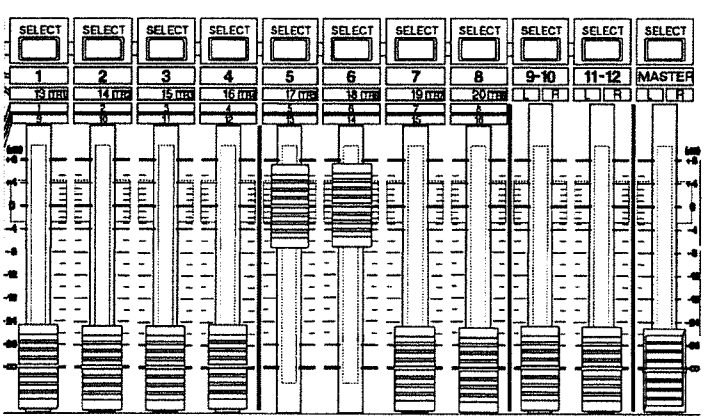
1 Refer to the following figure and connect your equipment.

After completing the connections, adjust the volume level for each device.



2 Adjust the keyboard level.

Raise the channel fader 5-6 for the channel to which the keyboard is connected to 0 dB.



NOTE

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

MEMO

The compressor can be applied when connected to Channels 1 and 2 (initial settings).

MEMO

Although this describes connections used for recording to a multitrack cassette recorder, the VM-3100 can also be connected to an MD or DAT recorder. In this case, we recommend to use the digital output.

MEMO

Before proceeding with an operation, you can press the [LEVEL METER] button to call up the Level Meter screen.

Adjust the level while listening to the keyboard sound, rotating the GAIN knob until the meter shows the proper amount of signal.

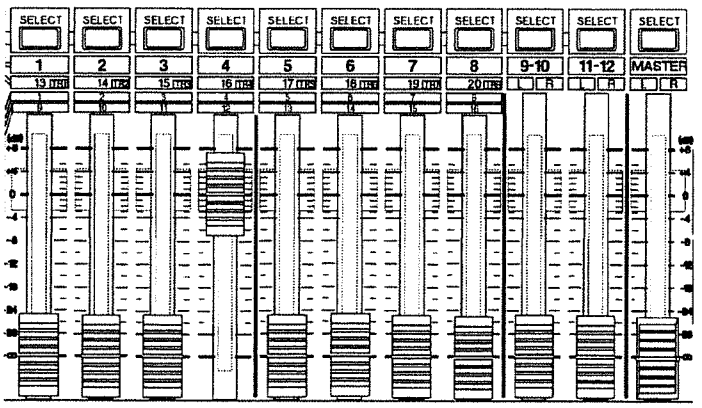
Adjust the effects, pan, and equalizer settings as desired.

MEMO

For instructions for making effect, pan, and equalizer settings, please refer to p.18.

3 Adjust the guitar level.

Next, raise the fader for the channel to which the guitar is connected to 0 dB.



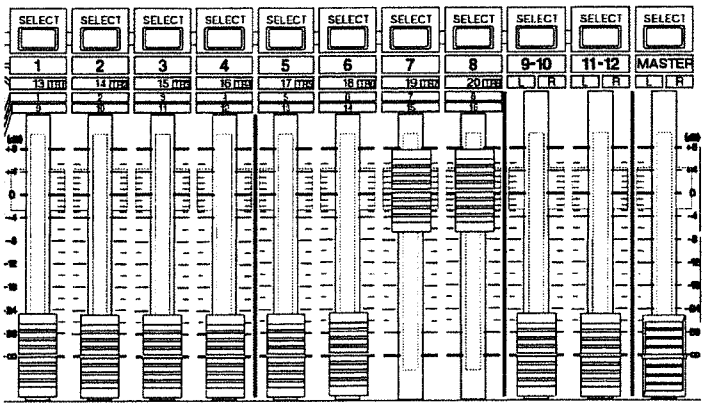
Adjust the level while listening to the guitar sound, rotating the GAIN knob until the meter shows the proper amount of signal.

Adjust the effects, pan, and equalizer settings as desired.

4 Mix in the sounds from an MiniDisk.

Try mixing a drum loop from a MiniDisk as the background for your other instruments. While playing back the MD, slowly raise Channel 9-10 to 0 dB.

Adjust the GAIN knob until the proper level is indicated in the LEVEL METER.

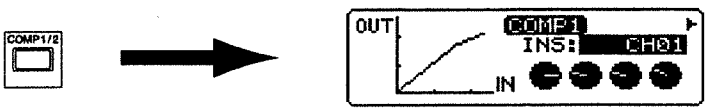


5

Adjust the mic level.

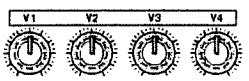
Next, adjust the volume level of the vocal mic. Raise the Channel 1 fader on the channel to which the mic is connected to 0 dB.
Adjust the level while speaking into the mic, rotating the GAIN knob until the meter shows the proper amount of signal.

Finally, add compression.
Press the [COMP1/2] button. The button will light indicating that compression has been added to this channel.



VM-3100Pro: Hold down the [SHIFT] button and press the [EFFECTS1](COMP1) button. The button will flash while the compressor is on).

Rotate the VALUE knobs V1 to V4 to adjust the compressor. The following settings can be adjusted with the knobs.



- V1 Knob..... Threshold Level
- V2 Knob..... Attack Time
- V3 Knob..... Release Time
- V4 Knob..... Ratio

In addition, you can use the cursor ◄► buttons to select the desired knob function.

V1 Knob..... OUT Level

MEMO

For instructions for parameters, please refer to the attatched sheets.

6

Check the overall balance.

Adjust the keyboard, guitar, and vocal mic levels to achieve the proper balance of the signals. Use the faders to make fine adjustments to the levels.

Watch the level meter in the display as you make the adjustments. Then set the overall level with the MASTER fader.

This completes the preparation of the VM-3100 for recording to a multitrack recorder. The next step is to prepare the recorder.

7

Set AUX SEND jack to "BUS" in EZ Routing

With EZ Routing, assign the bus function to the AUX SEND jack. First, press [EZ ROUTING], then [F1-F4 ON/OFF] to display the functions.

Press the [F2](OUT) button.

Press cursor buttons ◄ or ► until "Bus 1/2" appears at the top of the display.

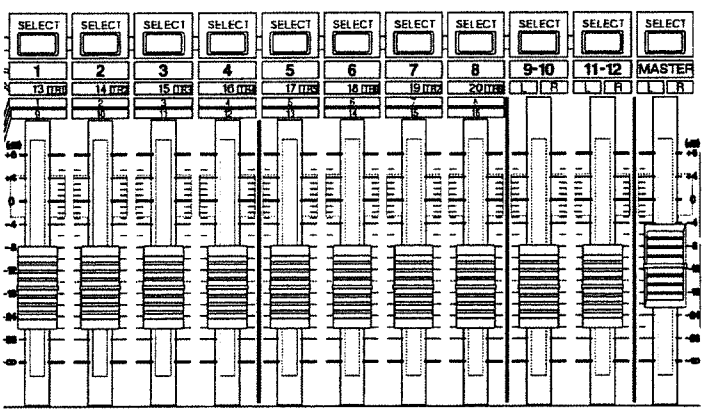
Set "Bus 1/2" to "BUS" by turning the value dial.

8

Assign the mixer channels to each track of the MTR.

Press the [BUS ASSIGN] button.

Press the [SELECT] button of the channel to be sent to the MTR.



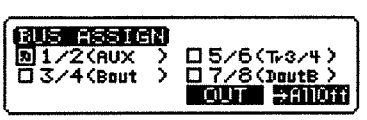
Highlight "1/2(AUX)" or 3/4(Bout)" in the display by pressing the cursor button ◄.

Check whether the signal is being sent or not by turning the value dial.

The settings are as follows:'.

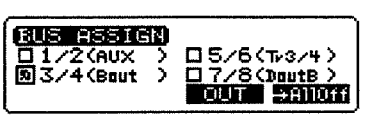
- To send the signal to tracks 1/2

→ Select "1/2(AUX)".



- To send the signal to tracks 3/4

→ Select "3/4(Bout)".

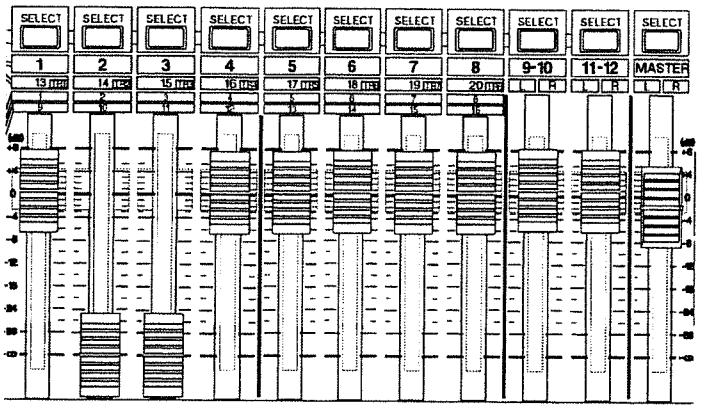


Turn up the channel faders 9-10 and 11-12 so that the playback sound of the MTR is heard.

MEMO

With a four-track recorder, track selections are as follows.

- Track 1.....BUS-L
- Track 2 .....BUS-R
- Track 3 .....AUX-1
- Track 4 .....AUX-2



9

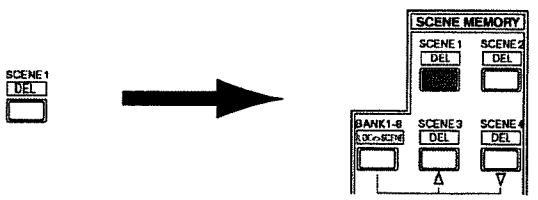
Adjust the recording equipment

Adjust the recording level with the instruments and the mic while keeping the MTR in rec-pause status.
Also adjust the input level of the MTR as well.

10

Saving your mix to a SCENE MEMORY.

Store the adjusted mix as a SCENE.
Press [SCENE1] to store the mix. The button lights, indicating that the scene has been stored.



You can now move to the next song and store your next mix as a scene.
Saving scenes for each song will save much time and effort.

MEMO

When the check mark is on, signal is sent to that bus.

MEMO

How to send signals to tracks 1 and 2, or tracks 3 and 4 is set by pan status of each channel. For the details, please refer to the appendix "How to obtain a better mix".

Try Recording the Demo Tape

When all the instrument and mic levels are adjusted, record to the tape.

1

Recalling a SCENE MEMORY for the first song.

Press the SCENE1 button to recall the contents of the SCENE.

2

Record

Press the recording deck's start button, and begin recording.

3

Start the performance

4

Stop recording.

When the performance is done, stop recording. When you are ready to continue, call up the SCENE MEMORY containing the mix prepared for the second song, then record.

Your entire demo tape can be completed in the same fashion.

Being able to immediately call up mix settings with SCENE MEMORY also makes it convenient for overdubbing and redoing recordings.

To Cancel a SCENE MEMORY That Has Been Called Up

If you've mistakenly called up a SCENE MEMORY you didn't really want, you can restore the status that existed before the SCENE was called up by using the Undo function.

**Undo Hold down the [SHIFT] button and press [EXIT/NO].*

The SCENE that was called up is cancelled.

Furthermore, if you want to retract the Undo, carry out the Redo function.

**Redo Hold down the [SHIFT] button and press [ENTER/YES].*

The SCENE that was undone is reinstated.

Using the VM-3100 as a Keyboard Submixer

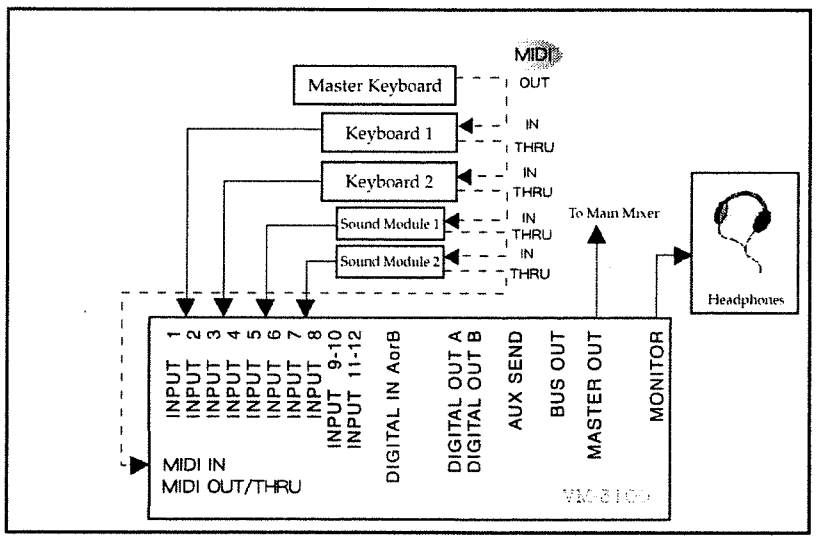
Recalling SCENEs with a MIDI Keyboard

In concert or in the studio, one thing that is indispensable for mixing multiple keyboards in a keyboard submixer. The VM-3100 allows you to recall scenes from a MIDI keyboard. This saves time and effort when operating the mixer during performances.

1

Connect your keyboards as indicated in the following figure.

This setup uses three keyboards and two sound modules.
If you are using only one keyboard, connect the keyboard's MIDI OUT to the mixer's MIDI IN, and the keyboard's MIDI IN to the mixer's MIDI OUT.



2

Adjust the level of the keyboard.

Raise the fader on the channel to which Keyboard 1 is connected.
Adjust the level while playing the keyboard, rotating the GAIN knob until the meter shows the proper amount of signal.
Adjust the effects, pan, and equalizer settings as desired.
When you have finished making the settings, save them to a SCENE MEMORY. At this time, store the mix in BANK 1, SCENE 1.

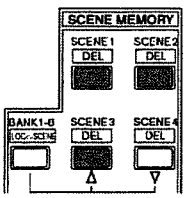
NOTE

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

MEMO

Before proceeding with an operation, you can press the [LEVEL METER] button to call up the Level Meter screen.

Use the same procedure to make adjustments to Keyboards 2 and 3, and save them to SCENE 2 and SCENE 3 in BANK 1, respectively.



When using more than one keyboard at the same time, mix and store them together in a SCENE MEMORY.

3

Adjust the Master Keyboard.

Next, enable the master keyboard to send MIDI Program Change messages. For more detailed instructions on making these settings, please refer to the keyboard owner's manual.

4

Set the VM-3100 to be changed from the Master Keyboard

Use the following procedure to enable the VM-3100 to receive Program Change messages from the master keyboard.
Press the [SYSTEM] button, then press the [F1-F4 ON/OFF] button.

Press the [F2] (MIDI) button to select SYSTEM MIDI.

Use the CURSOR buttons to select "SceneRx. Ch", and set the channel number to match the MASTER keyboard output channel.

This completes the necessary settings.

MEMO

SCENE MEMORY to which no mixer settings have been recorded cannot be called up. When selected, these are skipped.

MEMO

The VM-3100 is able to receive Program Change messages 1-32. Each Program Change message corresponds to one of SCENES in SCENE MEMORY, from BANK 1, SCENE 1 to BANK 8, SCENE 4.

5 Trying Out the System

Once the settings have been completed, you can try out the system to make sure everything works as expected.

While performing, send a Program Change message from the master keyboard.

When Program Change 1 is sent, the VM-3100 automatically calls up "BANK 1, SCENE 1."

You will find it convenient to store mixes in different SCENE MEMORIES for each song or keyboard configuration.

Using a Footswitch to change SCENE MEMORIES

A foot switch can be connected to the VM-3100. You can then use the foot switch to easily select SCENE MEMORIES.

1. Connect the foot switch to the [FOOT SWITCH] jack on the rear panel.
2. Press the [SYSTEM] button.
3. Press the CURSOR button ☐ until "FootSw Func" appears in the display.

4. Rotate the VALUE dial to select, from the following options, the way in which you want SCENEs to be switched when you operate the foot switch.

   SCENE+..... Pressing the foot switch calls up the next SCENE.

   SCENE–..... Pressing the foot switch calls up the previous SCENE.

BANK/SCENE	VM-3100 settings	
	"SCENE +"	" SCENE - "
1-1 1-2 1-3 1-4 2-1 : : 7-4 8-1 8-2 8-3 8-4	When set to "SCENE+," the VM-3100 advances to the next SCENE each time the switch is pressed.	When set to "SCENE–," the VM-3100 advances to the previous SCENE each time the switch is pressed

MEMO

When SCENE MEMORY is at 1-1, pressing "SCENE-" does not change the SCENE, even when a foot switch is used.

When SCENE MEMORY is at 8-4, pressing "SCENE+" does not change the SCENE, even when a foot switch is used.

MEMO

SCENE MEMORY to which no mixer settings have been recorded cannot be called up. When selected, these are skipped.

Using the VM-3100 for Performances and Lectures

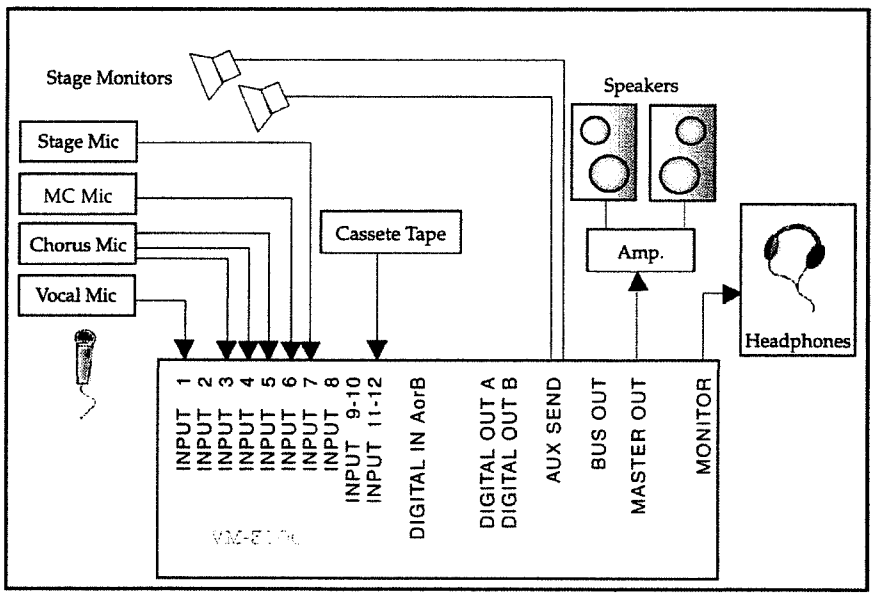
Making different mixes for live performance

An essential aspect of live performances is the management of signals from the many mics — the host or emcee's mic as well as chorus, solo vocalist, and piano mics — that are used. Level settings can be completely different for each mic, making live adjustments difficult. The VM-3100 allow you to control and adjust up to eight mics. What's more, SCENE MEMORY allows you to store different mic settings for each performance venue.

1

Connect your microphones as shown in the following figure.

This example uses one mic for the emcee, one vocalist mic, one podium mic, and three mics for the chorus. A cassette tape recorder is used to play accompaniment for the chorus and background music at the venue.



2

Adjust the emcee's mic.

Switch the level screen to Pre, and adjust the GAIN knob until the meter indicates the proper level. At this point, the channel fader should be lowered.

NOTE

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

MEMO

Before proceeding with an operation, you can press the [LEVEL METER] button to call up the Level Meter screen.

MEMO

For instructions on changing the meter display, please refer to p.21

Return to the Pst level screen and raise the channel fader, adjusting the fader until the meter shows the proper amount of signal.
Adjust the overall volume level with the MASTER fader.

Assuming that the emcee's mic will not be used simultaneously with any other mic, save these mic settings to a SCENE MEMORY. This completes the emcee's mic settings.
Use the same procedure to make the settings for the podium mic.

3

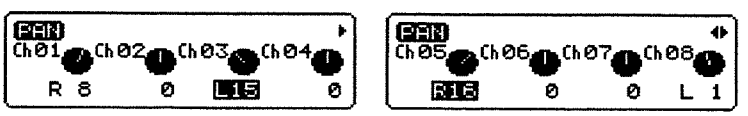
Adjust the chorus mics and the tape being used for accompaniment.

Raise the fader for the channel connected to the cassette tape recorder to 0 dB.
While playing back the tape, adjust the GAIN knob until the meter indicates the proper level.

Next, adjust the chorus mics. Switch the level screen to Pre, speak into the mic, and adjust the GAIN knob until the meter indicates the proper level. At this point, the channel fader should be lowered.

Return the to the Pst level screen and raise the channel fader, adjusting the fader until the meter shows the proper amount of signal.

Adjust the overall volume with the MASTER fader.
Equalize the mic for each section of the chorus to achieve the proper blend. For this application, make the settings as indicated below.
Also adjust each mic's pan setting so that it corresponds with the mic's position.



MEMO

Adjust the cassette tape deck if the sound from the tape is distorted.

NOTE

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

MEMO

For instructions on changing the meter display, please refer to p.21

When you have finished making these settings, adjust each channel fader until a proper balance with the cassette tape is achieved.
Adjust the overall volume with the MASTER fader.
Finally, save this mix to a SCENE MEMORY. This completes the chorus mic settings.

MEMO
For instructions on changing the meter display, please refer to p.21

4

Adjust the vocalist mic.

Switch the level screen to Pre, and adjust the GAIN knob until the meter indicates the proper level. At this point, the channel fader should be lowered.

Return to the Pst level screen and raise the channel fader, adjusting the fader until the meter shows the proper amount of signal.

Adjust the overall volume with the MASTER fader.
Next, add compression. For this application, make the settings as indicated below.
Adjust the pan and equalizer settings as needed.
When you have finished making your settings, save this mix to a SCENE MEMORY. This completes the vocalist mic settings.

5

Using the VM-3100 as a PA

Try switching SCENE MEMORIES with the order of the event's program.
Storing settings in advance for multiple microphone applications can make your presentations or concert mixes easy.

Tips

If you connect the stage monitor speakers to AUX SEND jacks, players on the stage can listen to the tape playback sound.

Control Using MIDI IN/OUT

Using a Computer for Remote Control of the VM-3100

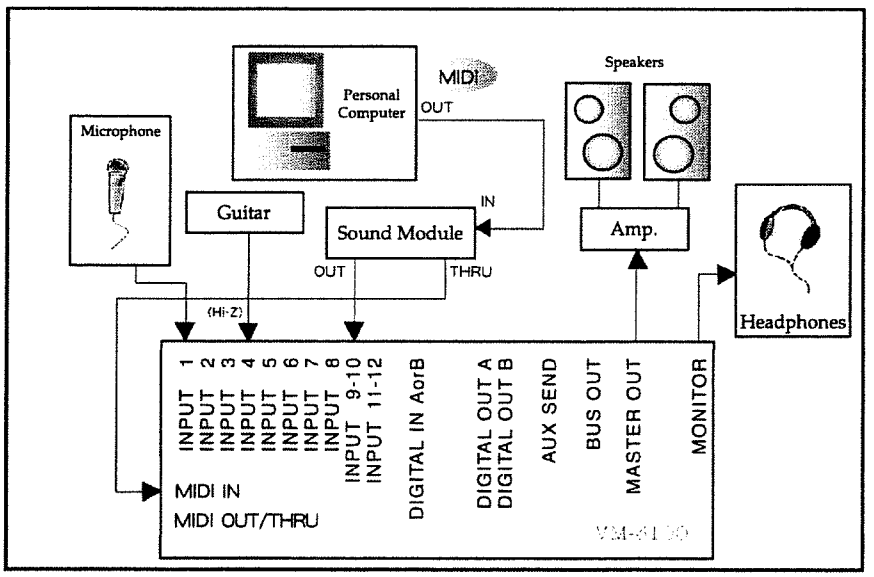
While a MIDI keyboard, footswitch, or other means may be used for controlling the VM-3100's SCENE MEMORY, another convenient method involves the use of sequencer software. In this section, we will use a sound module to play performance data created on a computer software sequencer, and layer vocals and guitar over it.

1

Connect the computer and the MIDI sound module.

The computer and the sound module are connected with an internal MIDI interface.

In addition, you must have commercial sequencing software such as "CAKEWALK" installed and configured on the computer.



2

Make the settings for each SCENE.

Within a song, the mixer settings may be different for the intro, vocal sections, guitar solo, and other sections. First store the mixes for each part to SCENE MEMORY.

Starting playback of the sequencer causes the MIDI sound module to produce the instrument sounds, with the mixer settings determined as the actual performance progresses.

For the intro, adjust the MIDI sound module and guitar channel faders to balance the volume levels of those instruments.

NOTE

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

MEMO

Before proceeding with an operation, you can press the [LEVEL METER] button to call up the Level Meter screen.

When you have finished adjusting the levels, press the [SCENE1] button to store the settings to SCENE MEMORY.

For the sections of the song containing vocals, raise the mic fader as well, again balancing the volume levels.
When you have finished adjusting these levels, press the [SCENE2] button to store the settings to SCENE MEMORY.

For the guitar solo, lower the mic channel fader, raise the guitar channel fader, and balance the volume levels.
Store this to SCENE MEMORY 3.
Press the [SCENE3] button to store the settings to SCENE MEMORY.

MEMO
Now, record this to BANK 1 in SCENE MEMORY.

MEMO
When the [SCENE 1] button is lit, it means data has already been recorded to SCENE MEMORY. Either press another unlit button or delete the contents of this button, then record the settings. For more detailed information, please refer to p.26.

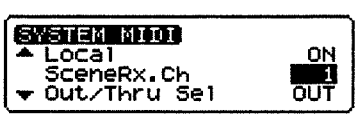
3 Make the sequencer settings.

To control the VM-3100 from the sequencer, set the sequencer as follows.

- Prepare a track on the sequencer to record the data for switching the VM-3100's SCENE MEMORY.
- Assign this prepared track to a MIDI channel that is not being used for another MIDI sound module.

4 Set the MIDI receive channel.

Set the VM-3100's MIDI receive channel so that it matches the MIDI channel of the sequencer track used for control of the VM-3100.
For more detailed information, please refer to "Controlling SCENE MEMORY with a MIDI Keyboard" (p.35).



MEMO
For detailed information about the sequencer, read the owner's manual for the sequencer you are using.

5 Record the Program Change message to the sequencer.

On the sequencer track used for controlling the VM-3100, record the following MIDI messages corresponding to each point (measure and beat) where you want the SCENE to be switched.

Intro (SCENE 1).....Program Change Number 1
Vocal Section (SCENE 2).....Program Change Number 2
Guitar Solo (SCENE 3).....Program Change Number 3

6 Now play back the sequencer to hear how the actual performance sounds.

The SCENE switches automatically at the points (measures and beats) set in Step 5.

If there is performance data starting from Measure 1 in the sequencer, add one blank measure before Measure 1, then save the data indicating the change to the Intro SCENE in that blank measure.

Try Controlling the MIDI Sequencer

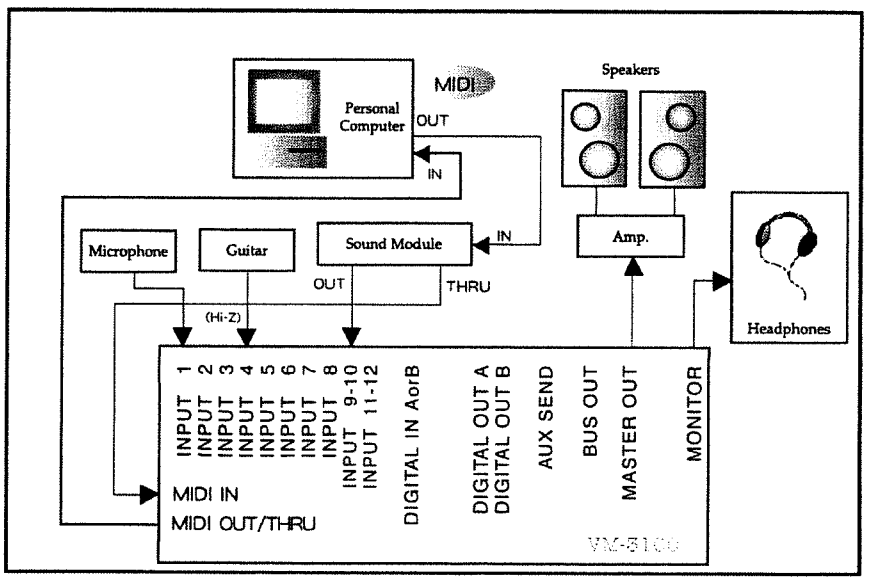
Certain sequencers can receive messages to control the sequencer's Start and Stop functions.

While the procedures for controlling the VM-3100 with a computer were explained before, here's how use the [PLAY] button and [STOP] button on the VM-3100's panel to start and stop playback of a sequencer:

1 Connect the computer and the MIDI sound module.

The computer and the sound module are connected with an internal MIDI interface.

In addition, you must have commercial sequencer software such as "CAKEWALK" installed and configured on the computer.



NOTE

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

2

Confirm the sequencer's functions.

First, confirm that your sequencer can receive MIDI messages to allow another device to start and stop playback of the sequencer.
When you have confirmed that the sequencer can do this, check which other MIDI messages the sequencer can receive.
After referring to the sequencer owner's manual, now select the MIDI messages to be used to start and stop playback of the sequencer.
Make the settings as shown below.

- MIDI message for starting playback of the sequencer Note On message for Note Number C0
- MIDI message for stopping playback of the sequencer Note Off message for Note Number D0

MEMO

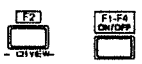
For detailed information about the sequencer, read the owner's manual for the sequencer you are using.

3

Set the VM-3100.

Next, set the VM-3100 so that the above MIDI messages are sent when the [PLAY] and [STOP] buttons are pressed.
Press the [SYSTEM] button, then press the [F1-F4 ON/OFF] button.

The Function screen is displayed; press the F2 (MIDI) button, then press the [F1-F4 ON/OFF] button.



The Function screen shown below is displayed; press the F1 (USER1) button.

MEMO

Most sequencers handle Note On and Off messages and Control Change messages. Furthermore, with many sequencers, you have further freedom in setting these MIDI messages.

Press the CURSOR button ◀, then rotate the [VALUE] dial to select "NOTE."

Next, press the CURSOR button ▶, then rotate the [VALUE] dial to select "C0."

In the same manner, select "NOTE" and "D0" for the [STOP] button.

Press the [EXIT/NO] button.
Press the ▼ CURSOR button to select "Transport."

Rotate the [VALUE] dial to select "USER1."

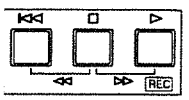
Press the ▼ CURSOR button to select "(Control)Ch," and rotate the [VALUE] dial to select the MIDI control channel number set by the sequencer.

Press the [LEVEL METER] button to bring up the Level Meter screen.

4

After confirming the settings, you're finished.

Press the [PLAY] and [STOP] buttons on the VM-3100's panel to confirm that they indeed control these sequencer functions.



Use a computer to control the Auto Fader function.

Now try using your sequencer's Realtime Recording function to automate the mix.

Auto Mixing is a function that records fade-ins, fade-outs, and other fader movements in real time, then automatically reproduces them.

MEMO

Auto mixing is a function to record the movement of each fader such as fade-in and fade-out, and recall automatically.

1

Connect the computer and the MIDI sound module.

The computer and the sound module are connected with an internal MIDI interface.

In addition, you must have commercial sequencer software such as "CAKEWALK" installed and configured on the computer.

2

Set the VM-3100.

Next, set the VM-3100 so that MIDI messages are sent in real time as the faders are moved.

Press the [SYSTEM] button, then press the [F1-F4 ON/OFF] button.

The Function screen is displayed; press the F2 (MIDI) button, then press the CURSOR button ▽ to select "ControlType"

Next, press the CURSOR button ▷, then rotate the [VALUE] dial to select "C.C."

This transmits Control Change messages from the VM-3100 when the faders are adjusted.

Next, select the MIDI channel number for the MIDI messages.
Press the CURSOR button ▼ to select "(Control)Ch," and rotate the [VALUE] dial to select "16."

3

Press the CURSOR button ▼ to select "C.C. Type," and rotate the [VALUE] dial to select "MONO."

This enables the information from each fader to be sent as Control Change messages over one MIDI channel.
Press the CURSOR button ▼ to select "Local," and rotate the [VALUE] dial to select "OFF."

With this set to "OFF," the data for the fader movements is output from the MIDI OUT/THRU connector instead of adjusting channel levels of the mixer.
Press the [LEVEL METER] button to bring up the Level Meter screen.

4

Set up the sequencer.

Set up the sequencer to enable recording of the VM-3100's fader movements as MIDI messages. (as described below)

- Prepare a track to record the data for switching the VM-3100's SCENE MEMORY.
- Assign this prepared track to an unused MIDI channel.

MEMO

Select "Local Off" when recording fader movements to a sequencer.

MEMO

For detailed information about the sequencer, read the owner's manual for the sequencer you are using.

5

Record the fader movements to the sequencer.

Put the sequencer in record standby for recording the VM-3100's tracks' status (mix), set another MIDI channel to play back the mix sent to your sound module, then begin recording to the sequencer.
Adjust the faders along with the music.
When you have finished moving your faders, stop recording with the sequencer.

6

Play back the result.

Switch the sequencer to play the track status of the VM-3100 tracks, then start playback of the sequencer.
Confirm that the recorded volume level adjustments are the same as those just made with the faders.

MEMO

Holding down the [SHIFT] button and pressing the [MIDI CH] button immediately after beginning to record with the sequencer causes the VM-3100's mixer settings to be output from the MIDI OUT/THRU connector.

Appendices

Points for Better Mixing

This section introduces useful procedures for better operation of the VM-3100.
- Words enclosed in square brackets [ ] indicate specified buttons or knobs. Example: [←], [→], [↑] and [↓] indicate cursor buttons.
- Words enclosed in quotation marks " " indicate parameter names or parameter values in the display.

■ Output

Sending signals from only a specific channel to the BUS OUT jacks

1. Press the [SELECT] button for the channel whose signals you want sent to the BUS OUT jacks.
2. Press [BUS ASSIGN].
3. Press [↓] to select "3/4 BUS."
4. Rotate the VALUE dial to place a check mark.

Sending signals from only a specific channel to the AUX SEND jacks

1. Press the [SELECT] button for the channel whose signals you want sent to the AUX SEND jacks.
2. Press [AUX SEND].
3. Press [→] one or more times and select "AUX 1" and "AUX2."
4. Rotate the VALUE dial, or the corresponding knobs [V1]-[V4], to adjust the send levels of the signals sent to AUX SEND jaks.

Setting the volume level and other settings for each output jack

1. Press [SELECT] in the MASTER section.

Adjusting the volume and balance of signals output from the BUS OUT jacks

1. Press [SELECT] in the MASTER section.
2. Press [↓] to display the "(OUTPUT) AUX/BUS" screen.
3. Press [→] to select "Bout Lev."
4. Rotate the VALUE dial to adjust the volume level.
5. Press [↓] to select "Bout Bal."
6. Rotate the VALUE dial to adjust the left/right balance.

Adjusting the volume of signals output from the AUX SEND jacks

1. Press [SELECT] in the MASTER section.
2. Press [↓] to display the "(OUTPUT) AUX/BUS" screen.
3. Press [→] to select "AUX 1/2 Lev."
4. Rotate the VALUE dial to adjust the volume level of the AUX SEND1 jack.
5. Press [→].
6. Rotate the VALUE dial to adjust the volume level of the AUX SEND2 jack.

Adjusting the volume and balance of signals output from the DIGITAL OUT connectors

1. Press [SELECT] in the MASTER section.
2. Press [↓] to display the "(OUTPUT) AUX/BUS" screen.
3. Press [→] to display the "(OUTPUT) DoutA/B" screen.
4. Press [→] to select "DoutA Lev" or "DoutB Lev."
5. Rotate the VALUE dial to adjust the volume level.
6. Press [↓] to select "DoutA Bal" or "DoutB Bal."
7. Rotate the VALUE dial to adjust the left/right balance.

Adjusting the volume and balance of signals output from the MASTER OUT jacks

1. Adjust the volume with the MASTER fader.
2. Press [SELECT] in the MASTER section.
3. Press [↓] to select "Balance."
4. Rotate the VALUE dial to adjust the left/right balance.

Selecting the signal to output from the MASTER OUT jacks

1. Press [SELECT] in the MASTER section.
2. Press [↑] to select "Source."
3. Rotate the VALUE dial to select the signal to be output.
   "MIX (Mix Bus)"
   "MON (Monitor Bus)"

Displaying the internal effects processor send level and MONITOR output level

Displaying the AUX SEND, BUS OUT, and DIGITAL OUT A/B output levels

Displaying the RMDB II output levels (VM-3100Pro only)

1. Press [LEVEL METER].
2. Press [F1] (OUT METER).
3. Press [←] or [→] to switch to the Level Meter screen of your choice.
   "(FX/MON)" screen — internal effects send level/MONITOR OUT
   "(BUS)" screen — AUX SEND, BUS OUT, DIGITAL OUT A/B
   "(TRK)" screen — RMDB II digital output (VM-3100Pro only)

Adjusting the internal effects processor send level and MONITOR output level

Adjusting the AUX SEND, BUS OUT, and DIGITAL OUT A/B output levels

Adjusting the RMDB II output levels (VM-3100Pro only)

1. Press [LEVEL METER].
2. Press [F1] (OUT FADER).
3. Press [←] or [→] to change the display to the screen showing the setting you wish to adjust.
4. Rotate the [V1]-[V4] knobs to adjust the corresponding levels.

   "(FX/MON)" screen — internal effects send level/MONITOR OUT
   [V1] knob — Effect 1 input level
   [V2] knob — Output level
   [V3] knob — Effect 2 input level
   [V4] knob — Output level
   **[V3]-[V4] knob functions are available only on the VM-3100Pro.*

   "(BUS)" screen — AUX SEND, BUS OUT, DIGITAL OUT A/B
   [V1] knob — AUX SEND output level (1 and 2 common)
   [V2] knob — BUS OUT output level
   [V3] knob — DIGITAL OUT A output level
   [V4] knob — DIGITAL OUT B Output level

   "(TRK)" screen — RMDB II digital output (VM-3100Pro only)
   [V1] knob — RMDB II DIGITAL OUT 1 and 2 output level
   [V2] knob — RMDB II DIGITAL OUT 3 and 4 output level
   [V3] knob — RMDB II DIGITAL OUT 5 and 6 output level
   [V4] knob — RMDB II DIGITAL OUT 7 and 8 output level (Odd/even channels common)

■ EQUALIZER

Calling up the Equalizer screen with the knobs

1. Press [SYSTEM].
2. Press [↓] to select "EQ ScreenJump."
3. Rotate the VALUE dial to set this to "ON."
   * *When set to "ON," rotating the [HIGH], [MID], or [LOW] knobs calls up the "(EQ)" screen.*
   * *When set to "OFF," the "(EQ)" screen is not displayed.*

With the "(EQ)" screen displayed, carry out the following.

1. Press [LEVEL METER].
2. Press [F1-F4 ON/OFF].
3. The functions appear in the display.
4. Press [F4] (EQ).

Adjusting the equalizer's frequencies and Q setting

1. Call up the Equalizer screen.
2. Press [SELECT] for the channel whose equalizer you wish to adjust.
3. Use the [↑], [↓], [←], and [↓] buttons to select the frequencies to be adjusted, Q, and gain.
4. Rotate the VALUE dial to adjust the values.

Turning the equalizer on and off

1. Call up the Equalizer screen.
2. Press [F4] (>OFF) or [F4] (>ON).

Copying equalizer settings to another channel

1. Call up the Equalizer screen.
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F3] (COPY).
4. Press [←] to select "Source."
5. Rotate the VALUE dial to select the source channel you wish to copy from.
6. Press [→] to select "To."
7. Rotate the VALUE dial to select the destination channel you wish to copy EQ settings to.
8. Press [ENTER/YES] two times.

Saving equalizer settings to the Library

1. Call up the Equalizer screen.
2. Press [SELECT] for the channel on which you want to save these settings.
3. Press [F1-F4 ON/OFF]. The functions appear in the display.
4. Press [F2] (SAVE).
5. Press [↑] to select "No."
6. Rotate the VALUE dial to select the position in the library where you want to save these settings.
7. Press [↓] to select "Name."
8. Use the [←] and [→] buttons and the VALUE dial to input the Name.
   * *By pressing [F1] (Ins), you can insert one character at the cursor position; press [F2] (Del) to delete one character at the cursor position.*
9. Press [ENTER/YES] two times. Alternatively, you can press [F4] (EXEC) followed by [ENTER/YES].

Calling up various equalizer settings

1. Call up the Equalizer screen.
2. Press [SELECT] for the channel on which you want to load.
3. Press [F1-F4 ON/OFF]. The functions appear in the display.
4. Press [F1] (LOAD).
5. Rotate the VALUE dial to choose the Library number you want to load.
   * *Press [F1] (>Pre) or [F2] (>User) to go to the beginning Preset or User numbers.*
6. Press [ENTER/YES] two times.

Deleting Unneeded Equalizer Settings (Delete EQ Library)

1. Call up the Equalizer screen.
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F4] (DEL).
4. Rotate the VALUE dial to select the Library number to you want to delete.
5. Press [ENTER/YES] two times.

■ EZ ROUTING

Calling up various routings

1. Press [EZ ROUTING].
2. Rotate the VALUE dial to display the name of the abailable routing settings.
3. Press [ENTER/YES].

Changing routings between inputs and channels

1. Press [EZ ROUTING].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F1] (IN).
4. Use the [←] and [→] buttons to select the channel number "Ch**=" (where ** is the channel number).
5. Rotate the VALUE dial to select the INPUT that your signal is coming from.

Selecting the internal bus function

1. Press [EZ ROUTING].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F2] (OUT).
4. Use the [↑] and [↓] buttons to select the internal bus name "Bus */*=" (where */* is the internal bus number).
5. Rotate the VALUE dial to select the internal bus function.
   "SND-M (Send Monaural)"
   "SND-S (Send Stereo)"
   "BUS (Bus)"
   * *Settings affecting transmission of signals from channels to internal buses set to "SND-M" or "SND-S" are made in the "(AUX SEND)" screen (press [AUX SEND]).*
   * *Settings affecting transmission of signals from channels to internal buses set to "BUS" are made in the "(BUS ASSIGN)" screen (press [BUS ASSIGN]).*

Changing routings between OUTPUT , MONITOR (the internal bus), and other destinations

1. Press [EZ ROUTING].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F2] (OUT).
4. Use the [←] and [→] buttons to select the OUTPUT "Aux=," Bus=, "DoutA=," or "DoutB=."
5. Rotate the VALUE dial to select the internal bus you want routed to OUTPUT.

Routing effects

1. Press [EZ ROUTING].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F3] (FX).
4. Use the [↑] and [↓] buttons to select "Location" (location in the mixer) and "Patch" (the patch number).
   * *On the VM-3100Pro, use the [←] and [→] buttons to switch between Effect1 and Effect2).*
5. Rotate the VALUE dial to select the location in the mixer and patch number.

Returning to the prior when editing routings

1. Hold down the [SHIFT] button and press [EXIT/NO].
2. Press [ENTER/YES].

Saving routing settings

1. Press [EZ ROUTING].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press any of the buttons [F1] (IN)-[F3] (FX).
4. Press [F1-F4 ON/OFF]. The functions appear in the display.
5. Press [F4] (SAVE).
6. Press [↑] to select "To No.**."
7. Rotate the VALUE dial to select a position to save your settings to.
8. Press [↓] to select "Name" and "Memo."
9. Use the [↑], [↓], [←], and [↓] buttons and the VALUE dial to set the Name and write a Memo for the routing settings.
   * *By pressing [F1] (Ins), you can insert one character at the cursor position; press [F2] (Del) to delete one character at the cursor position.*
10. Press [ENTER/YES] two times.

Deleting Unneeded routing Settings (Delete EZR Set)

1. Press [EZ ROUTING].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F4] (DEL).
4. Rotate the VALUE dial to select the routing number you want to delete.
5. Press [ENTER/YES] two times.

■ INPUT

Using a condenser mic (Phantom Power)

1. Press [SYSTEM].
2. Press [↓] to select "Phantom."
3. Rotate the VALUE dial to select "ON."
   * *Turn the Phantom Power setting to "OFF" when a device that does not require phantom power is connected to INPUT 1 or 2.*

Displaying the Level Meter for Channels 13-20 (VM-3100Pro only)

1. Press [AUDIO CH] until the button's indicator lights green.
   * *To prevent hazard or damage, ensure that only microphone cables and microphones designed to IEC-268-15A are connected.*
   * *Afin d'éviter tout risque ou dommage, ne brancher que des câbles de microphone et des microphones conformes à la norme IEC-268-15A.*

Inputting signals from digital devices

1. Use a digital coaxial or optical cable to connect the digital output of the digital device to the VM-3100's DIGITAL IN A or B connectors (A is coaxial, B is optival).
2. Hold down [SHIFT] and press [DIGITAL IN] (CLK SELECT).
3. Rotate the VALUE dial or press [F2] (>DinA) or [F3] (>DinB) to select "DIN-A" or "DIN-B."
   * *When setting "A" or "B," select the one corresponding to the name of the connector to which the digital cable is connected.*
4. Raise the Channel 11-12 fader to a suitable level.

Listening to a CD player connected digitally to channels other than Channel 9-10

1. Hold down [SHIFT] and press [SELECT] for the channel you want to assign the digital input to.
2. Press [↑] to select "Source."
3. Rotate the VALUE dial to select :DIN-L" and "DIN-R" (DIGITAL INPUTS).

Digitally increasing the input levels of INPUT 9-12

1. Hold down [SHIFT] and press [SELECT] for the channels from which INPUT 9-12 are connected.
2. Press [↓] to select "D.Boost (9/10)" or "D.Boost (11/12)."
3. Rotate the VALUE dial to select "ON."
   * *When set to "D.Boost=ON," signals from INPUT 9-12 are increased by 18 dB.*

■ EFFECTS

Turning effects on and off

1. Press [EFFECTS 1].
   * *On the VM-3100Pro, press [EFFECTS 1] or [EFFECTS 2].*
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F1] (>OFF) or (>ON). The effects are turned on or off.
   * *You can confirm whether the effects are on or off by checking "EFFECTS" in the display.*

Selecting effects patches with the [VALUE] dial

1. Press [EFFECTS 1].
   * *On the VM-3100Pro, press [EFFECTS 1] or [EFFECTS 2].*
2. Rotate the VALUE dial until the name of the patch you want to select to appears in the display.
3. Press [ENTER/YES]. The patch is switched.

Adjusting effect settings

1. Press [EFFECTS 1].
   * *On the VM-3100Pro, press [EFFECTS 1] or [EFFECTS 2].*
2. Press the [←] or [→] button or rotate knobs [V1]-[V4] to select the screen for the effects parameter you want to adjust.
3. Rotate knobs [V1]-[V4] to change the values of the indicated effects parameters.

Changing the effects' mixer location

1. Press [EFFECTS 1].
   * *On the VM-3100Pro, press [EFFECTS 1] or [EFFECTS 2].*
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F2] (LOC).
4. Press [↓] to select "Location."
5. Rotate the VALUE dial to select the effects location.

Using effects at fixed output levels

1. Press [EFFECTS 1].
   * *On the VM-3100Pro, press [EFFECTS 1] or [EFFECTS 2].*
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F2] (LOC).
4. Press [↑] to select "LKnobSw."
5. Rotate the VALUE dial to set this to "OFF."
   * *Fine adjustments to the effect output level can be made with the "Out Level" control in the same screen.*

Adding the "Vocal Multi" effects to Channel 1

1. Press [EFFECTS 1].
2. Press [PATCH SELECT] one or more times until the "Vo MULTI" lamp is lit.
   * *To select patches with the dial: rotate the VALUE dial to change to the desired patch number, then press [ENTER/YES].*
3. Press [F1-F4 ON/OFF]. The functions appear in the display.
4. Press [F2] (LOC).
5. Press [↓] to select "Location."
6. Rotate the VALUE dial to select "INS CH1."

7. Rotate the [EFFECTS LEVEL] knob to adjust the volume level of the effect.

Adding the "Guitar Multi" effects to Channel 4

1. Press [EFFECTS 1].
2. Press [PATCH SELECT] one or more times until the "Gtr MULTI" lamp is lit.
   * *To select patches with the dial: rotate the VALUE dial to change to the desired patch number, then press [ENTER/YES].*
3. Press [F1-F4 ON/OFF]. The functions appear in the display.
4. Press [F2] (LOC).
5. Press [↓] to select "Location."
6. Rotate the VALUE dial to select "INS CH4."
7. Rotate the [EFFECTS LEVEL] knob to adjust the volume level of the effect .

Making adjustments while viewing the values (VM-3100Pro only)

1. Press [EFFECTS 1] or [EFFECTS 2].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F3] (VALUE).
4. Press [↑], [↓], [←], or [→] to select the effects module or parameter you wanto to adjust.
5. Rotate the VALUE dial to turn the effects module on or off, or to adjust the parameter value.
   * *The VM-3100Pro features a "Module" screen in which effect modules can be turned on and off and a "Parameter" screen in which parameters can be adjusted.*

Saving adjusted effect patches (VM-3100Pro only)

1. Press [EFFECTS 1] or [EFFECTS 2].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F4] (SAVE).
4. Press [↑] to select "Patch."
5. Rotate the VALUE dial to select the position where you want to save your patch.
6. Press [↓] to select "Name."
7. Use the [←] and [→] buttons and the VALUE dial to Name the patch.
   * *By pressing [F1] (Ins), you can insert one character at the cursor position; press [F2] (Del) to delete one character at the cursor position.*
8. Press [ENTER/YES] two times. Alternatively, you can press [F4] (EXEC) followed by [ENTER/YES].

■ COMPRESSOR

Selecting COMPRESSOR 1 or COMPRESSOR 2

<With the VM-3100>
To select COMPRESSOR 1:
Press [COMP 1/2].
COMPRESSOR 1 is turned on or off simultaneously.
To select COMPRESSOR 2:
Hold down [SHIFT] and press [COMP 1/2].
COMPRESSOR 2 is turned on or off simultaneously.

<With the VM-3100Pro>
To select COMPRESSOR 1:
Hold down [SHIFT] and press [EFFECTS 1] (COMP 1).
COMPRESSOR 1 is turned on or off simultaneously.
To select COMPRESSOR 2:
Hold down [SHIFT] and press [EFFECTS 2] (COMP 2).
COMPRESSOR 2 is turned on or off simultaneously.

Selecting the channel to which compression is to be added

1. Press [COMP 1/2], or hold down [SHIFT] and press [COMP1/2].
2. Rotate the VALUE dial to select the number of the channel to which compression is to be added.

Using the two compressors as a "stereo pair"

1. Press [COMP 1/2], or hold down [SHIFT] and press [COMP1/2].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F2] (LINK).
4. Press [ENTER/YES]. The compressors function as a "stereo pair."
   * *When functioning as a stereo pair, settings made to COMPRESSOR 1 are also aplied to COMPRESSOR 2, and the compression is added to two adjacent channels.*

Separating compressors that have been linked as a "stereo pair" and using them as two independent compressors

1. Press [COMP 1/2], or hold down [SHIFT] and press [COMP1/2].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F2] (UnLINK).
4. Press [ENTER/YES]. The compressors function as two independent compressors.

Adjusting the compressors while viewing the values

1. Press [COMP 1/2], or hold down [SHIFT] and press [COMP1/2].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F3] (KNOB).

Saving compressor settings

1. Press [COMP 1/2], or hold down [SHIFT] and press [COMP1/2].
2. Press [F1-F4 ON/OFF] two times. The functions appear in the display.
3. Press [F2] (SAVE).
4. Press [↑] to select "No.."
5. Rotate the VALUE dial to select the number position in the Library where you want to save these settings.
6. Press [↓] to select "Name."
7. Use the [←] and [→] buttons and the VALUE dial to name the custom setting.
   * *By pressing [F1] (Ins), you can insert one character at the cursor position; press [F2] (Del) to delete one character at the cursor position.*
8. Press [ENTER/YES] two times. Alternatively, you can press [F4] (EXEC) followed by [ENTER/YES].

Selecting various compressor settings

1. Press [COMP 1/2], or hold down [SHIFT] and press [COMP1/2].
2. Press [F1-F4 ON/OFF] two times. The functions appear in the display.
3. Press [F1] (LOAD).
4. Rotate the VALUE dial to select the Library number you want to load.
   * *Press [F1] (>Pre) or [F2] (>User) to go to the beginning Preset or User numbers.*
5. Press [ENTER/YES] two times.

Deleting Unneeded Compressor Settings

1. Select the Compressor screen.
2. Press [F1-F4 ON/OFF] two times. The functions appear in the display.
3. Press [F4] (DEL).
4. Rotate the VALUE dial to select the Library number to be deleted.
5. Press [ENTER/YES] two times.

■ SCENE MEMORY

Selecting the SCENE BANK while viewing the names

1. Press [BANK].
2. Rotate the VALUE dial to select a SCENE BANK number.
3. Press [ENTER/YES].

To set a SCENE so that only the specified parameters to be reflected in the mix

1. Press [BANK].
2. Press [F1] (PREF).
3. Press [↑] to select "ItemSelect."
4. Use the [↑], [↓], [←], and [↓] buttons to select the parameters to be reflected in the SCENE recall.
5. Rotate the VALUE dial to place a check mark in the box.
   Fader — affects the volume settings
   Pan — affects the pan settings
   EQ — affects the equalizer settings
   Routing — affects the input and output routing
   Send Level — affects the send levels to the effects and AUX
   Effects — affects the effect settings
   Compressor — affects the compressor settings

To get a SCENE to apply a smooth transition between track volumes when a scene is recalled (fade-in or fade out)

1. Press [BANK].
2. Press [F1] (PREF).
3. Press [↓] to select "Trans.Speed."
4. Rotate the VALUE dial to set the length of time during which the volume will change in each channel when a SCENE is switched.

Naming a BANK

1. Select the BANK to be named (hold down [BANK] and press [SCENE3] or [SCENE4]).
2. Press [BANK].
3. Press [F1-F4 ON/OFF]. The functions appear in the display.
4. Press [F1] (NAME).
5. Use the [←] and [→] buttons and the VALUE dial to set the Name.
   * *By pressing [F1] (Ins), you can insert one character at the cursor position; press [F2] (Del) to delete one character at the cursor position.*
6. Press [ENTER/YES] two times. Alternatively, you can press [F4] (EXEC) followed by [ENTER/YES].

Copying the content of one SCENE to another SCENE

1. Press [BANK].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F2] (COPY).
4. Press [←] to select "Source."
5. Rotate the VALUE dial to select the copy source BANK/SCENE number.
6. Press [→] to select "To."
7. Rotate the VALUE dial to select the copy destination BANK/SCENE number.
8. Press [F4] (EXEC) (When the message "Are You SURE?" appears in the display, press [ENTER/YES]).

Exchanging the content of one SCENE with that of another SCENE

1. Press [BANK].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F3] (SWAP).
4. Press [←] to select "Source."
5. Rotate the VALUE dial to select the swap source BANK/SCENE number.
6. Press [→] to select "To."
7. Rotate the VALUE dial to select the swap destination BANK/SCENE number.
8. Press [F4] (EXEC), then press [ENTER/YES].

Undoing and redoing a SCENE

<SCENE Undo>

If you mistakenly switch a SCENE, you can restore the mixer settings as they were before being switched.

1. Hold down [SHIFT] and press [EXIT/NO] (UNDO).
2. Following the excution of the undo command the SCENE will be indicated by a "U" mark in "BANK/SCENE" in the display.

<SCENE Redo>

This changes the mixer settings back to their condition prior to thr UNDO of the SCENE (undoes the undo).

1. Hold down [SHIFT] and press [ENTER/YES] (REDO).
2. The "u" mark disappears from "BANK/SCENE" in the display.

■ SOLO MODE
(Monitoring Only Specified Channels)

Selecting the channel to be monitored

1. Press [SOLO].
2. Press [SELECT] for the channel you want to monitor. The buttons inlight flashes.
3. Press [SOLO] once more.

Switching Solo mode

1. Hold down [SOLO]. The "SOLO MODE" screen appears in the display. Continue to hold down the button.
2. Rotate the VALUE dial or press one of the buttons [F1]-[F4] to select the Solo mode.
   "PRE EQ"
   "POST EQ"
   "AFL" (After Fader Listen)
   "IN PLACE"
3. Release the [SOLO] button.
   * *When in Solo mode, select "MIX" (MIX BUS) as the signals being output from MONITOR (headphones). If set to something other than "MIX," the sound cannot be heared from the MONITOR (headphone) jack.*
   * *When "IN PLACE" is selected, "Soloed" channels are also output from MASTER OUT (the sounds from MONITOR and MASTER OUT are the same).*

Releasing Solo mode from all channels

1. Hold down [SHIFT] and press [SOLO].

■ CHANNELS/FADERS

Selecting the channel for which the parameters are to be set

1. Press [SELECT] for the channel whose parameters you want to adjust.

Checking each channel's parameter settings

1. Press [LEVEL METER].
2. Press [F2] (CH VIEW). The settings for the currently selected channel appear in the display.

Adjusting the pan (balance) and other settings while viewing all of a channel's settings

1. Press [LEVEL METER].
2. Press [SELECT] for the channel to be adjusted.
3. Adjust the values for the parameters below with knobs [V1]-[V4].
   [V1] — Pan (Balance when Stereo Link is in effect)
   [V2] — EFFECT 1 send level

[V3] — EFFECT 2 send level (VM-3100Pro only)
[V4] — Send level to Internal bus 1/2.
(When the knob icon is displayed.)

Adjusting the volume levels of Channels 13-20 (VM-3100Pro only)

1. Press [AUDIO CH] until the buttons light is green.
2. Operate channel faders 1-8.

Checking fader positions in the display

1. Press [LEVEL METER].
2. Press [F3] (IN FADER). The fader positions for Channels 1-12 appear in the display.
3. Press [AUDIO CH] until the buttons lights is green.
   The fader positions for Channels 13-20 appear in the display (VM-3100Pro only).

Switching the method used for changing the volume when the faders are moved (Fader Match)

For example — after switching SCENE or between CHANNELS 1–2 and 13–20.

1. Press [SYSTEM].
2. Press [↓] several times and select "FaderMatch."
3. Rotate the VALUE dial to select how the faders work.
   "JUMP" — The volume levels immediately go to the fader levels as soon as the fader is moved.
   "NULL" — The volume levels change only after the fader is moved past the previous level of volume set on the channel.

A note about internal mixer volume levels and fader positions

When SCENE MEMORY is switched, the fader positions may not correspond to the mixer's internal volume levels. To determine whether or not they do match, carry out the following procedure.

1. Press [LEVEL METER].
2. Press [F3] (IN FADER). Fader positions are indicated by "H," and the positions corresponding to the mixer's internal volume levels are indicated by "o."
   * *When the Control Match setting is "FaderMatch=JUMP," the volume changes to the level corresponding to the fader position as soon as the fader is moved.*
   * *When the Control Match setting is "FaderMatch=NULL," the fader begins to change the volume levels only after reaching the position corresponding to the volume set in the mixer.*

Making detailed settings for each channel (Channel Edit)

1. Hold down [SHIFT] and press [SELECT] for the channel to which you want to make more detailed settings changes.
2. Press [↑] or [↓] to select the parameter to be set.
3. Rotate the VALUE dial to adjust the value.
   * *The parameters and values that can be selected are shown below.*

Source
This selects the INPUT assigned to the channel.
IN01-IN12 (INPUT 1-12, DIN-L, DIN-R (DIGITAL IN L/R)
* *Neither "IN11" and "DIN-L" nor "IN12" and "DIN-R" can be used at the same time.*
* *With the VM-3100Pro, TR01-TR08 (RMDB II DIGITAL INPUT) may also be selected.*

Phantom (Phantom Power)
This turns the phantom power for Channels 1 and 2 on and off.
* *Enabled with "Source=IN01" and "Source=IN02" settings.*

ATT (Attenuator)
This digitally cuts the volume level of the input signal.
-18 dB, -12 dB, -6 dB, -3 dB, 0 dB

Phase
This selects the input signal phase.
NORM (Normal), INV (Inverse)

■ BUS ASSIGN

Sending the signals from a specified channel to a selected bus

1. Press [SELECT] for the channel whose signal you want to send to a bus.
2. Press [BUS ASSIGN].
3. Press [↑], [↓], [←], or [→] to select the bus.
4. Rotate the VALUE dial to place a check mark.

Disabling transmission of a channel's signals to a bus

1. Press [SELECT] for the channel whose signals you want to prevent being sent to a bus.
2. Press [BUS ASSIGN].
3. Press [F4] (>AllOff). Transmission of the channel's signals to all busses is disabled.

Setting BUS ASSIGN for each bus parameter

1. Hold down [SHIFT] and press [BUS ASSIGN].
2. Press [↑] or [↓] to select the bus parameter.
3. Press [←] or [→] to select the channel from which signals are being sent to the designated bus.
4. Rotate the VALUE dial to place a check mark in the box.

■ PAN

Adjusting the left/right placement of the sound in the stereo field

1. Press [SELECT] for the channel whose signal placement you want to adjust.
2. Press [PAN].
3. Rotate the knob [V1]-[V4] positioned under the indicated channel number to adjust the left/right placement.

Linking two channels treating two channels as a "stereo source"

1. Press [SELECT] for two channels you want to be treated as a stereo source.
2. Press "PAN."
3. Press [F1-F4 ON/OFF]. The functions appear in the display.
4. Press [F1] (LINK) or [F3] (LINK) for the channels designated for treatment as a "stereo source."
5. Press [ENTER/YES]. The two channels are joined in a stereo link.
   * *When in linked in stereo, channel parameters other than the pan settings are copied from the odd-numbered channel.*
   * *Placement settings are shown below.*
     [V1] and [V3] — left/right balance
     [V2] and [V4] — left/right breadth

Releasing Stereo Link

1. Press [SELECT] for the two channels you want to release from the stereo link.
2. Press "PAN."
3. Press [F1-F4 ON/OFF]. The functions appear in the display.
4. Press [F1] (UnLINK) or [F3] (UnLINK) for the channels indicated as being treated as a stereo source.
5. Press [ENTER/YES].

■ MUTE MODE (Muting the sound of a specified channel)

Selecting the channel to be muted

1. Press [MUTE].

2. Press the [SELECT] button for the channel you want to mute. The button lights.
3. Press [MUTE] once more.

To unmute all channels

1. Hold down [SHIFT] and press [MUTE].

■ MONITOR

Adjusting the volume and balance of signals output from the MONITOR (headphones) jack

1. Rotate the MONITOR LEVEL knob to adjust the volume level.
2. Press [SELECT] in the MASTER section.
3. Press [↓] to display the "(OUTPUT) Monitor" screen.
4. Press [↑] or [↓] to select "Balance."
5. Rotate the VALUE dial to adjust the left/right balance.

Selecting the type of signals to be output from the MONITOR (headphones) jack

1. Hold down [SOURCE]. The "SOURCE SEL" screen appears in the display. Continue to hold down the button.
2. Rotate the VALUE dial to select the type of signals to be output from the MONITOR (headphones) jack.

- MASTER
- 1/2
- 3/4
- 5/6
- 7/8
- FX SND1
- FX SND 2

3. Release the [SOURCE] button.

Using MONITOR (headphones) to directly monitor the signals input from DIGITAL IN

1. Press [DIGITAL IN].

■ LOCATOR

Using a SCENE as a locator

1. Hold down [SHIFT] and press [BANK]. "BANK/SCENE" changes to "Loc" in the display.

Selecting the type of time output with a LOCATOR

1. Press [SYSTEM].
2. Press [↓] to select "LocType."
3. Rotate the VALUE dial to select the method to be used for measuring time.
   "MEASURE" (Measure/Beat)
   "TIMECODE" (MTC)

LOCATOR time type for recording

* *The method for measuring time that is to be recorded is determined in the 'LocType" system parameter.*

Clearing the method for measuring time recorded to the LOCATOR

1. Hold down [SHIFT] and press any flashing [SCENE 1]-[SCENE4] button.
2. The light of the button that is pressed turns off.

■ FX/AUX SEND

Selecting how signals are routed to the AUX SEND bus (Pre or Post Faders)

1. Press the [SELECT] button for the channel whose routing is to be changed.
2. Press [AUX SEND].
3. Press [F1-F4 ON/OFF].
4. Press [F1] (>Pre)(>Pst)-[F4] (>Pre)(>Pst) beneath the indicated parameter for which the signal routing is to be changed. The routing ("Pre" or "Pst") is determines whether the signal is sent to the FX or AUX bus before (Pre) or after (Post) it is affected by the channnel fader.
   * *When sending signals to an external effects processor, set this to "Pst" (Post-fader).*
   * *When sending the signals as a performer's monitor feed, set this to "Pre" (Pre-fader).*

Adjusting the send level for each send parameter

1. Press the [SELECT] button for the channel the send level of which you want to change.
2. Press [AUX SEND].
3. Press [↑] or [↓] to display the send parameter whose send level is to be set.
4. Rotate the [V1]-[V4] knobs beneath the indicated channel whose send level is being changed to adjust the send level.

■ MIDI

Using the channel faders as MIDI volume faders

1. Press [MIDI CH]. The button lights red.
2. Operate the channel faders 1-8. The output of Control Change #7 in MIDI channels 1-8 corresponds to the fader positions.
3. Press [MIDI CH]. The button lights green.
4. Operate the channel faders 1-8.
   The output of Control Change #7 in MIDI channels 9-16 corresponds to the fader positions.

Setting the MIDI channel and making other MIDI settings

1. Press [SYSTEM].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F2] (MIDI).
4. Press [↑] or [↓] to select the parameter to be set.
5. Rotate the VALUE dial to adjust the value.

Using the MIDI OUT/THRU connector as a MIDI THRU connector

1. Press [SYSTEM].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F2] (MIDI).
4. Press [↓] to select "Out/Thru Sel."
5. Rotate the VALUE dial to select "THRU."

Displaying the timing information received using MIDI

1. Press [SYSTEM].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F2] (MIDI).
4. Press [↓] to select "TimingMon."
5. Rotate the VALUE dial to select "MEASURE" or "TIMECODE."
   * *When "MEASURE" is selected, select the beat created with the MIDI Timing Clock received in "Beat."*

Remote control of MIDI sequencers

1. Press [SYSTEM].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F2] (MIDI).
4. Press [↓] to select "Transport."
5. Rotate the VALUE dial to select "SEQUENCER."
6. Press the transport buttons, such as [PLAY] and [STOP]. This allows you to control starting and stopping of the sequencer's playback.
   * *In order for a MIDI sequencer to be controlled from a VM-3100, it must have a "Remote mode" feature which allows MIDI Start and Continue messages to be received, yet still played back at the sequencer's internal tempo. (The VM-3100 does not send MIDI Timing Clock).*

Remote control of MMC-compatible recorders

1. Press [SYSTEM].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F2] (MIDI).
4. Press [↓] to select "Transport."
5. Rotate the VALUE dial to select "RECORDER."
6. Press the transport buttons, such as [PLAY] and [STOP]. This allows you to control the playback and stop functions of the MMC-compatible recorder.
   * *In order for an MMC-compatible recorder to be controlled from a VM-3100, it must have a "Remote mode" feature which allows MIDI Start and Continue messages to be received, yet still played back at the recorders internal tempo. (The VM-3100 does not send MIDI Timing Clock).*

■ OTHER SYSTEM FUNCTIONS

What is indicated in the display?

CH	BANK/SCENE	PHANTOM	EFFECTS	MEAS/BEAT
01	01-1	OFF	On	001-01
Edit Target Channel No.	BANK/SCENE Number	Phantom Power On/Off	Effects On/Off	MIDI Timing Monitor

* *With the VM-3100Pro, EFFECTS ON/OFF indicates the status for both EFFECTS 1 and 2.*

Adjusting the display contrast

1. Hold down [SHIFT] and press [SYSTEM].
2. Rotate the VALUE dial to adjust the contrast of the display.

If you become confused during a procedure and want to return to the default display

1. Press [LEVEL METER].

To see a larger time code display

1. Hold down [SHIFT] and press [LEVEL METER].

Making foot switch and panel-related settings

1. Press [SYSTEM].
2. Press [↑] or [↓] to select the parameter to be set.
3. Rotate the VALUE dial to adjust the value.

Switching the function of the SHIFT button

1. Press [SYSTEM].
2. Press [↓] to select "ShiftLock."
3. Rotate the VALUE dial to select the mode.
   "OFF" — The shift status is in effect only while the [SHIFT] button is held down
   "ONCE" — When the [SHIFT] button is pressed, shift status remains in effect until the next button is pressed (executing that action in shift mode). The shift status is then cancelled.
   "ON" — Once [SHIFT] is pressed, shift status remains in effect until [SHIFT] is pressed again.

Using the foot switch as a [SHIFT] button

1. Press [SYSTEM].
2. Press [↓] to select "FootSw Func."
3. Rotate the VALUE dial to select "SHIFT."

Using the Peak Hold function

1. Press [SYSTEM].
2. Press [↓] to select "PeakHoldSw."
3. Rotate the VALUE dial to select "ON."
   * *When set to "ON," display of the peak input level values remain in the screen. This is useful when setting levels for multiple channels because you can see their highest levels simultaneously. You can reset the peak value indication by pressing [LEVEL METER] or [F1-F4 ON/OFF].*

Blocking digital copying of your works

1. Press [SYSTEM].
2. Press [↓] to select "D.CopyProtect."
3. Rotate the VALUE dial to select "ON."
   * *"ON" ..... A "Copy Protect signal" is output with the digital signals.*
     "OFF" ..... No "Copy Protect signal" is output with the digital signals.
     "THRU" ... A "Copy Protect signal" is output with digital signals that are input with the "Copy Protect signal."

Adjusting the length of time before the Shortcut screen is displayed

1. Press [SYSTEM].
2. Press [↓] to select "SwHoldTime."
3. Rotate the VALUE dial to select the time for the screen to be displayed.
   * *Shortcut screen examples:*
     "SOLO MODE" "SOURCE SEL" "D.IN ASSIGN"

Initializing each of the VM-3100's settings

1. Press [SYSTEM].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F4] (INIT).
4. Press [↑], [↓], [←], or [→] to select the items to be initialized.
5. Rotate the VALUE dial to place a check mark at the items being initialized.
   * *Selecting "ALL" resets the VM-3100's Library and mixer settings to their original factory values.*
6. Press [ENTER/YES] two times.

Backing up the VM-3100's data

(Before carrying out this procedure, connect a MIDI cable from the MIDI IN connector of a MIDI sequencer to the VM-3100's MIDI OUT/THRU connector.)

1. Press [SYSTEM].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F3] (BULK).
4. Press [↑], [↓], [←], or [→] to select the items to be backed up.
5. Rotate the VALUE dial to place a check mark at the items being backed up.
   * *Selecting "ALL" sends the VM-3100's Library and mixer settings, in the form of System Exclusive messages, to the sequencer designated as the backup destination.*
6. Begin recording with the MIDI sequencer.
7. Press [ENTER/YES] two times.
8. When the message "Completed." appears in the display, stop recording with the MIDI sequencer.

Returning settings that have been backed up to the VM-3100

(Before carrying out this procedure, connect MIDI cable from the MIDI OUT connector of a MIDI sequencer to the VM-3100's MIDI IN connector.)

1. Press [SYSTEM].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F3] (BULK).
4. Press [F1-F4 ON/OFF]. The functions appear in the display.
5. Press [F2] (RCV). The message "Waiting.." appears in the display.
6. Begin playback from the MIDI sequencer.
7. When the message "Completed." appears in the display, stop playback of the MIDI sequencer.

■ RMDB II Settings (VM-3100Pro only)

Assigning channel signals to the RMDB II DIGITAL OUT

1. Press [EZ ROUTING].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F2] (OUT).
4. Press [→] to select "Tr1/2=" (RMDB II DIGITAL OUTPUT 1/2).
5. Rotate the VALUE dial to select the output source.
   "BUS MIX" — Mix Bus
   "BUS 1/2" "BUS 3/4" "BUS 5/6" "BUS 7/8"— Internal Bus 1/2, 3/4, 5/6, 7/8
   "BUS FX" — Effects Bus
   "CH**/**" — Channel Direct Output
6. In the same manner as before, use the [←] and [→] buttons to select "Tr1/2=," "Tr3/4=," and "Tr7/8=."
7. Rotate the VALUE dial to the output source.

Adjusting the signal level output to RMDB II

1. Press [SOURCE] in the MASTER section.
2. Press [↓] to call up the "(OUTPUT)TrackOut1-4" screen.
3. Use the [←] and [→] buttons to select "TR1"-"TR8."
4. Rotate the VALUE dial to adjust the levels.

Using the RMDB II connector for input of digital signals

<Based on the digital signals from the RMDB II connector>

1. Hold down [SHIFT] and press [DIGITAL IN] (CLK SELECT).
2. Press [F4] (>RMDB).
   * *If a DIF-AT is connected to the RMDB II connector, make the following settings.*
3. Press [LEVEL METER].
4. Press [F1-F4 ON/OFF]. The functions appear in the display.
5. Press [F3] (MTR).
6. Press [F1-F4 ON/OFF]. The functions appear in the display.
7. Press [F4] (PREF).
8. Press [↑] or [↓] to select "AudioSel."
9. Rotate the VALUE dial to select the type of multitrack recorder to be used.
   "ADAT" (Alesis ADAT)
   "DA-88" (TASCAM Model DA-88)
10. Press [↑] or [↓] to select "ClockSel."
11. Rotate the VALUE dial to select the DIF-AT sample clock source.
    "ADAT SYNC" (Sample clock from the RMDB II ADAT SYNC-IN connector is input)
    "ADAT OPT" (Sample clock from the RMDB II ADAT OPTICAL connector is input)
    "DA-88" (Sample clock from the RMDB II DA-88 T-DIF connector is input)

<Based on the digital signals from the DIGITAL IN connector>

* *The following settings cannot be used when a DA-88 is connected to the VM-3100Pro to which a DIF-AT is connected.*

1. Hold down [SHIFT] and press [DIGITAL IN] (CLK SELECT).
2. Press [F2] (>DinA) or [F3] (>DinB).
   * *If a DIF-AT is connected to the RMDB II connector, make the following settings.*
3. Press [LEVEL METER].
4. Press [F1-F4 ON/OFF]. The functions appear in the display.
5. Press [F3] (MTR).
6. Press [F1-F4 ON/OFF]. The functions appear in the display.
7. Press [F4] (PREF).
8. Press [↑] or [↓] to select "AudioSel."
9. Rotate the VALUE dial to select "ADAT."
   * *"DA-88" cannot be selected.*
10. Press [↑] or [↓] to select "ClockSel."
11. Rotate the VALUE dial to select "RMDB."

Assigning input signals from the RMDB II connector to the channels

1. Press [EZ ROUTING].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F1] (IN).
4. Press [→] to select "Ch**=" (where ** is the channel number).
5. Rotate the VALUE dial to select "TR01"-"TR08" (RMDB II DIGITAL INPUT)

Setting the DIF-AT

1. Press [LEVEL METER].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F3] (MTR).
4. Press [F1-F4 ON/OFF]. The functions appear in the display.
5. Press [F4] (PREF).
6. Press [↑] or [↓] to select the parameter.
7. Rotate the VALUE dial to adjust the value.

Placing tracks on a digital multitrack recorder in Ready (record standby) mode

1. Press [LEVEL METER].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F3] (MTR).
4. Press [SELECT] on Channels 1-8 channel to select the tracks on the multitrack recorder that are to be used for recording. [SELECT] button lights corresponding to the selected recording tracks light.

Controlling Play and Stop of a digital multitrack recorder

1. Press [SYSTEM].
2. Press [F1-F4 ON/OFF]. The functions appear in the display.
3. Press [F2] (MIDI).
4. Press [↓] to select "Transport."
5. Rotate the VALUE dial to select "RECORDER."
6. Press the transport buttons, such as [PLAY] and [STOP]. This allows you to control the digital multitrack recorder connected to DIF-AT.
   * *MMC commands (DEFERRED PLAY, STOP) are sent from the MIDI OUT/THRU connector.*

LCD Display Screen List

Basically, the screen of VM-3100Pro is displayed.
There are some differences of specifications between VM-3100 screen and VM-3100Pro.
Remark (★): can be displayed by only VM-3100Pro.
Remark #: can be displayed only when DIF-AT is connected to VM-3100Pro.

● Level Meter Screen

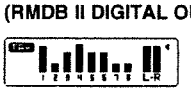
[AUDIO CH] ★

[SHIFT] + [LEVEL METER]

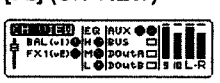
[F1] (OUT METER)

[→]

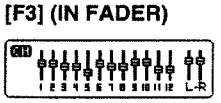
(RMDB II DIGITAL OUT) ★



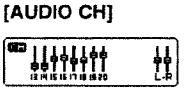
[F2] (CH VIEW)



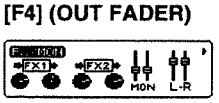
[F3] (IN FADER)



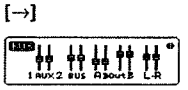
[AUDIO CH] ★



[F4] (OUT FADER)



[→]

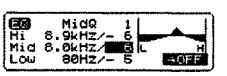


(RMDB II DIGITAL OUT) ★

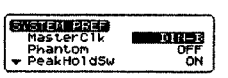
[F1-F4 ON/OFF]

[F3] (MTR) #

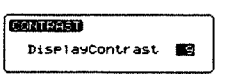
[F4] (EQ)



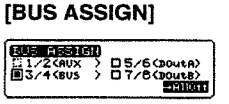
[SYSTEM]



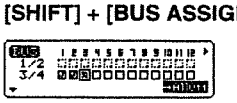
[SHIFT] + [SYSTEM]



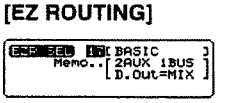
[BUS ASSIGN]



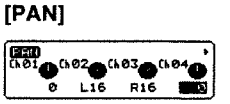
[SHIFT] + [BUS ASSIGN]



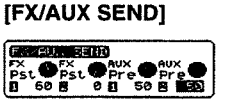
[EZ ROUTING]



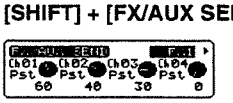
[PAN]



[FX/AUX SEND]



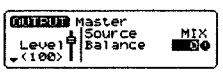
[SHIFT] + [FX/AUX SEND]



[COMP 1/2]
[SHIFT] + [EFFECTS1] ★

[EFFECTS1]
[SHIFT] + [EFFECTS2] ★
[EFFECTS1] or [EFFECTS2] ★

Master Feder [SELECT]

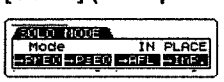


[SHIFT] + Channel [SELECT]

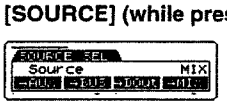
[BANK]

[SHIFT] + [DIGITAL IN] (CLK SELECT)

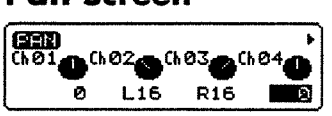
[SOLO] (while pressing)



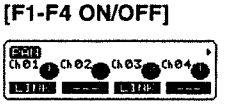
[SOURCE] (while pressing)



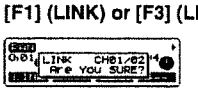
● Pan Screen



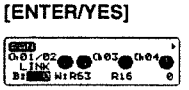
[F1-F4 ON/OFF]



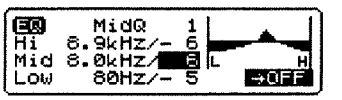
[F1] (LINK) or [F3] (LINK): Confirming Stereo Link



[ENTER/YES]

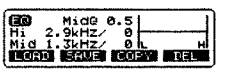


● Equalizer Screen

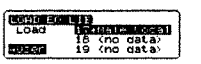


[F4] (>AllOff): Turning on/off the equalizer to the selected channel

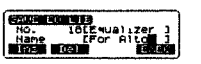
[F1-F4 ON/OFF]



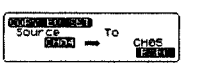
[F1] (LOAD)



[F2] (SAVE)

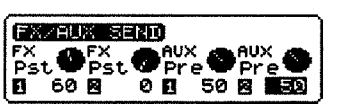


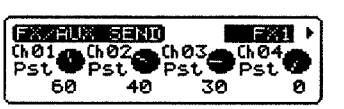
[F3] (COPY)



[F4] (DEL)

● Effect/AUX Send Screen

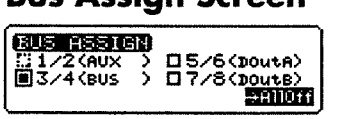




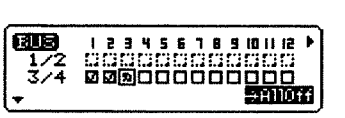
[F1-F4 ON/OFF]

[F1] – [F4]: Switching the pre/post feder send

● Bus Assign Screen



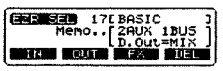
[F4] (>AllOff): Disabling BUS ASSIGN of the selected channels.



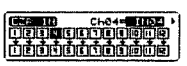
[F4] (>AllOff)

● EZ Routing Screen

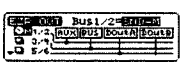
[F1-F4 ON/OFF]



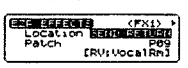
[F1] (IN)



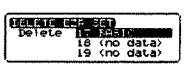
[F2] (OUT)



[F3] (FX)



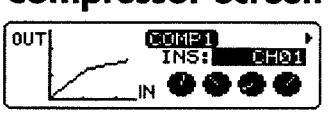
[F4] (DEL)



Input/Output/Effect Routing Screen

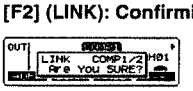
[F1-F4 ON/OFF]	(Display function)
[F1] (IN)	Input Routing Screen
[F2] (OUT)	Output Routing Screen
[F3] (FX)	Effect Routing Screen
[F4] (SAVE)	Save EZ Routing Screen

● Compressor Screen



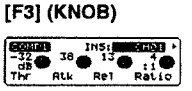
[F1-F4 ON/OFF]

[F1] (>OFF): Turning on/off the compressor
[F2] (LINK): Confirming the used streo pair



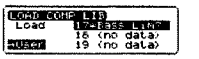
[ENTER/YES]

[F3] (KNOB)



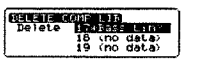
[F1-F4 ON/OFF]

[F1] (LOAD) (Press the button twice)



[F2] (SAVE)

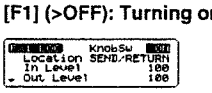
[F4] (DEL)



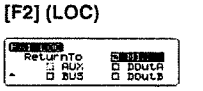
● Effect Screen

[F1-F4 ON/OFF]

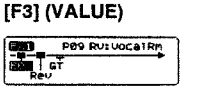
[F1] (>OFF): Turning on/off the effects



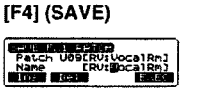
[F2] (LOC)

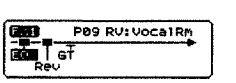


[F3] (VALUE) ★

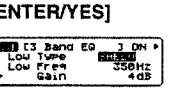


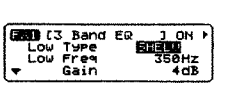
[F4] (SAVE) ★



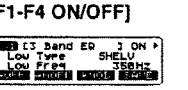


[ENTER/YES] ★

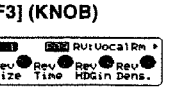




[F1-F4 ON/OFF]



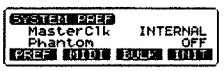
[F1] (>OFF): Turning on/off the effects
[F2] (>mOFF) : Turning on/off the effect modules
[F3] (KNOB)



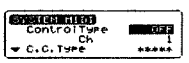
[F4] (SAVE) : Save Effect Patch Screen ★

● System Screen

[F1-F4 ON/OFF]

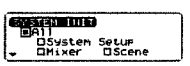


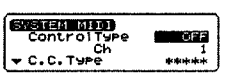
[F1] (PREF) (Remaining the same screen)
[F2] (MIDI)



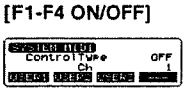
[F3] (BULK)

[F4] (INIT)

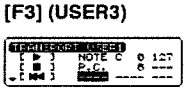




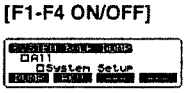
[F1-F4 ON/OFF]



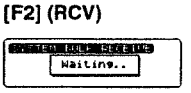
[F1] (USER1) : Transport User Screen
[F2] (USER2)
[F3] (USER3)



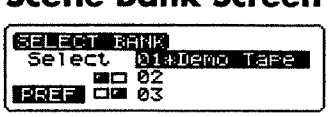
[F1-F4 ON/OFF]



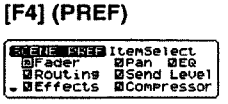
[F1] (BULK) (Remaining the same screen)
[F2] (RCV)



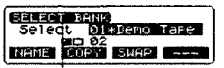
● Scene Bank Screen



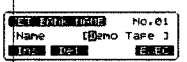
[F4] (PREF)



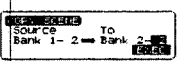
[F1-F4 ON/OFF]



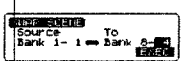
[F1] (NAME)



[F2] (COPY)



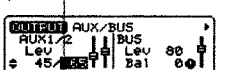
[F3] (SWAP)



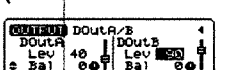
● Output Screen

[↓]

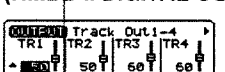
(AUX SEND Jack, BUS OUT Jack)



(DIGITAL OUT A/B Connector)

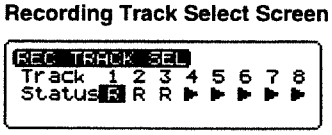


(RMDB II DIGITAL OUT) ★

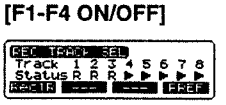


● DIF-AT Screen

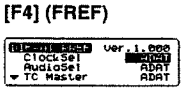
Recording Track Select Screen #



[F1-F4 ON/OFF]



[F1] (RecTR) (Remaining the same screen) #
[F4] (FREF) #

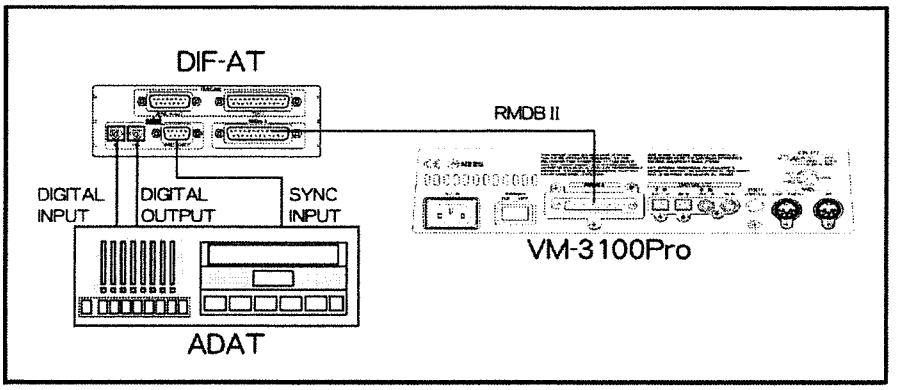


Connecting Digital Recorders to RMDB II

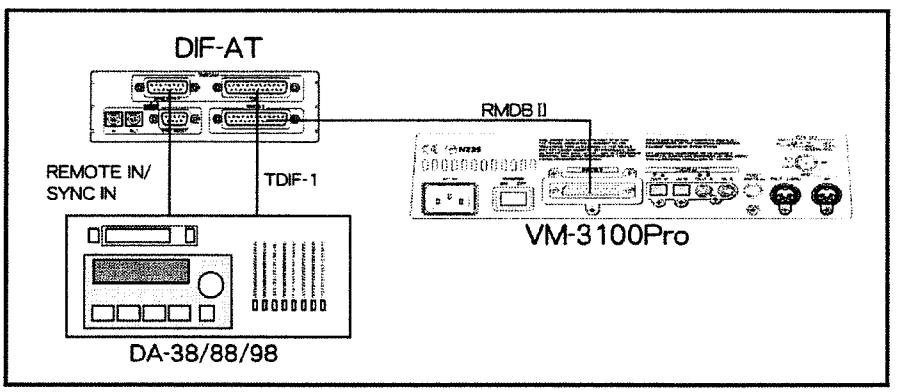
RMDB II, which is featured on the VM-3100Pro, is a bidirectional, 24-bit multichannel digital interface. Connected to Roland digital devices, this bus allows the exchange of digital audio signals and synchronization signals.
This makes it possible to synchronize multiple VM-3100Pro mixers, and with the use of the DIF-AT (sold separately), to make digital connections with ADATs and TASCAM digital recorders (DA-98/DA-88/DA-38).

■ Connection Example

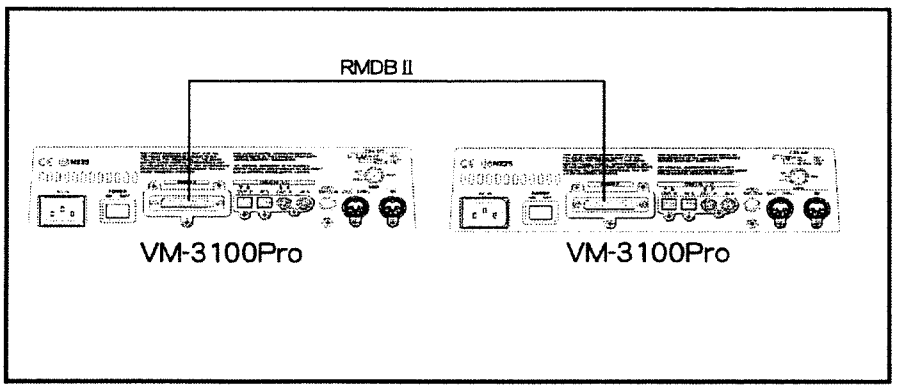
ADAT



DA-38/88/98



■ The Example of Connecting a VM-3100 with another VM-3100



■ Settings Procedure

In the case of digital connection to a VM-3100Pro, you need to set up RMDB II.
For details, reder to "RMDB II Settings" (p.58) in "Points for Better Mixing."

■ Precautions to observe in digitally connecting the VM-3100Pro that is set up with a DIF-AT to ALESIS or TASCAM digital recorders

The VM-3100Pro operates at a fixed sampling rate of 44.1 kHz. Accordingly, when digitally connecting an ADAT, DA-98/88/38, or similar device to the VM-3100Pro's RMDB II connector through DIF-AT, there are a number of precautions and limitations of which you should be aware.

Using the VM-3100Pro with DIF-AT and an earlier ADAT (Black Face)

The sampling rate for the older ADAT models is 48.0 kHz. However, when an ADAT is synchronized (as a slave) with external digital device, it can be used for recording and playback at 44.1 kHz. In other words, when connecting an earlier model ADAT to the VM-3100Pro, set the ADAT to be synchronized as the slave.

Procedure for setting the sample clock source to DIGITAL IN on the ADAT

1. Press "SET LOCATE" and "DIGITAL IN" simultaneously.
2. Pressing these toggles between INT (INTERNAL) and DIG (ADAT OPTICAL) (set this to DIG).
3. Then press "DIGITAL IN" to enable ADAT OPTICAL.

Limitations:

- ADAT tapes that have already been recorded at a sampling rate of 48.0 kHz, whether on an earlier model ADAT or otherwise, are played back at 44.1 kHz when played back on an ADAT connected via DIF-AT to the VM-3100Pro. Thus, such tapes end up being played at a lowered pitch. In such instances, rather than using the DIF-AT, connect the ADAT to the VM-3100Pro via the analog IN/OUT.
- When tapes recorded at 44.1 kHz on an ADAT which has been connected to the VM-3100Pro are then played back on an earlier model ADAT that is not connected to a VM-3100Pro, since it is played back at 48.0 kHz, the tape plays back at a higher pitch.
  In such instances, use BRC or other means to play the tape back with the Master Clock set to 44.1 kHz.
- When connected to the VM-3100Pro, the tape counter on earlier ADAT machines is calculated using the sampling rate information that is on the tape, so the timing indicated actually corresponds to a rate of 48.0 kHz. Therefore, this results in a discrepancy with the SMPTE time code indicated in the LCD screen of the ADAT. However, the correct time code appears in the VM-3100's display.

Using the VM-3100Pro with DIF-AT and an ADAT XT/LX20/XT20/M20

Using the VM-3100Pro with DIF-AT and a TASCAM DA-98/88/38

The recorder models above feature selectable sampling rates which can be switched to either 44.1 kHz or 48.0 kHz. Be sure to format tapes at 44.1 kHz when connecting one of these models to the VM-3100Pro.

Limitations:

* *When tapes that have already been recorded on one of these devices at a sampling rate of 48.0 kHz are played back at 44.1 kHz by with a device connected to the VM-3100Pro, these tapes end up being played at a lowered pitch. In such instances, rather than using the DIF-AT, connect the recorder to the VM-3100Pro via analog IN/OUT.*

Record Environment \ Play Environment	(1)	(2)	(3)	(4)	(5)	(6)
(1) VM-3100 Pro + DIF-AT + Earlier ADAT	Yes	No	Yes	No	---	---
(2) Earlier ADAT (Alone)	No	Yes	No	Yes	---	---
(3) VM-3100 Pro + DIF-AT + A-DAT(44.1kHz)	Yes	No	Yes	Yes	---	---
(4) ADAT Alone (44.1kHz)	Yes	No	Yes	Yes	---	---
(5) VM-3100 Pro + DIF-AT + DA-98/88/38(44.1kHz)	---	---	---	---	Yes	Yes
(6) DA-98/88/38 Alone (44.1kHz)	---	---	---	---	Yes	Yes

Error Message List

■ With Operational Commands

- Are You SURE?
  Is it all right to execute this operation? (When altering data)
- Delete SURE?
  Is it all right to delete? (When deleting data)
- Processing..
  Processing in progress. Please wait.
- Processing..KEEP POWER ON!
  Writing to internal memory in progress. Absolutely do not turn off the power.
- Completed.
  Processing is completed.

■ Restoring Routing Settings

(IN/OUT/EFFECT Routings Settings screen)

- Revert Routing?(YES/NO)
  Do you want to restore the routings settings to their previous conditions?

■ Switching Effect Patches and Routing Sets

(Effect Knob screen/Routing Selections screen)

- Change?(YES/NO)
  Do you want to switch the indicated effects patch or routing set?

■ Locking Channels in Stereo Link

(Pan screen)

- LINK CH**/**Are You Sure?
  Do you want to put Channels ** and ** in "Stereo Link" status?
- UNLINK CH**/**Are You Sure?
  Do you want to release Channels ** and ** from "Stereo Link" status?

■ Locking the Compressors in Stereo Link

(Compressor Curve screen)

- LINK COMP1/2 Are You Sure?
  Do you want to use the two monaural compressors as a single stereo compressor?
- UNLINK CMP1/2 Are You Sure?
  Do you want to use the single stereo compressor as two monaural compressors?

■ Setting the Master Clock

- DIGITAL IN Checking..
  Checking the signal being input to DIGITAL IN connectors A or B.
- DIGITAL IN Locked!
  The signal being input properly to DIGITAL IN connectors A or B.
- DIGITAL IN Unlock!(TemporaryINT.)
  The signal to DIGITAL IN connectors A or B is not being input properly (switching to analog input until the correct signals are input through the DIGITAL IN connector).
- RMDB II Checking..
  Checking the signal being input to RMDB II connector.
- RMDB II Locked!
  The signal being input properly to the RMDB II connector.
- DIGITAL IN Unlock!(Temporary INT.)
  The signal to the RMDB II connector is not being input properly (switching to analog input until the correct signals are input through the RMDB II connector).
- Wrong Sample Rate!(TemporaryINT.)
  The sample rate for the signal input from the DIGITAL IN A or B connectors or from the RMDB II connector is incorrect (switching to analog input until the sample rate for the signal input from the DIGITAL IN A or B connectors or from the RMDB II connector is correct).

■ SCENE MEMORY Operations

- Changing SCENE..
  Calling up SCENE MEMORY.
- Clearing SCENE..KEEP POWER ON!
  Clearing SCENE MEMORY.
- Writing SCENE..KEEP POWER ON!
  Writing SCENE MEMORY. Do not turn off the power.

■ Bulk Dump/Receive Operations

(System Bulk Dump/Receive screen)

- Now Sending..
  Sending of bulk data is in progress.
- Waiting..
  Waiting to receive bulk data.
- Now Receiving..
  Reception of bulk data is in progress.

■ MIDI Reception

- MIDI Rx Error.(WrongFormat.)
  An incorrect MIDI message was received (the message is disregarded).
- MIDI Rx Error.(AddressError.)
  The System Exclusive message address data or data size is incorrect (the message is disregarded).

Troubleshooting

If the VM-3100/3100Pro does not operate as expected, check the following points before concluding that there is any malfunction or breakdown. If after checking the indicated items the problem persists, consult your nearby Roland Service or your Roland dealer.

■ No sound is produced.

- The power for the VM-3100/3100Pro or connected device has not been switched on.
- One or more audio cables are not properly connected.
- There is a short in an audio cable.
- The volume of a connected amp or input device is turned down or is turned down.
- The VM-3100/3100Pro volume controls are turned down.
  Channel Fader
  MASTER Fader
  MONITOR Knob
  → In certain instances, such as when calling up SCENE MEMORY, the actual volume level may not correspond to the fader positions. Confirm the fader operation method being used.
- The volume level of the instrument connected to VM-3100 is too low.
  → Could you be using a connection cable that contains a resistor? Use a connection cable that does not contain a resistor.

■ There is no sound from a specific channel.

- The INPUT GAIN knob is turned down.
- The channel volume level is down.
  → In certain instances, such as when calling up SCENE MEMORY, the actual volume level may not correspond to the fader positions. Confirm the fader operation method being used. (p.26)
- AUDIO CH has not been set for the Fader Assign function. (p.12)
- The Solo or Mute functions are being used. (p.54, 55)
- BUS ASSIGN is selected for the channel. (p.55)
  → When BUS ASSIGN is selected for the channel, the signal is not output to MASTER OUT.

■ There is no sound from the headphones.

- The MONITOR LEVEL knob is turned down.
- The MONITOR DIGITAL IN button is pressed, setting this to ON. (p.56)
- MASTER OUT is selected for the MONITOR SOURCE.

■ There is no sound from the digital input.

- MASTER CLOCK is not set to DIGITAL IN. (p.58)
- The sampling rates are not matched.
  → The VM-3100/3100Pro is capable of receiving digital signals only at a sampling rate of 44.1 kHz. Confirm the sampling rate of the input device.

■ There is excessive noise or distortion.

- The input sensitivity is not properly adjusted.
  → Setting the input sensitivity too high causes the sound to be distorted, while setting it too low results in the sound being obscured by noise. Rotate the INPUT GAIN knobs to adjust the sensitivity so that the meters fluctuate at as high a level as possible within the range of -12 dB to 0 dB.
- A computer monitor or other noise-inducing equipment is placed near a mic.
- EQ is being used.
  → Some equalizer settings may cause distortion in the sound, even when the PEAK indicator is not lit. Try readjusting the equalizer.

■ The volume level does not change, even when the fader is moved.

- FADER ASSIGN has not been set properly. (p.12)
  → The source upon which the VM-3100/3100Pro's channel faders are to operate can be selected by pressing the [AUDIO CH] or [MIDI CH] buttons. Confirm that the assignment has been made correctly.

■ Internal Effects

No effects are being added.

- The EFFECT LEVEL knob is turned down. (p.22)
- The effects send level from the channel is turned down. (p.22)
- Insert is already being used on another channel.

■ MIDI Devices

When set to MASTER, the VM-3100/3100Pro cannot control the connected MIDI sequencer.

- The MIDI cable is not properly connected.
- There is a short in the MIDI cable.
- "OUT/Thru Sel" (the MIDI THRU switch) is not set to "Out." (p.56)
- The MIDI send/receive channels do not match. (p.36, 45)
- The MIDI sequencer settings are incorrect.
- The MIDI sequencer is not enabled for reception of messages.

When set to MASTER, the MIDI Sequencer cannot control the VM-3100/3100Pro.

- The MIDI cable is not properly connected.
- There is a short in the MIDI cable.
- The MIDI send/receive channels do not match.
- The MIDI sequencer settings are incorrect.
- The VM-3100/3100Pro is not enabled for reception of messages.

■ RMDB II

No sound is output from the RMDB II connector.

- The designated cable is not being used.
  → Regular computer cables cannot be used for connecting to the RMDB II connector. Use a cable designed especially for use with the RMDB II connector.
- MASTER CLOCK is not set to RMDB II. (p.58)
- The sampling rates are not matched.
  → The VM-3100/3100Pro is capable of receiving digital signals only at a sampling rate of 44.1 kHz. Confirm the sampling rate of the input device.

MIDI Implementation Chart

V-MIXING STATION
Model VM-3100

MIDI Implementation Chart

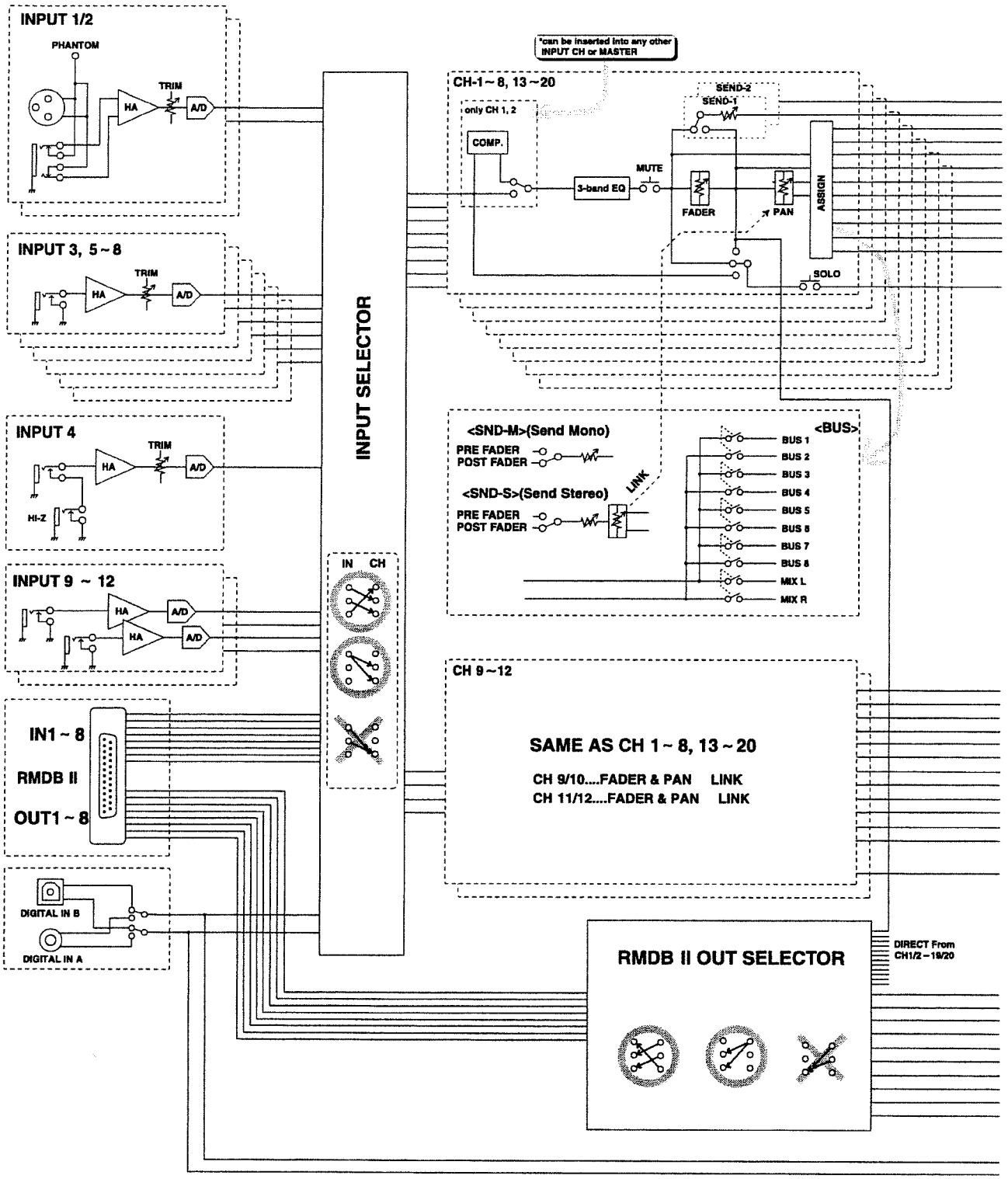
Date : Mar. 8, 1999
Version : 1.00

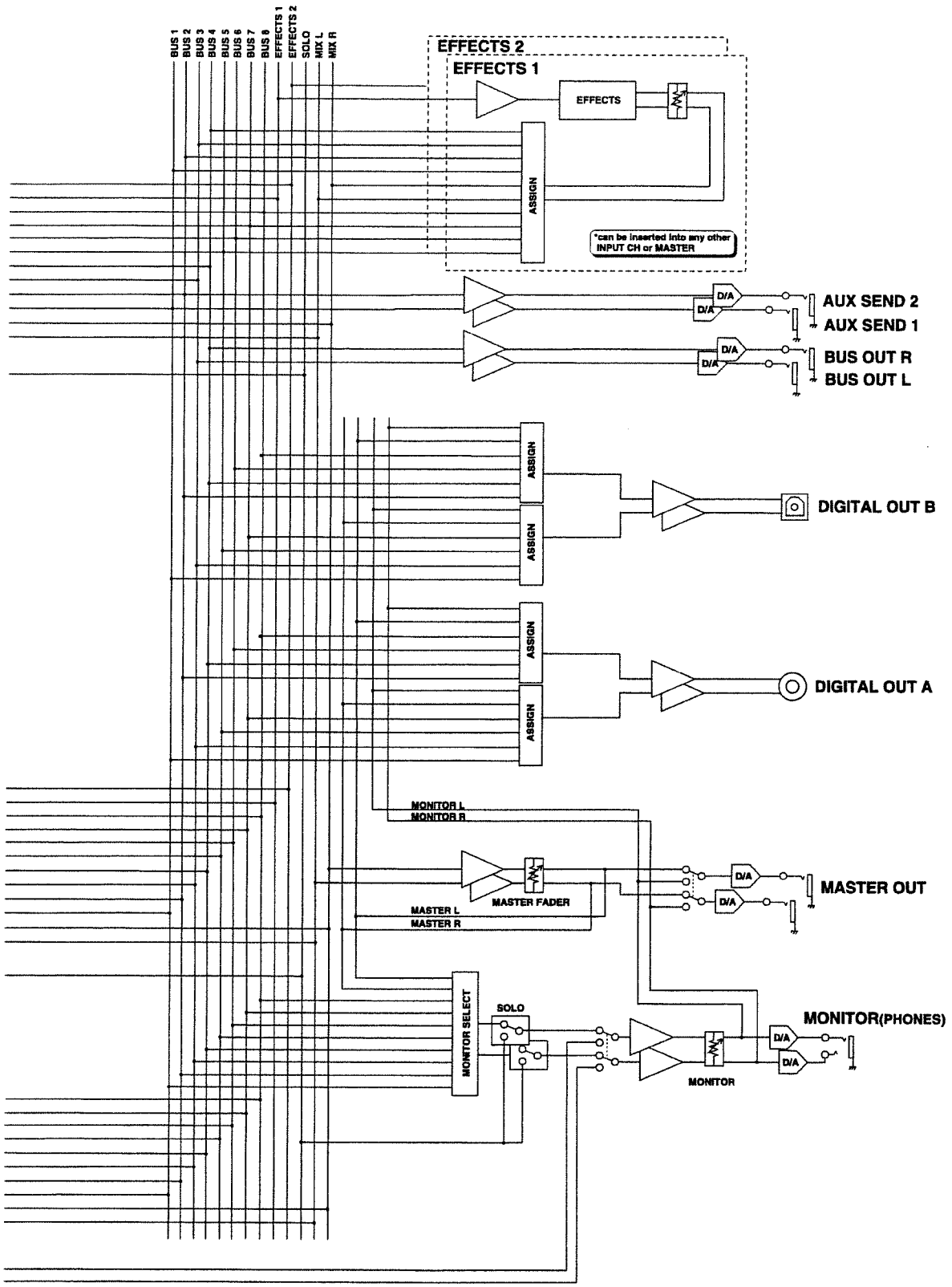
Function...		Transmitted	Recognized	Remarks
Basic Channel	Default	1–16	1–16	
	Changed	1–16	**********	
Mode	Default	Mode 3	Mode 3	
	Messages	x	x	
	Altered	**********	x	
Note Number :	True Voice	0–127 * 1	x	
		**********	x	
Velocity	Note ON	x	x	
	Note OFF	x	x	
After Touch	Key's	x	x	
	Ch's	x	x	
Pitch Bend		x	x	
Control Change	1–31	O * 4	O	
	33–95	O * 4	O	
	6, 38	O * 5	O	Data Entry MSB, LSB
	96, 97	x	O	Data Inc, Dec
	98, 99	O * 5	O	NRPN LSB, MSB
	102–119	O * 4	O	
Prog Change	: True #	O * 1	O	
		0–127	0–31	Scene 1-1 – 8-4
System Exclusive		O * 3, * 6	O	
System Common	Quarter Frame	x	O * 8	
	: Song Pos	O * 2	O * 7	
	: Song Sel	x	x	
	: Tune	x	x	
System Real Time	: Clock	x	O * 7	
	: Command	O * 2	O * 7	
Aux Message	: All sound off	x	x	
	: Reset all controllers	x	x	
	: Local ON/OFF	x	x	
	: All Notes OFF	x	x	
	: Active Sense	x	x	
	: Reset	x	x	
Notes		* 1 MIDI Transport = USER 1-3 only * 2 MIDI Transport = SEQUENCER only * 3 MIDI Transport = RECORDER only * 4 MIDI Control Type = C.C. only * 5 MIDI Control Type = NRPN only * 6 When MIDI Control Type = SYS-EX, mixer settings * 7 MIDI Timing Monitor = MEASURE only * 8 MIDI Timing Monitor = TIMECODE only		

Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO O : Yes
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO X : No

Block Diagram

<VM-3100Pro block diagram>




BUS 1
BUS 2
BUS 3
BUS 4
BUS 5
BUS 6
BUS 7
BUS 8
EFFECTS 1
EFFECTS 2
SOLO
MIX L
MIX R
EFFECTS 2
EFFECTS 1
EFFECTS
ASSIGN
*can be inserted into any other INPUT CH or MASTER
D/A
AUX SEND 2
AUX SEND 1
BUS OUT R
BUS OUT L
DIGITAL OUT B
DIGITAL OUT A
MONITOR L
MONITOR R
MASTER FADER
MASTER L
MASTER R
MASTER OUT
MONITOR SELECT
SOLO
MONITOR
MONITOR(PHONES)

Specifications

VM-3100 V Mixing Station

■ Channels

12
20 (VM-3100Pro)

■ Internal Memory

EZ Routing Libraries:	16 (preset) + 16 (user)	
Compressor Libraries:	16 (preset) + 16 (user)	
Equalizer Librarirs:	16 (preset) + 16 (user)	
Effects Patches:	50 (preset)	
Effects Patches:	100 (preset) + 100 (user)	* VM-3100Pro

■ Channel Equalizers

3-band parametric (HI, MID, LOW) x 12 channel
3-band parametric (HI, MID, LOW) x 20 channel * VM-3100Pro

■ Signal Processing

AD Conversion:	24 bits, 64 times oversampling (Input 1 – 8)
	20 bits, 64 times oversampling (Input 9 – 12)
DA Conversion:	24 bits, 128 times oversampling
Internal processing:	24 bits

■ Sample Rate

44.1 kHz

■ frequency Response

20 Hz – 20 kHz

■ Total Harmonic Distortion (INPUT = +4 dBu, 1 kHz at nominal output level)

0.002 % or less

■ Nominal Input Level (Variable)

Input 1 – 2 (XLR type):	-50 – +4 dBu (Balanced: maximum +19 dBu, Unbalanced: maximum +19 dBu)
Input 1 – 2 (1/4" phone type):	-50 – +4 dBu (Balanced: maximum +19 dBu, Unbalanced: maximum +19 dBu)
Input 3 – 8 (1/4" phone type):	-50 – +4 dBu (Unbalanced: maximum +19 dBu)
Input 9– 12 (RCA phono type):	0 dBu (Unbalanced: maximum +12 dBu)
Guitar (Hi-Z):	-50 – +4 dBu (Unbalanced: maximum +19 dBu)

■ Input Impedance

Input 1 – 2 (XLR type):	20 k ohms
Input 1 – 8 (1/4" phone type):	20 k ohms
Input 9 – 12 (RCA phono type):	11 k ohms
Guitar (Hi-Z):	1 M ohms

■ Nominal Output Level

Master Out:	0 dBu
AUX Send:	0 dBu
Bus Out:	0 dBu

■ Output Impedance

Master Out:	1 k ohms
AUX Send:	1 k ohms
Bus Out:	1 k ohms
Monitor (Headphones):	150 ohms

■ Recommended Load Impedance

Master Out:	10 k ohms or greater
AUX Send:	10 k ohms or greater
Bus Out:	10 k ohms or greater
Monitor (Headphones):	8 – 50 ohms

■ Residual Noise Level (Input Terminated with 1 k ohm, INPUT = LINE, IHF-A, typ.)

Master Out:	-84 dBu or less
AUX Send:	-84 dBu or less
Bus Out:	-84 dBu or less

■ Display

60.0 x 25.0 mm (with backlit): 136 x 32 dots, Graphic LCD
7 segments x 25 characters LCD

■ Jacks and Connectors

Input Jacks 1 – 2 (XLR type, Balanced, with Phantom Power)
Input Jacks 1 – 2 (1/4" phone type, TRS Balanced)
Input Jacks 3 – 8 (1/4" phone type)
Input Jacks 9 – 12 (RCA phono type)
Guitar (Hi-Z) Jack (1/4" phone type)
Master Out Jacks L, R (1/4" phone type)
AUX Send Jacks 1, 2 (1/4" phone type)
Bus Out Jacks L, R (RCA phono type)
Monitor (Headphones) Jack (Stereo 1/4" phone type)
Foot Switch Jack (1/4" phone type)
MIDI Connectors (IN, OUT/through)
Digital In Connectors (Coaxial, Optical)
Digital Out Connectors (Coaxial, Optical)
RMDB II Connector (DB-25 type) * VM-3100Pro

■ Power Supply

AC 117 V, AC 230 V or AC 240 V

■ Power Consumption

12 W (VM-3100)
15 W (VM-3100Pro)

■ Dimension

300 (W) x 343 (D) x 95 (H) mm
11-13/16 (W) x 13-9/16 (D) x 3-13/16 (H) inches

■ Weight

3.6 kg (VM-3100Pro)
7 lbs 15 oz

■ Accessories

AC Cord
Owner's Manual

■ Options

Interface Box for adat/TASCAM: DIF-AT

* *(0 dBu = 0.775 Vrms)*

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

* ***A separate publication titled "MIDI Implementation" is also available. It provides complete details concerning the way MIDI has been implemented on this unit. If you should require this publication (such as when you intend to carry out byte-level programming), please contact the nearest Roland Service Center or authorized Roland distributor.***

Index

M

N

O

P

R

S

T

U

V

X

For EU Countries

CE This product complies with the requirements of European Directives EMC 89/336/EEC and LVD 73/23/EEC.

For the USA

FEDERAL COMMUNICATIONS COMMISSION
RADIO FREQUENCY INTERFERENCE STATEMENT

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

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

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

For Canada

NOTICE

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

AVIS

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Information

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

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Al Fanny Trading Office
P.O. Box 2904,
El Horrieh Heliopolos, Cairo,
EGYPT
TEL: (02) 4185531

REUNION
Maison FO - YAM Marcel
25 Rue Jules MermanZL
Chaudron - BP79 97491
Ste Clotilde REUNION
TEL: 28 29 16

SOUTH AFRICA
That Other Music Shop (PTY) Ltd.
11 Melle Street (Cnr Melle and Juta Street)
Braamfontein 2001
Republic of SOUTH AFRICA
TEL: (011) 403 4105

Paul Bothner (PTY) Ltd.
17 Werdmuller Centre Claremont 7700
Republic of SOUTH AFRICA

P.O. Box 23032
Claremont, Cape Town
SOUTH AFRICA, 7735
TEL: (021) 64 4030

ASIA

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

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

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PT Galestra Inti
Kompleks Perkantoran
Duta Merlin Blok E No.6—7
Jl. Gajah Mada No.3—5,
Jakarta 10130,
INDONESIA
TEL: (021) 6335416

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Cosmos Corporation Service Station
261 2nd Floor Nak-Won Arcade
Jong-Ro ku, Seoul, KOREA
TEL: (02) 742 8844

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Bentley Music SDN BHD
140 & 142, Jalan Bukit Bintang
55100 Kuala Lumpur,MALAYSIA
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339 Gil J. Puyat Avenue
Makati, Metro Manila 1200,
PHILIPPINES
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150 Sims Drive,
SINGAPORE 387381
TEL: 748-1669

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

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TEL: (02) 2561 3339

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330 Verng NakornKasem, Soi 2,
Bangkok 10100, THAILAND
TEL: (02) 2248821

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138 Tran Quang Khai St.,
District 1
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VIETNAM
TEL: (8) 844-4068

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

NEW ZEALAND
Roland Corporation (NZ) Ltd.
97 Mt. Eden Road, Mt. Eden,
Auckland 3, NEW ZEALAND
TEL: (09) 3098 715

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Florida 656 2nd Floor
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ARGENTINA, CP1005
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Providencia Santiago, CHILE
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OMNI MUSIC
75 Avenida Notre y Alameda Juan Pablo 2 No. 4010
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Av. Toluca No. 323 Col. Olivar de los Padres 01780 Mexico D.F.
MEXICO
TEL: (525) 668 04 80

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Guadalajara, Jalisco Mexico
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Av. Francisco de Miranda,
Centro Parque de Cristal, Nivel C2 Local 20 Caracas
VENEZUELA
TEL: (02) 285 9218

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

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Roland Benelux N. V.
Houtstraat 3 B-2260 Oevel (Westerlo) BELGIUM
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Roland Scandinavia A/S
Langebrogade 6 Post Box 1937
DK-1023 Copenhagen K.
DENMARK
TEL: 32 95 3111

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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

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Lauttasaarentie 54 B
Fin-00201 Helsinki, FINLAND
TEL: (9) 682 4020

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

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V. Dimitriadis & Co. Ltd.
20, Alexandras St. & Bouboulinas
54 St. 106 82 Athens, GREECE
TEL: (01) 8227 775

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

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

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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
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PL-03664 Warszawa POLAND
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PORTUGAL
Tecnologias Musica e Audio, Roland Portugal, S.A.
RUA SANTA CATARINA
131 - 4000 Porto -PORTUGAL
TEL: (02) 208 44 56

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Piata Libertatii 1.
RO-4200 Cheorgheni
TEL: (066) 164-609

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Slami Music Company
Sadojava-Triumfalnaja st., 16
103006 Moscow, RUSSIA
TEL: 095 209 2193

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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, CH-4410 Liestal, SWITZERLAND
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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

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Moon Stores
Bab Al Bahrain Road,
P.O. Box 20077
State of BAHRAIN
TEL: 211 005

CYPRUS
Radex Sound Equipment Ltd.
17 Diagorou St., P.O. Box 2046,
Nicosia CYPRUS
TEL: (02) 453 426

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

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AMMAN Trading Agency
Prince Mohammed St. P.O. Box 825 Amman 11118 JORDAN
TEL: (06) 4641200

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P.O. Box 126 Safat 13002
KUWAIT
TEL: 5719499

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A. Chahine & Fils
P.O. Box 16-5857 Gergi Zeidan St. Chahine Building, Achrafieh
Beirut, LEBANON
TEL: (01) 335799

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OHI Electronics & Trading Co. LLC
P.O. Box 889 Muscat
Sultanate of OMAN
TEL: 959085

QATAR
Badie Studio & Stores
P.O. Box 62,
DOHA QATAR
TEL: 423554

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aDawliah Universal Electronics APL
P.O. Box 2154 ALKHOBAR 31952,
SAUDI ARABIA
TEL: (03) 898 2081

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Technical Light & Sound Center
Khaled Ibn Al Walid St.
P.O. Box 13520
Damascus - SYRIA
TEL: (011) 2235 384

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Barkat Muzik aletleri ithalat ve ihracat limited ireketi
Siraselvier Cad. Guney Ishani No. 86/6 Taksim, Istanbul TURKEY
TEL: (0212) 2499324

U.A.E.
Zak Electronics & Musical Instruments Co.
Zabeel Road, Al Sherooq Bldg., No. 14, Grand Floor DUBAI
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5480 Parkwood Way Richmond B. C., V6V 2M4 CANADA
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TEL: (0416) 213 9707

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TEL: (0323) 685 5141

As of February 17, 1999

VM-3100 Preset Patch List

Reverb + Gate (21 presets)

No.	Patch Name	Comment
P00	RV:LrgHall	Large concert hall reverberation.
P01	RV:SmlHall	Small hall reverberation.
P02	RV:Strings	Reverberation optimized for delicate highs of strings.
P03	RV:Pf.Hall	Rich and warm reverberation optimized for pianos.
P04	RV:LrgClub	Simulated reverberation of large dance floor.
P05	RV:ClubFlr	Simulated reverberation of small dance floor.
P06	RV:LrgRoom	Simulated acoustics of wide rooms with lots of reverberation.
P07	RV:MidRoom	Warm and naturally spacious room reverb.
P08	RV:Orch.Rm	Reverberation of large-capacity rooms such as big banquet halls.
P09	RV:VocalRm	Room reverb suitable for vocals and chorus.
P10	RV:Cool Pt	Distinctive bright plate reverb.
P11	RV:ShortPt	Shorter plate reverb.
P12	RV:VocalPt	Crystal-clear reverb optimized for vocals.
P13	RV:SoftAmb	Simulated reverberation of a room with minimal wall reflections.
P14	RV:RoomAmb	Natural reverberation of rooms with good acoustics, suitable for drums and guitars.
P15	RV:Cathdrl	Acoustics of a very large, high-ceilinged church.
P16	RV:LngCave	Simulated reverberation of deep caves.
P17	RV:Garage	Natural reverb that enhances unique drum sounds.
P18	RV:RockK	Reverb with many low-frequency components, suitable for rock kicks.
P19	RV:RockSn	Rich and thick sounding reverb suitable for rock snares.
P20	RV:Gated	Distinctive gate reverb.

EZ Delay (6 presets)

No.	Patch Name	Comment
P21	DL:Short	An ambience effect that adds depth to the sound by doubling.
P22	DL:Medium	Natural echo optimized for vocals.
P23	DL:Long	Long delay suited for brass and analog synth solos.
P24	DL:Analog	Analog sound with gradually diminishing feedbacking highs.
P25	DL:Hi-Pass	Delay applied only to the high end.
P26	DL:KickDub	Delay applied only to the low end.

Vocal Multi (9 presets)

No.	Patch Name	Comment
P27	VO:VocalFx	Basic setup for recording/mixdown of vocals.
P28	VO:JazzVo	A natural sounding jazz club-like ambience for warm reverb well-suited for vocals.
P29	VO:RockVo	Sound featuring limiter/enhancer processing as well as a unison effect.
P30	VO:Naratin	An effect with heavy compression, used for narration.
P31	VO:BigChrs	A spacious-sounding stereo effect similar to increasing the number of vocalists.
P32	VO:AMRadio	Sound featuring hard compression and narrower frequency range.
P33	GT:DiClean	Superclean sound like line recording directly into the console.
P34	GT:ElecAc.	Optimized for electroacoustic guitars.
P35	BS:DIedBs	Slight limiting and equalization optimized, ideal for line recording applications.

VM-3100 Preset Patch List

Guitar Multi (9 presets)

No.	Patch Name	Comment
P36	GT:RockLed	Straight distortion sound with delay.
P37	GT:LA Lead	Lead guitar sound with tasty compression and chorus applied.
P38	GT:MetalLd	Metal sound with dynamic, ultrahigh gain distortion.
P39	GT:RhythmC	Clean sound with compression and chorus applied.
P40	GT:DlyRiff	Delay sounds at dotted eighth note intervals when a 120 BPM riff is played.
P41	GT:BluesDv	Crunchy overdrive sound suited to blues and R&R.
P42	GT:LivPool	Crunchy sound often heard on '60s British rock.
P43	GT:Country	Clean sound featuring distinctive compression and delay.
P44	BS:AutoWah	Synth bass like sound added with auto wah essential for '70s funk.

Keyboard Multi (5 presets)

No.	Patch Name	Comment
P45	KB:SpacePh	Phaser sound with spatial expanses, for synthesizer pads.
P46	KB:RingNz	Ring modulated Noisy sound with high frequency oscillator, for guitar, keyboards.
P47	KB:DeepRng	Ring modulated Noisy sound with low frequency oscillator, for drums loops, etc.
P48	KB:Tremolo	Tremolo sounds.
P49	KB:EchoBk	Delay and Chorus sounds.

Reverb 2 (5 presets)

No.	Patch Name	Comment
P50	R2:LrgHall	Large concert hall reverberation.
P51	R2:SmlHall	Small hall reverberation.
P52	R2:Cool Pt	Distinctive bright plate reverb.
P53	R2:ShortPt	Shorter plate reverb.
P54	R2:Cathdrl	Acoustics of a very large, high-ceilinged church.

Stereo Delay Chorus (2 presets)

No.	Patch Name	Comment
P55	CH:Lt Cho	Natural stereo chorus with shallow depth for spacious, crystal-clear sound.
P56	CH:DeepCho	Intense stereo chorus that adds depth and spaciousness to the sound.

Stereo Pitch Shifter (2 presets)

No.	Patch Name	Comment
P57	PT:ST Dtun	Stereo detune: heavy sound
P58	PT:OctDown	Pitch shift: down one octave

Chorus RSS (2 presets)

No.	Patch Name	Comment
P59	CR:3D Cho1	Deep chorus sound with spatial expanses produced by RSS.
P60	CR:3D Cho2	Light chorus sound with spatial expanses produced by RSS.

Delay RSS (2 presets)

No.	Patch Name	Comment
P61	DR:RSS Alt	RSS delay with alternate panning.
P62	DR:RSSrund	Surround effect by RSS for monaural sources.

Panner RSS(2 presets)

No.	Patch Name	Comment
P63	PN:Around	Sound rotates horizontally around the listener at slow speed.
P64	PN:SpedPan	Sound goes and returns between L/R at high speed.

Mic Simulator (4 presets)

No.	Patch Name	Comment
P65	MS:57-58	Converts a general-purpose D. mic to a vocal D. mic. Rich mid/low range.
P66	MS:57-421	Converts a general-purpose D. mic to a large D. mic. For drums and guitar amp.
P67	MS:57-Line	Cancels the characteristics of D.mic, giving the sound a flat frequency response.
P68	MS:DR20-87	Converts a Roland DR-20 to a large C. mic. For vocals and acoustic inst.

Guitar Amp. Sumulator (5 presets)

No.	Patch Name	Comment
P69	GA:JC-120	Roland JC-120 amp. Sounds more authentic when used with chorus for mixdown.
P70	GA:ClnTwin	U.S. tube combo amp circa "black panel."
P71	GA:MatchLd	Hot-rodded British combo amp.
P72	GA:JMP-Stk	Late '60s British stacks.
P73	GA:5150Ld	Big tube amp standard for American heavy metal.

Stereo Dynamics Proccessor (6 presets)

No.	Patch Name	Comment
P74	DN:DanceEQ	Equalization for dancing
P75	DN:Loudnes	Loudness
P76	DN:Hard+GT	Hard comp/gate for dancing
P77	DN:TotalCp	Total Compression for broadcast mixes and similar applications.
P78	DN:Limiter	Stereo Limiter
P79	DN:Enhance	Stereo Enhancer

@2Dynamics x 2 (1 presets)

No.	Patch Name	Comment
P80	D2:DynaX2	Dynamic processor that allows independent left and right settings.

Parametric Equalizer (5 presets)

No.	Patch Name	Comment
P81	PE:Overhed	For drum kit: overhead mic; collects entire drum kit.
P82	PE:Bass	For electric bass: tight, wide-range bass sound.
P83	PE:Sax	For alto and soprano sax: high-range gain control mellows sound.
P84	PE:ElecGtr	Setting keeps lead guitar from being buried in overall mix
P85	PE:NylonGt	Transparent fret sound; gain control on fret sound's high range

VM-3100 Preset Patch List

Graphic Equalizer (3 presets)

No.	Patch Name	Comment
P86	GE:TotalE1	Lows and highs boosted; "just right" sound
P87	GE:TotalE2	Narrowed range of low and high cut, consistent overall sound
P88	GE:SpaceEQ	Special effect: stereo output from mono input.

Stereo Chorus (1 presets)

No.	Patch Name	Comment
P89	CH:SDD/3+4	Roland SDD-320 (button 3+4)

Stereo Flanger (2 presets)

No.	Patch Name	Comment
P90	FL:HardJet	Typically brash short flanger.
P91	FL:Hi-Band	Two BOSS HF-2s connected in stereo.

Stereo Phase (2 presets)

No.	Patch Name	Comment
P92	PH:4stage	Vintage four-stage type phaser.
P93	PH:See-Saw	See-Saw phasing between L/R (eight-stage type).

Hum Canceller (2 presets)

No.	Patch Name	Comment
P94	HC:Quiet60	Cancels 60Hz hum noise.
P95	HC:Quiet50	Cancels 50Hz hum noise.

Center Canceller (1 presets)

No.	Patch Name	Comment
P96	VC:VoCancl	Vocal canceller (removes sounds in middle of stereo field).

Isolator & Filter (1 presets)

No.	Patch Name	Comment
P97	IS:HiCancl	Isolator high-range cancel.
P98	IS:Low-Phs	Stereo anti-phase effect for low range.

Speaker Modeling (1 presets)

No.	Patch Name	Comment
P99	SPM:SpFlat	Connecting Roland's DS-90 speakers provides optimum frequency characteristics.

NOTE

Speaker Modeling can be used in FX2 only.

VM-3100 Library List

Compressor Library List

To apply the channel compressor to the sounds output from the MASTER OUT jack, use the channel compressors as a "stereo pair" and select the channel numbers for the "INS MASTER" setting (User's Manual; p. 53).

No.	Name	Description
01	KickDrum1	Applied to the bass drum, this gives a tight, fat sound.
02	SnareDrum1	Used with the snare drum, this restrains peaks for a softer snare sound.
03	Overheads	This compression provides greater presence in situations such as when distance mikes are used to record the entire drum set.
04	DI Bass	This lends a natural softness to sounds like the solid bass sounds that are input with a direct box.
05	Mic Gt Cab	This compression produces a fat, rich midrange in the recorded sounds from a mic'ed guitar amp.
06	Breakbeats	This can be used to add a punchy lo-fi feel to sampled data and other similar sounds.
07	Rap Vocals	Used for rap and similar vocals, this reduces differences in vocal volume levels and provides greater presence.
08	Narration	Used in narration and similar applications, this reduces differences in vocal volume levels and provides greater presence.
09	StereoComp	This compresses the overall differences in volume levels in sounds mixed in stereo.
10	StereoLmtr	This compresses local peaking occurring in stereo mixed sounds.
11	RockVocals	This reduces the differences in volume levels produced by strong shouted vocals, making it easier to listen to these vocals.
12	JazzVocals	This reduces the differences in volume levels occurring in general vocals, making the vocals easier to hear.
13	AcousticGt	Used with acoustic guitar sounds, this reduces the differences in volume levels, making the sound easier to hear.
14	DI Guitar	This lends a natural softness to sounds such as the solid guitar sounds input with a direct box.
15	KeyboardLd	Added to keyboard solos, this compression reduces the differences in volume levels, making the sound easier to hear.
16	Kb Rhythm	Added to keyboard backing and similar sounds, this compression reduces the differences in volume levels, making the sound more pleasing to the ear.

Equalizer Library List

No.	Name	Description
01	Rock BD	For bass drum. A sound suitable for rock with mid-lows emphasized.
02	Rock SD	For snare drum. Drops the mid-lows and emphasizes the attack and snares.
03	Rimshot	For rim shot. Emphasizes the feeling of attack unique to a rim shot.
04	Toms	For toms. Adjust LowF and LowMidF.
05	Hi Hat	For the crisper hi-hat. Adjust bell sound with HiMidG.
06	Cymbals	For cymbals. Emphasizes the difference in tone between cymbals and their clarity.
07	Overhead	For drum kit. Use when miking the sound of the entire kit.
08	RockBass	For electric bass. For rock.
09	ElecGtr	Settings that keep the lead guitar from being buried in the mix.
10	NylonGtr	Emphasize the tone of nylon strings. Adjust fret sound with HiG.
11	BluesGtr	Adds a delicate nuance suitable when playing blues on an acoustic guitar.
12	SlideGtr	Adds a rich feel to acoustic slide guitar. Adjust HiF.
13	LineGtr	For piezo pickups. Adjust brightness with HiG.
14	Male	Improves the tone quality of a male vocal. Adjust HiG.
15	Female	Improves the tone quality of a female vocal. Adjust LoMidG.
16	Narrator	Standard equalizer for male narration. Brings out the character of the voice.

VM-3100 EZ Routing Set List

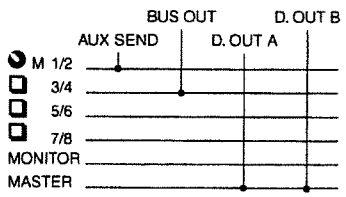
Preset Memo Screen

The EZ Routing Set memo screen displays the following symbols when the VM-3100 is shipped from the factory. Descriptions for each symbol are provided.

Upper Row	Output Jacks
Au:	AUX SEND Jack
Bs:	BUS OUT Jack
Da:	DIGITAL OUT Connector A
Db:	DIGITAL OUT Connector B
Lower Row	Bus Assigned to Each Output Jack
Sd:	"SND-M" (Send Monaural: sends two monaural signals)
St:	"SND-S" (Send Stereo: sends one stereo signal)
Mx:	"MASTER" (Same signal as that output from the MASTER OUT jack)
Mo:	"MONITOR" (Same signal as that output from the MONITOR jack)
12:	Output of the internal "1/2" bus
34:	Output of the internal "3/4" bus
56:	Output of the internal "5/6" bus
78:	Output of the internal "7/8" bus

01 BASIC MIX

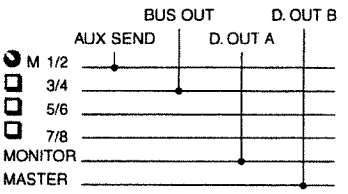
This is the mix using the most basic settings (shown in the connection diagram on p. 16 of the User's Manual). The monitor speakers are connected to the MASTER OUT jack. The sounds from the DIGITAL OUT A and B connectors are the same as those output from the MASTER OUT jack. Digital recordings can be made using a DAT, MD, or similar device.



M : Send MONO
S : Send STEREO
: Bus

02 D MONITOR

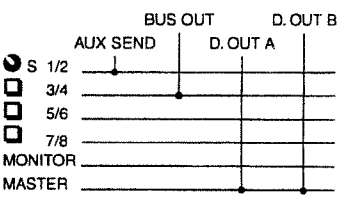
In addition to the basics of EZ Routing Set 01, a monitor speaker that is equipped with a digital input connector (such as the optional DS-90) can be connected to the DIGITAL OUT A connector.



M : Send MONO
S : Send STEREO
: Bus

03 STEREO SND

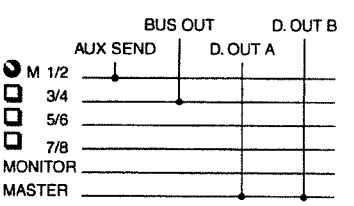
With this setting, you can use the AUX SEND jacks 1 and 2 to connect an external stereo effects device. This allows placement of effects exactly as they are processed by the external effects device.



M : Send MONO
S : Send STEREO
: Bus

04 SUB MIXER

This features the most basic PA mixer or sub mixer settings (shown in the connection diagram on p. 35 of the User's Manual). The MASTER OUT jacks are connected the input section of the PA amp or main mixer.

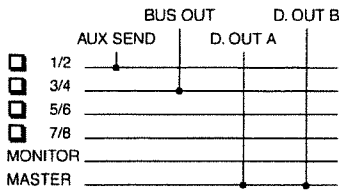


M : Send MONO
S : Send STEREO
: Bus

05 4Tr AnaMTR

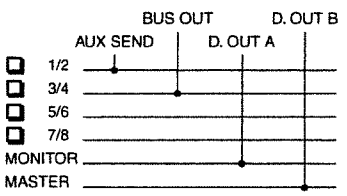
This selects the settings used for recording to a four-track

recorder (shown in the connection diagram on p. 28 of the User's Manual). The AUX SEND and BUS OUT jacks are used as "busses," with each output connected to a track input on the multitrack recorder.



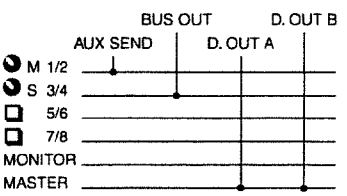
06 4Tr D-MONI

Along with the basic Routing Set 05, a monitor speaker that is equipped with a digital input connector (such as the optional DS-90) can be connected to the DIGITAL OUT A connector.



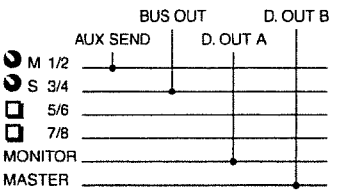
07 MIX DOWN

This contains the settings used when the VM-3100 is connected to a multitrack recorder for mixdown. All AUX SEND and BUS OUT jacks are used for sending signals to external effects. Signals can be sent both two monaural signals and one stereo signal.



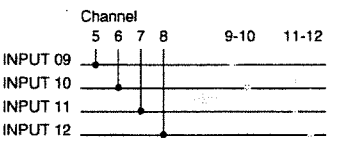
08 M.D.D-MONI

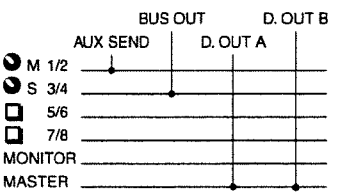
Along with the basic settings of Routing Set 07, a monitor speaker that is equipped with a digital input connector (such as the optional DS-90) can be connected to the DIGITAL OUT A connector.



09 SWAP MIX

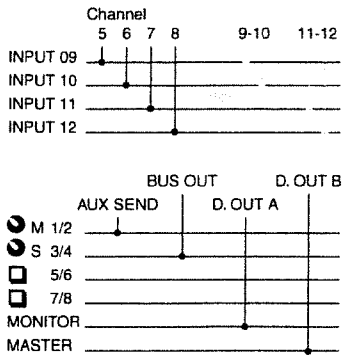
This sets up the VM-3100 so that, with the outputs of a four-track recorder connected to Inputs 9-10 and 11-12, Channels 5-8 can be used to balance the mix. When recording to the multitrack recorder, you can use Channels 9-10 and 11-12 to monitor two channels at a time, and without changing any connections, adjust the volume balance independently on Channels 5-8.





10 SWAP D-MON

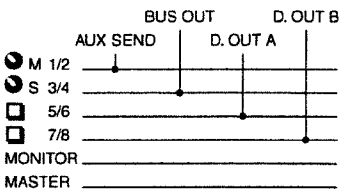
In addition to the basic settings in Routing Set 09, a monitor speaker that is equipped with a digital input connector (such as the optional DS-90) can be connected to the DIGITAL OUT A connector.



M : Send MONO
S : Send STEREO
: Bus

11 4TrDigiMTR

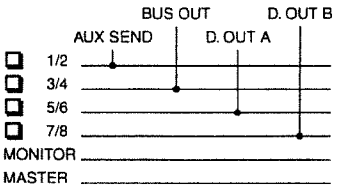
This contains the settings used for recording to a digital four-track recorder. The DIGITAL OUT A and B connectors are used as "busses" connected to the inputs of the digital multitrack recorder.



M : Send MONO
S : Send STEREO
: Bus

12 8Tr MTR

This contains the settings used for recording to a digital eight-track recorder. The AUX SEND and BUS OUT jacks and the DIGITAL OUT A and B connectors are all used as "busses" that are connected to the inputs of the digital multitrack recorder.



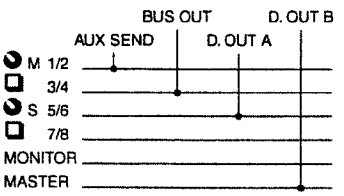
M : Send MONO
S : Send STEREO
: Bus

13 EXT DigiFX

This selects the settings needed to keep signals in digital form for effects processing when the VM-3100 is connected to an effects device featuring digital input capabilities. The DIGITAL OUT A connector is connected to the digital input of the external effects device, and the output of the effects device is connected to either the DIGITAL IN A or B connector.

NOTE

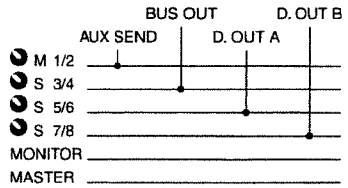
To input digital signals from an external effects device, set the Master Clock to "DIN-A" (DIGITAL IN A) or "DIN-B" (DIGITAL IN B) (User's Manual; p.52).



M : Send MONO
S : Send STEREO
: Bus

14 ALL SENDs

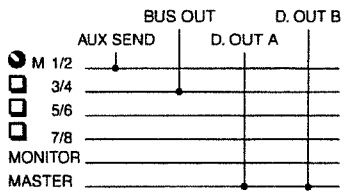
In this configuration, the AUX SEND and BUS OUT jacks and the DIGITAL OUT A and B connectors are all used for sending signals either to external effects or to performers' monitors (five signals, two monaural and three stereo, can be sent).



M : Send MONO
S : Send STEREO
□ : Bus

15 PA MIXER

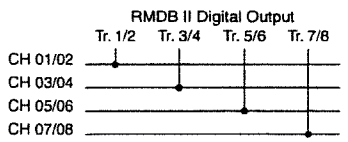
This contains the settings for using the VM-3100 as a PA mixer equipped with sends for the performers' monitors (shown in the connection diagram on p. 38 of the User's Manual). The AUX SEND jacks send two monaural signals. MASTER OUT jacks are connected the input section of the PA amp or main mixer.



M : Send MONO
S : Send STEREO
□ : Bus

16 RMDB DIRCT

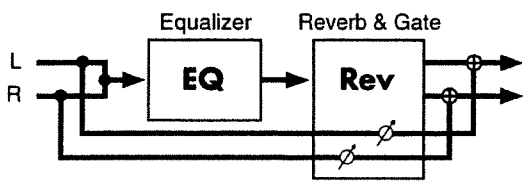
This selects the settings needed to send the output of Channels 1-8 directly through the eight-channel digital output of the RMDB II connector (VM-3100Pro only).



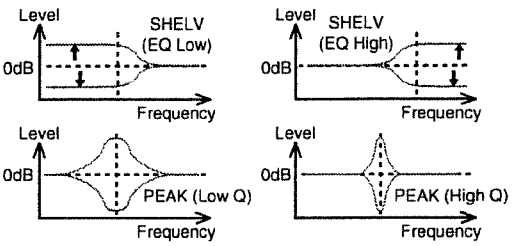
VM-3100 List of Algoriyhms

01 REVERB & GATE

This digital reverb creates a variety of room and hall reverberation sounds. A 3-band equalizer is connected in series before the reverb. Furthermore, the gate function provides additional special effects. This is normally used with the send/return method.



EQ (3-Band Equalizer).



Low Type [LType]SHELV, PEAK
This switches the Low EQ curve characteristics (peaking-type/shelving-type).

Low Freq [LFreq]20 - 2000 Hz
This sets the reference for the frequency range to be boost or cut. With the peaking-type equalizer, this means the center frequency; with the shelving-type equalizer, this becomes the cutoff frequency.

Low Gain [LGain]-12 - +12 dB
This sets the gain (boost or cut) of the equalizer.

Low Q [LQ]0.3 - 10.0
This sets the bandwidth, or "Q" of the sound that is boost or cut when the low-frequency equalizer is set to the peaking type. This is disabled when the shelving-type equalizer is in effect.

Mid Freq [MFreq]200 - 8000 Hz
Mid Gain [MGain]-12 - +12 dB
Mid Q [MQ]0.3 - 10.0
Just as with the low-frequency equalizer, these set the gain, center frequency, and Q for the midrange equalizer. This equalizer is peaking-type only.

High Type [HType]SHELV, PEAK
High Freq [HFreq]1.4 - 20.0 kHz
High Gain [HGain]-12 - +12 dB
High Q [HQ]0.3 - 10.0
Just as with the low-frequency equalizer, this sets the gain, center frequency, and Q for the high-frequency equalizer.

Out Level [OutLv]-60 - +12 dB
This sets the output volume.

REVERB

This is a high-quality digital reverb. It is equipped with a gate function to cut the reverb sound as it is produced, providing you with gated reverb, reverse reverb, ducking reverb, and other particular effects.

Type(Size) [Type] 5 - 40 m
This sets the size of the room. For example, the setting "10m" gives you reverb as it would sound in a space with 10-meter walls.

Rev Time [Time] (Reverb Time)0.1 - 32.0 sec
This sets the length (in seconds) of the reverb sound.

FX Level [EffLv]0 - 100
This sets the volume of the reverb sound. When using the insert method, first get a rough balance between the reverb and the dry sounds, then lower the level a little.

Dry Level [DryLv]0 - 100
This sets the volume of the source sound. Set this to 0 when using the send/return method. Increase the value when using the insert method to mix the source sound into the output.

Pre Delay [PreDL]0 - 200 msec
This sets the delay between the time source sound is first played and the point at which the reverb sound is played. This indicates distance from the source of the sound.

Diffusion [Diff.]0 - 100
Increasing this value intensifies the sense of spatial width. This is effective when playing back sounds in stereo.

Density [Dens.]0 - 100
Increasing this value makes the reverb sound denser. Reduce the density when using hall and garage reverbs.

Early Ref. [E.Ref] (Early Reflection)0 - 100
Raising the value for this setting increases the volume of the initial reflections. Early reflections are the direct reflections of the walls. You can hear these sounds as they spread out in the initial reverb sound.

LoDampFreq [LDFrq] (Low Damp Frequency) 50 - 4000 Hz
This sets the upper frequency limiting the range to be dampened. The Low Damp effect rapidly dampens the low frequency range of the reverb sound, resulting in a cleaner reverb effect.

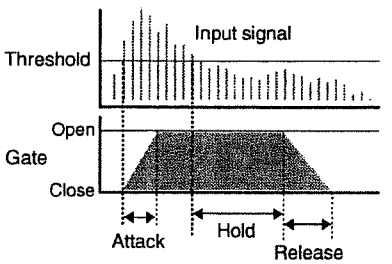
LoDampGain [LD-G] (Low Damp Gain) -36 - 0dB
This sets the amount of the Low Damp effect.

HiDampFreq [HDFrq] (High Damp Frequency) 1.0 - 20.0 kHz
In the natural world, the high frequencies in reverberation die out very quickly. High Damp, by attenuating the higher frequencies first, makes the reverb sound more natural. This sets the lower frequency limiting the range to be dampened.

HiDampGain [HD-G] (High Damp Gain) -36 - 0dB
This sets the amount of the High Damp effect. By conbining low damp and high damp, you can indicate the qualities of the room such as surface material (or the sound absorption properties thereof).

HiCutFreq [HiCut] (High Cut Frequency) 0.2 - 20.0 kHz
This gently cuts the upper frequencies of the reverb sound, making the reverberation more stable. This alteration does not change with time.

GATE



Mode [Mode] (Gate Mode)GATE, DUCK
GATE (Gate Reverb)

When the source volume falls below a certain level, the gate closes, resulting in an effect similar to a gated reverb cutting off the reverb sound.

DUCK (DuckingReverb)

When the source volume gets high enough, the gate closes, which gives a ducking-type reverb effect. Stop the reverb sound only the input loud sound so that prevent the play sound become unclear.

Threshold [Thre] (Threshold Level)0 - 100
This sets volume level of the source sound needed to close the gate and cut the reverb sound.

Attack [Atk] (Attack Time)0 - 100
This sets the time it takes for the gate to fully open after being triggered.

Hold [Hold] (Hold Time)0 - 100
This sets the time it takes for cutting of the reverb sound to start from the instant the source sound reaches the threshold level.

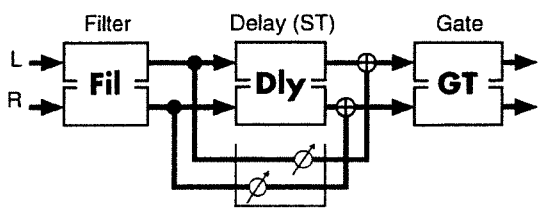
Release [Rele] (Release Time)0 - 100
This sets the elapsed time between moment the gate begins to close to when it is fully close after the hold time has elapsed.

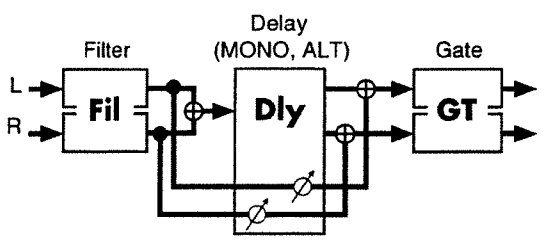
NOTE

When using the gate function to get special reverb effects, make setting the gate easier by using longer reverb times. In such instances, instead of using Low Damp or High Damp to change the tone, do this with the High Cut frequency settings or through equalization at an earlier stage. To get sharp gate reverb, make the attack and release times extremely short, and set expression time to match the rhythm with the hold time setting. To get reverse reverb, sufficiently lengthen the attack time, and keep the release time short.

02 EZ DELAY

This is a simple digital delay featuring high-quality sound. You can set length of the delay to get long echoes or fat, thick sounds. This algorithm is normally used with the send/return method.





FILTER

These filters allow you to greatly affect the frequency characteristics of the input sound. There are four types from which to select.

Type [Type] (Filter Type)LPF, BPF, HPF, NOTCH

This sets the type of filter used.

LPF (Low pass filter)

This filter passes frequencies below the cutoff frequency.

BPF (Band pass filter)

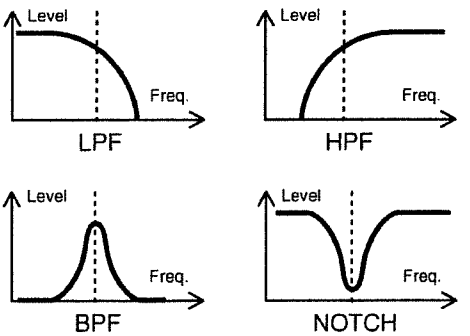
This filter passes frequencies near the cutoff frequency.

HPF (High pass filter)

This filter passes frequencies above the cutoff frequency.

NOTCH (Notch filter)

This filter passes frequencies other than those near the cutoff frequency.



Slope(oct) [Slope]-12, -24 dB

This sets the filter's slope characteristics at the cutoff frequency (-24 dB at one octave: steep; -12 dB at one octave: shallow).

CutOffFreq [Freq] (Cutoff Frequency)0 - 100

This sets the filter's cutoff frequency. The closer this is set to zero, the lower the cutoff frequency; the closer to 100, the higher the frequency.

Resonance [Reso]0 - 100

This sets the filter's resonance level. Raising the setting increases resonance near the cutoff frequency, giving the sound a particular characteristic. If the Resonance value is set too high, another sound (oscillation) begins to appear. Take care to prevent this sound from damaging your ears or your playback equipment.

Gain [Gain]0 - 24 dB

This compensates for the drop in volume in the cut frequency range in some filters. The level of correction increases as the value is increased, raising the volume.

DELAY

This digital delay can be switched between stereo, mono, and alternate settings. It features a maximum delay of 1200 msec (1.2 seconds).

Type [Type]ST, MONO, ALT

This switches stereo, monaural or alternate.

MONO (Monaural)

This is a single-input, dual-output delay. Stereo sound is mixed before being input.

ST (Stereo)

This is a dual-input, dual-output delay. The delay sound output features the same stereo placement as that of the

input.

ALT (Alternate)

The left and right output of this alternate delay is the reverse of the input.

Time [Time]1 – 1200 msec

This sets the delay time, that is, the elapsed time between the source sound and the delay sound. When in mono or stereo mode, the settings value is limited to the range allowed by the left-right shift settings. In alternate mode, this is limited to 1–600 milliseconds.

L-R Shift [Shift] (L-R Time Shift) L1199 – R1199 msec

This shifts the location from where the sound appears to originate by increasing the delay sound only on the left or the right. Depending on the time setting, settings values may be limited. This is disabled in alternate mode.

L-R Order [Order]L>>R, L<<R

In alternate mode, this setting determines which side plays the delay sound before the other (with L>>R, the left side is expressed first; when set to L<<R, the right side is expressed first). This is enabled only in alternate mode.

Feedback [FB Lv] (Feedback Level)0 – 100

This sets the times for the repeated delay sound. When set to 0, each delayed sound is played only once.

FX Level [EffLv]0 – 100

This sets the volume of the delayed sound. When using the insert method, first get a rough balance between the reverb and the dry sounds, then lower the level a little.

Dry Level [DryLv]0 – 100

This sets the volume of the source sound. Set this to 0 when using the send/return method. Increase the value when using the insert method to mix the source sound into the output.

LoDampFreq [LDFrq] (Low Damp Frequency) 50 – 4000 Hz

The Low Damp effect rapidly dampens the low frequency range of the delayed sound, resulting in a cleaner delay effect. This sets the upper frequency limiting the range to be dampened.

LoDampGain [LD-G] (Low Damp Gain) -36 – 0dB

This sets the amount of the Low Damp effect.

HiDampFreq [HDFrq] (High Damp Frequency) 1.0 – 20.0 kHz

In the natural world, the high frequencies die out very quickly. By attenuating the higher frequencies first, High Damp makes the delay sound more natural. This sets the lower frequency limiting the range to be dampened.

HiDampGain [HD-G] (High Damp Gain) -36 – 0 dB

This sets the amount of the High Damp effect.

GATE

These parameters are the same as those in the GATE in Algorithm 01 (REVERB & GATE) (p.10).

Mode [Mode] (Gate Mode)GATE, DUCK

Threshold [Thre] (Threshold Level)0 – 100

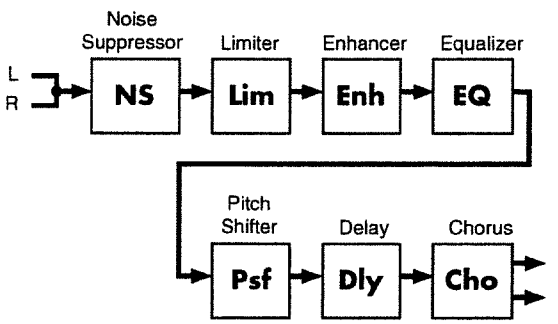
Attack [Atk] (Attack Time)0 – 100

Hold [Hold] (Hold Time)0 – 100

Release [Rele] (Release Time)0 – 100

03 VOCAL MULTI

This is a multi-effects for vocals.



NOISE SUPPRESSOR

This suppresses noise (such as background noise and hum from mics) at times when no sound is being played. The noise suppressor looks at the input level at the beginning of the effects chain, and when there is no input, suppresses any output at the end.

Threshold [Thre] (Threshold Level)0 – 100

This sets the volume level at which starts muting. Set the value higher when there is a lot of noise, and if there is less noise, decrease the value.

Release [Rele] (Release Time)0 – 100

This sets the time from when the noise suppression starts to the point where the volume reaches 0.

This effect is lost If the threshold level is set too low, while setting it too high mutes even the sounds you want to hear. Furthermore, if the release time is set too long, the noise suppression then becomes distracting; when set too short, it

sounds unnatural. Adjust to obtain the most suitable settings for the input noise conditions at any given time.

LIMITER/DE-ESSER

You can use either the Limiter or De-esser functions of this effect. The limiter is an effect that compresses high-level signals, thereby preventing distortion. De-esser is an effect that cuts the sibilance in vocals, giving sounds a softer quality.

Mode [Mode]LMT, DES
This determines whether the Limiter or De-esser function is used.

LMT Level [Level] (Limiter Output Level) -60 – +12 dB
This sets the level of the signal passing through the Limiter.

Thresh [Thre] (Limiter Threshold Level) -60 – 0 dB
This adjusts the level of the signal at which the Limiter begins to function (the threshold level).

Release [Rele] (Limiter Release Time)0 – 100
This adjusts the time for the Limiter to stop functioning after the signal falls back under the threshold level.

DES Sens [Sens] (De-esser Sens)0 – 100
This adjusts the sensitivity of the de-esser effect based on the input level.

Freq [Freq] (De-esser Frequency) 1.0 – 10.0 kHz
This adjusts the frequency to which the De-esser effect is applied. The effect works best at higher frequencies than that of the settings.

ENHANCER

This effect regulates the high-end overtones, clarifying the sound and the sound contour.

Sens [Sens] (Sensitivity)0 – 100
This sets the degree to which the Enhancer effect is applied.

Frequency [Freq]1.0 – 10.0 kHz
This sets the lower limit of the frequencies to which the enhancement effect is added.

Mix Level [MixLv]0 – 100
This sets the amount of the overtones produced by the Enhancer that is mixed in with the source sound.

Out Level [OutLv]0 – 100
This sets the output volume.

EQ (3-Band Equalizer).

These parameters function in the same way as those in the EQ in Algorithm 01 (REVERB & GATE) (p.10).

Low Type [LType]SHELV, PEAK
Low Freq [LFreq]20 – 2000 Hz
Low Gain [LGain]-12 – +12 dB
Low Q [LQ] 0.3 – 10.0
Mid Freq [MFreq]200 – 8000 Hz
Mid Gain [MGain]-12 – +12 dB
Mid Q [MQ] 0.3 – 10.0
High Type [HType]SHELV, PEAK
High Freq [HFreq]1.4 – 20.0 kHz
High Gain [HGain]-12 – +12 dB
High Q [HQ] 0.3 – 10.0
Out Level [OutLv]-60 – +12 dB

PITCH SHIFTER

This effect changes the pitch of the source sound.

Pitch [Pitch]-12 – +12
This adjusts the pitch in semitone (half-step) increments.

Fine [Fine]-100 – +100
This finely adjusts the pitch shift.

FX Level [EffLv]0 – 100
This sets the volume of the pitch-shifted sound.

Dry Level [DryLv]0 – 100
This sets the volume of the direct sound.

DELAY

These parameters function in the same way as those in the DELAY in Algorithm 02 (EZ DELAY) (p.12).

Type [Type] MONO, ALT
Time [Time] 1 – 1200 msec
Feedback [FB Lv] (Feedback Level)0 – 100
FX Level [EffLv]0 – 100
Dry Level [DryLv]0 – 100

CHORUS

This effect adds breadth to the sound, making it "fatter."

Mod.LR Phs [Phase] (Modulation L-R Phase) NORM, INV
This is ordinarily set to NORM. When set to INV (INVERT), the modulation (rising and falling sound) in the right channel is inverted against the left channel. This gives an effect in which the modulation in the left and right channels is reversed.

Depth [Depth]0 – 100
This sets the chorus modulation depth.

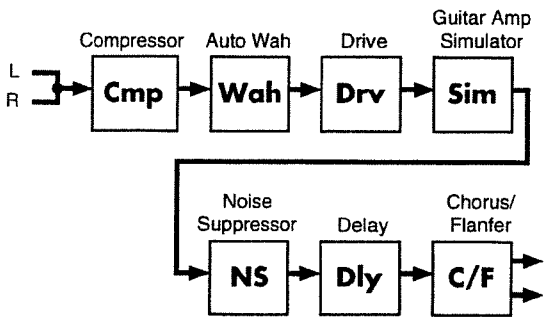
Rate [Rate]0 - 100
This sets the chorus modulation cycle time.

FX Level [EffLv]0 - 100
This adjusts the chorus volume level.

Dry Level [DryLv]0 - 100
This adjusts the volume level of the direct sound.

04 GUITAR MULTI 1

This is a multi-effect for guitars.



COMPRESSOR

This effect compresses the level of the signal by reducing the level of strong input signals and boosting low-level signals.

Attack [Atk] (Attack Time)0 - 100
This adjusts the attack strength when the sound is input.

Level [Level] (Output Level)0 - 100
This adjusts the Compressor volume level.

Sustain [Sus] (Sustain Time)0 - 100
This adjusts the length of time that the compressor continues to raise and hold the level of weak input.

Tone [Tone]0 - 100
This adjusts the compressor tone.

AUTO/TOUCH WAH

Wah is an effect created by the periodic change in a filter's frequency characteristics, giving a particular kind of tone change. You can get the wah effect by changing the volume of the input sound or by using cyclical time-based changes.

Type [Type] (Filter Type)LPF, BPF
This selects the type of filter used to make the wah.
This selects either the BPF (band pass filter) or LPF (low pass filter).
When set to BPF, the wah effect occurs within a narrow frequency range; setting this to LPF produces the wah effect over a wide range of frequencies.

Frequency [Freq] (Cutoff Freqency)0 - 100
This sets the reference frequency for the wah effect (the frequency at which the wah starts).

Peak [Peak]0 - 100
This sets the amount of wah effect near the reference frequency. The range narrows as the value increases; lower the value to get the wah effect over a wider range.

Polarity [Pol.]UP, DOWN
When the wah effect is added through changes in the source sound volume, this setting is for selecting whether the effect is to be added to the high frequencies (UP) or lower frequencies (DOWN).

Trig.Sens [Sens]0 - 100
Sets the sensitivity level when wah is added through changes in the source sound volume. The wah effect is added at lower volumes as the volume increaces.

LFO Depth [Depth]0 - 100
This sets the depth of the wah sound when the effect changes cyclically. Set this to 0 when changes in the effect are not based on time cycles.

LFO Rate [Rate]0 - 100
This adjusts the cycle time when the wah effect changes cyclically.

DRIVER

This effect adds distortion, "spreading" the sound.

Type [Type]OD, DS, METAL
This selects the effect type.

METAL
This distorts the sound most.

DS
This is what most consider the typical distortion effect.

OD
This provides the mildest distortion of the three settings.

Gain [Gain]0 - 100
This sets the amount of distortion.

Out Level [OutLv]0 - 100
This sets the volume of the effect sound.

OD/DS Tone [Tone]0 - 100
This adjusts the tone character. Setting becomes valid when TYPE is DS or OD.

METAL HiG [HGain] (High Gain)0 - 100
This sets the gain of the high range. Setting becomes valid when TYPE is METAL.

METAL MidG [MGain] (Middle Gain)0 – 100
This sets the gain of the midrange. Setting becomes valid when TYPE is METAL.

METAL LowG [LGain] (Low Gain)0 – 100
This sets the gain of the low range. Setting becomes valid when TYPE is METAL.

AMP. SIMULATOR

This simulates the sound of a guitar amplifier.

Amp.Type [Type] (Amplifier Type)
SMALL, BuiltIN, 2STACK, 3STACK
This selects the guitar amp type.

SMALL: Small amp
BuiltIN: Built-in type amp
2STACK: Stack of two large amps
3STACK: Stack of three large amps

NOISE SUPPRESSOR

These parameters function the same way as those in the NOISE SUPPRESSOR in Algorithm 03 (VOCAL MULTI) (p.13).

Threshold [Thre] (Threshold Level)0 – 100
Release [Rele] (Release Time)0 – 100

DELAY

These parameters function in the same way as those in the DELAY in Algorithm 02 (EZ DELAY) (p.12).

Type [Type] ST, MONO, ALT
Time [Time] 1 – 1200 msec
Feedback [FB Lv] (Feedback Level)0 – 100
FX Level [EffLv]0 – 100
Dry Level [DryLv]0 – 100

CHORUS/FLANGER

This provides you with chorus or flanger effects to suit your needs. Chorus is an effect that adds breadth and fullness to the sound. The flanger gives you effect that is like a jet sound rising and falling.

Mode [Mode]CHORUS, FLANGER
This selects either the chorus or the flanger.

Mod.LR Phs [Phase]
(Modulation L-R Phase)NORM, INV
This sets the phase when the chorus or flanger sound is mixed in with the source sound in the left and right channels. When this is set to NORM, the channels are in phase; when set to INV (inverted), the phases of left and right channels are inverted relative to each other.

Depth [Depth]0 – 100
This sets the chorus or flanger modulation depth.

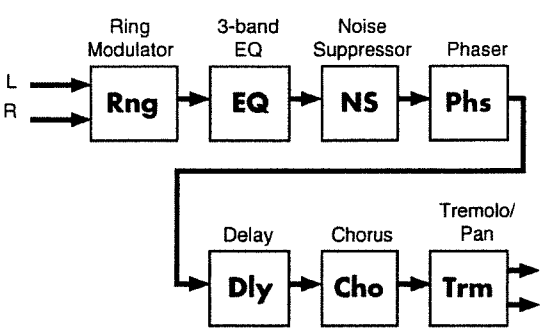
Rate [Rate]0 – 100
This sets the chorus or flanger modulation cycle time.

FL Manual [Manu] (Flanger Manual)0 – 100
This sets the center frequency at which the chorus or flanging effect is applied.

FL Reso [Reso] (Flanger Resonance)0 – 100
The more this value is increased, the stronger this distinctive effect becomes. If the Resonance value is set too high, another sound (oscillation) begins to appear.

05 KEYBOARD MULTI

This is a multi-effect designed for keyboard.



RING MODULATOR

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

Osc.Freq [OscF.]0 – 100
This adjusts the frequency of the internal oscillator.

FX Level [EffLv]0 – 100
This adjusts the volume of the effect sound.

Dry Level [DryLv]0 – 100
This adjusts the volume of the direct sound.

EQ (3-Band Equalizer).

These parameters are the same as those in the EQ in Algorithm 01 (REVERB & GATE) (p.10).

Low Type [LType]SHELV, PEAK
Low Freq [LFreq]20 – 2000 Hz
Low Gain [LGain]-12 – +12 dB
Low Q [LQ] 0.3 – 10.0
Mid Freq [MFreq]200 – 8000 Hz

Mid Gain [MGain]-12 – +12 dB
Mid Q [MQ] 0.3 – 10.0
High Type [HType]SHELV, PEAK
High Freq [HFreq]1.4 – 20.0 kHz
High Gain [HGain]-12 – +12 dB
High Q [HQ] 0.3 – 10.0
Out Level [OutLv]-60 – +12 dB

NOISE SUPPRESSOR

These parameters function the same way as those in the NOISE SUPPRESSOR in Algorithm 03 (VOCAL MULTI) (p.13).

Threshold [Thre] (Threshold Level)0 – 100
Release [Rele] (Release Time)0 – 100

PHASER

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

CenterFreq [Freq] (Center Frequency)0 - 100
Adjusts the center frequency of the phaser effect.

Resonance [Reso]0 - 100
Determines the amount of resonance (feedback). Increasing the value will emphasize the effect, creating a more unusual sound. Setting it to a minus value will create resonance having a reversed phase.

Depth [Depth]0 - 100
Determines the depth of the Phaser effect.

Rate [Rate]0 - 100
This sets the rate of the Phaser effect.

Separation [Sepr] (Stereo Separation)0 - 100
Adjusts the diffusion. The diffusion increases as the value increases.

DELAY

These parameters function in the same way as those in the DELAY in Algorithm 02 (EZ DELAY) (p.12).

Time [Time] 1 – 1200 msec
Feedback [FB Lv] (Feedback Level)0 – 100
FX Level [EffLv]0 – 100
Dry Level [DryLv]0 – 100

CHORUS

A sound with a subtly shifted pitch is added to the direct sound, making the final output sound thicker and broader.

Mod.LR Phs [Phase]NORM, INV
This sets the phase when the chorus or flanger sound is mixed in with the source sound in the left and right channels. When this is set to NORM, the channels are in phase; when set to INV (inverted), the phases of left and right channels are inverted relative to each other.

Depth [Depth]0 - 100
Adjusts the depth of the Chorus effect. To use it for doubling, set the value to "0."

Rate [Rate]0 - 100
Adjusts the rate of the Chorus effect.

FX Level [EffLv]0 - 100
This adjusts the volume of the effect sound.

Dry Level [DryLv]0 - 100
This adjusts the volume of the direct sound.

Pre Delay [PreDL]0 - 50 msec
Adjusts the time needed for the effect sound to be output after the direct sound has been output. By setting a longer Pre Delay time, you can obtain an effect that sounds like more than one sound is being played at the same time (doubling effect).

LoCutFreq [LoCut] (Low Cut Frequency) THRU, 50 - 800 Hz
The low cut filter cuts the frequencies below the specified frequency. This setting adjusts the frequency at which the low cut filter will begin to take effect. When "THRU" is selected, the low cut filter will have no effect.

HiCutFreq [HiCut] (High Cut Frequency) 0.5 - 12.5 kHz, THRU
The high cut filter cuts the frequencies above the specified frequency. This setting adjusts the frequency at which the high cut filter will begin to take effect. When "THRU" is selected, the high cut filter will have no effect.

TREMOLO/PAN

Tremolo is an effect that creates a cyclic change in volume. Pan cyclically moves the stereo position between left and right (when stereo output is used).

Mode [Mode] TremTRI, TremSQR, PanTRI, PanSQR
Selection for tremolo or pan. And selection for the waveform that the effect will use.

TremTRI

The volume will change cyclically. Smooth change will be produced.

TremSQR

The volume will change cyclically. Abrupt change will be

produced.

PanTRI

The sound will be moved cyclically between left and right. Smooth change will be produced.

PanSQR

The sound will be moved cyclically between left and right. Abrupt change will be produced.

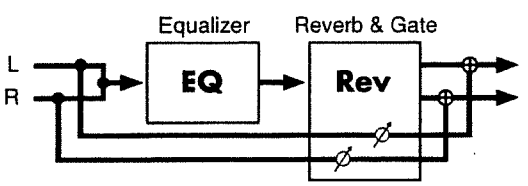
Depth [Depth]0 - 100
Adjusts the depth of the effect.

Rate [Rate]0 - 100
Adjusts the frequency (speed) of the change.

L-R Balance [Bal]L63 - R63
Adjusts the stereo position of the sound.

06 REVERB 2

A simulation of the reverberation of a room or hall.



EQ (3-Band Equalizer).

These parameters are the same as those in the EQ in Algorithm 01 (REVERB & GATE) (p.10).

Low Type [LType]SHELV, PEAK
Low Freq [LFreq]20 – 2000 Hz
Low Gain [LGain]-12 – +12 dB
Low Q [LQ] 0.3 – 10.0
Mid Freq [MFreq]200 – 8000 Hz
Mid Gain [MGain]-12 – +12 dB
Mid Q [MQ] 0.3 – 10.0
High Type [HType]SHELV, PEAK
High Freq [HFreq]1.4 – 20.0 kHz
High Gain [HGain]-12 – +12 dB
High Q [HQ] 0.3 – 10.0
Out Level [OutLv]-60 – +12 dB

REVERB

Reverberation (or reverb) is the effect caused by sound waves decaying in an acoustic space, or a digital simulation thereof. This decay occurs because sound waves bounce off many walls, ceilings, objects, etc. in a very complex way. These reflections, coupled with absorption by various objects, dissipate the acoustic energy over a certain period of time (called the decay time). The ear perceives this phenomenon as a continuous wash of sound.

Rev Type [Type] (Reverb Type)ROOM, HALL
This selects the Reverb Type. Various different simulations of space are offered.

ROOM

Simulates the reverberation in a small room.

HALL

Simulates the reverberation in a concert hall.

RoomSize [Size] (Room Size)1 - 10
This parameter adjusts the size of the room which is simulated.

Rev Time [Time] (Reverb Time)0.1 - 32.0 sec
This parameter adjusts the duration (time) of the reverb.

FX Level [EffLv]0 - 100
This sets the volume of the reverb sound. When using the insert method, first get a rough balance between the reverb and the dry sounds, then lower the level a little.

Dry Level [DryLv]0 - 100
This sets the volume of the source sound. Set this to 0 when using the send/return method. Increase the value when using the insert method to mix the source sound into the output.

Pre Delay [PreDL]0 - 200 msec
This parameter adjusts the time interval between the direct sound and the beginning of the reverb sound.

Density [Dens.]0 - 100
Adjust the density of the sound (Early Reflections) that arrives at the listener after bouncing off the walls once or a few times.

Early Ref. [E.Ref] (Early Reflection)0 - 100
This parameter adjusts the volume level of the initial reflected sound.

LoDampFreq [LDFrq] (Low Damp Frequency) 50 - 4000 Hz
This parameter adjusts the frequency at which the low-frequencies are damped. The reverb sound in the band below this frequency is damped.

LoDampGain [LD-G] (Low Damp Gain) -36 - 0 dB
This parameter adjusts the amount of damping for Low Damp. No low-frequency damping occurs when set to "0."

HiDampFreq [HDFrq] (High Damp Frequency) 1.0 - 20.0 kHz
This parameter adjusts the standard frequency at which the

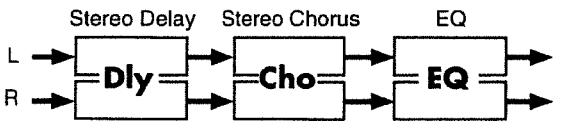
high-frequencies are damped. The reverb sound in the band above the standard frequency is damped.

HiDampGain [HD-G] (High Damp Gain)
-36 - 0 dB
This parameter adjusts the amount of damping for High Damp. No high-frequency damping occurs when set to "0."

HiCutFreq [HiCut] (High Cut Frequency)
0.2 - 20.0 kHz
This parameter adjusts the frequency at which a low-pass filter starts to be applied. The effect is applied to the reverb sound.

07 STEREO DELAY CHORUS

This algorithm connects a stereo delay and a stereo chorus in series, allowing you to add depth and spaciousness to the sound while preserving the positioning of the stereo input signal.



DELAY

This parameter creates a distinctive effect (such as a thicker sound) by applying a delayed sound to the direct sound. By using Tempo Delay, you can easily set the delay time to match the tempo of the song.

Time L [TimeL]1 - 1200 msec
Time R [TimeR]1 - 1200 msec
This parameter adjusts the delay time (i.e., the interval for which sound is delayed).

Feedback L [FB L]0 - 100
Feedback R [FB R]0 - 100
This parameter adjusts the amount of feedback. Changing the amount of feedback causes the number of time the delayed sound is repeated to change as well.

FX Level [EffLv]0 - 100
This adjusts the volume of the delay sound.

Dry Level [DryLv]0 - 100
Adjusts the volume of the direct sound.

HiCutFreq [HiCut] (High Cut Frequency)
0.2 - 20.0 kHz, THRU
The High Cut Filter cuts the frequency contents that are higher than the set frequency. This parameter adjusts the frequency where the high cut filter starts working. When it is set to "THRU," the high cut filter does not work at all.

HiDampGain [HD-G] (High Damp Gain)
-36 - 0 dB
This parameter adjusts the amount of damping for High Damp. No high-frequency damping occurs when set to "0."

CHORUS

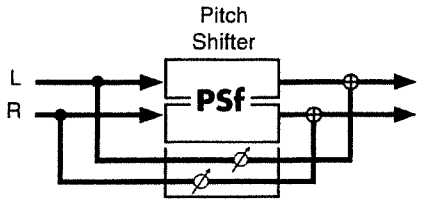
These parameters are the same as those in the CHORUS in Algorithm 05 (KEYBOARD MULTI) (p.16).
Mod.LR Phs [Phase]NORM, INV
Depth [Depth]0 – 100
Rate [Rate] 0 – 100
FX Level [EffLv]0 – 100
Dry Level [DryLv]0 – 100
Pre Delay [PreDL]0 – 50msec
LoCutFreq [LoCut] (Low Cut Frequency)THRU, 50 – 800 Hz
HiCutFreq [HiCut] (High Cut Frequency)0.5 – 12.5 kHz, THRU

EQ (3-Band Equalizer)

These parameters are the same as those in the EQ in Algorithm 01 (REVERB & GATE) (p.10).
Low Type [LType]SHELV, PEAK
Low Freq [LFreq]20 – 2000 Hz
Low Gain [LGain]-12 – +12 dB
Low Q [LQ] 0.3 – 10.0
Mid Freq [MFreq]200 – 8000 Hz
Mid Gain [MGain]-12 – +12 dB
Mid Q [MQ] 0.3 – 10.0
High Type [HType]SHELV, PEAK
High Freq [HFreq]1.4 – 20.0 kHz
High Gain [HGain]-12 – +12 dB
High Q [HQ] 0.3 – 10.0
Out Level [OutLv]-60 – +12 dB

08 STEREO PITCH SHIFTER

This algorithm features two pitch shifters arranged in parallel, making it stereo compatible. It can shift the pitch of the input signal up to one octave up or down. This algorithm can be used with either the insert method or the send/return method.



PITCH SHIFTER

This effect changes the pitch of the source sound. The degree of pitch shift can be set separately for each channel.

StereoLink [Link]OFF, ON
This selects whether the pitch shift in left and right channels are to be linked or set independently. When set to "ON," the right channel pitch shifter settings conform to those set for the left channel.

Grade [Grade] (Sound Grade)1, 2, 3, 4, 5
This sets the quality of the effect sound. The higher the value is set, the more natural-sounding the effect is; however, this increases the delay from the source sound as well. Depending on the setting, you may be able to hear some disruption of the sound in drums and other parts, so select the setting after listening to the sound at different settings.

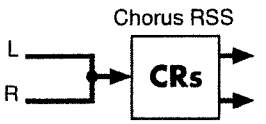
Lch Pitch [PichL]-12 – +12
Lch Fine [FineL] -100 – +100
Rch Pitch [PichR] -12 – +12
Rch Fine [FineR]-100 – +100
These set the degree of left and right pitch shift. You can adjust the pitch shift in semitones with "Pitch" and in cents (1/100 of a semitone) with "Fine" for minute adjustment of the pitch shift. When Stereo Link is on, changes to the right channel settings are disregarded.

FX Level [EffLv]0 – 100
This sets the volume of the effect.

Dry Level [DryLv]0 – 100
This sets the volume of the source sound. When simply changing the pitch of the source sound, set the dry level to 0 and use with the insert method.

09 CHORUS RSS

This algorithm is a chorus with RSS connected to the output. The sound of the left channel is placed 90 degrees left, and the sound of the right channel is placed 90 degrees right.



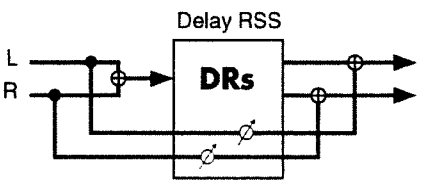
CHORUS RSS

These parameters function in the same way as those in the CHORUS in Algorithm 05 (KEYBOARD MULTI) (p.16).

Mod.LR Phs [Phase]NORM, INV
Depth [Depth]0 – 100
Rate [Rate] 0 – 100
FX Level [EffLv]0 – 100
Dry Level [DryLv]0 – 100
Pre Delay [PreDL]0 – 50 msec
LoCutFreq [LoCut] (Low Cut Frequency)THRU, 50 – 800 Hz
HiCutFreq [HiCut] (High Cut Frequency)0.5 – 12.5 kHz, THRU

10 DELAY RSS

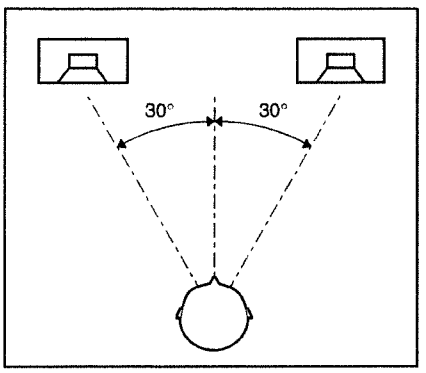
This is a single-in/dual-out delay with RSS effects added to the output. When heard through stereo speakers, a space of 90 degrees between the left and right sides (of your head) opens up and a wider, three-dimensional delay sound can be heard within that space. This is usually added with the send/return method.



Notes on Using RSS

To exhibit the RSS effect to the fullest extent, take note of the following points.

- RSS works best in rooms where there is little reverberation.
- One-way speakers are most appropriate. However, coaxial or virtual coaxial speakers may also be used.
- Keep speakers as far away from side walls as possible.
- Do not position the left and right speakers with too much distance between them.
- Listen from the optimal position, as shown below.

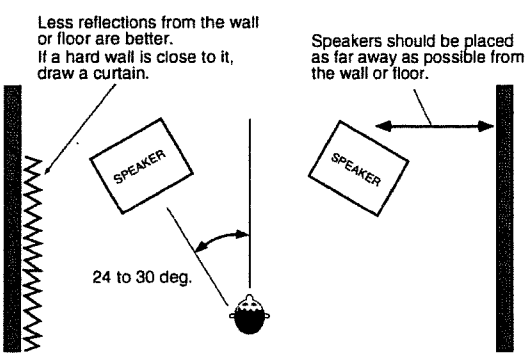


Notice on Package with RSS

RSS is an effect that gives the sound device three-dimensional sound with an ordinary stereo system. Monitoring environment is critical in exhibiting the RSS effect to the fullest extent. We recommend that packaging for products containing songs that use the RSS patch carry the following description at the time of sale.

For Stereo Speakers

This sound is made to be played specifically through speakers.
The proper effect cannot be obtained if listened to through headphor



DELAY RSS

This single-input delay adds the RSS effect for widened spatial characteristics.

Time [Time]1 - 1200 msec

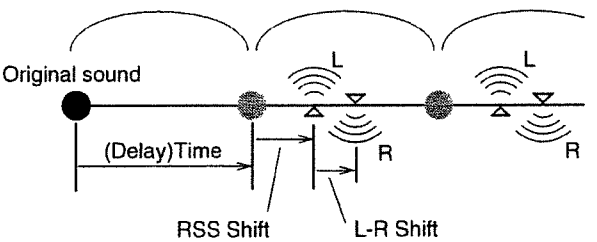
This sets the elapsed time between the source sound and the delay sound (the delay time) in millisecond units. The settings value is limited to the range allowed by the left-right shift and RSS shift settings.

RSS Shift [RsSft] (RSS Time Shift) -1199 - 1199 msec

The further increases the delay time only of sounds processed through RSS before the sounds are played. The settings value is limited to the range allowed by the delay time and left-right shift settings.

L-R Shift [LRSft] (L-R Time Shift) L1199 - R1199 msec

This shifts the location from where the sound appears to originate by increasing the delay sound only on the left or the right. The settings value is limited to the range allowed by the delay time and left-right shift settings.



Feedback [FB Lv] (Feedback Level)0 - 100

This sets the delay sound repeat time. When set to 0, the delayed sound is played only once.

FX Level [EffLv]0 - 100

MonoDly [Mono] (Monaural Delay Level) 0 - 100

RSS Dly [RSS] (RSS Delay Level) 0 - 100

This sets the volume of the delay sound. Set levels for the monaural delay and RSS delay sounds individually, and then adjust the total level of the overall effect. You can better interpret the RSS effect by setting the monaural delay level to 0. However, with the L-R shift set to 0 (no shift), the RSS effect may be difficult to hear.

Dry Level [DryLv] 0 - 100

This sets the volume of the source sound. Set this to 0 when using the send/return method. Increase the value when using the insert method to mix the source sound into the output.

LoDampFreq [LDFrq] (Low Damp Frequency) 50 - 4000 Hz

The Low Damp effect rapidly dampens the low frequency range of the delayed sound, resulting in a cleaner delay effect. This sets the upper frequency limiting the range to be dampened.

LoDampGain [LD-G] (Low Damp Gain) -36 - 0 dB

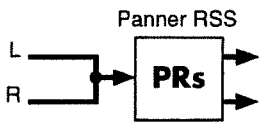
This sets the amount of the Low Damp effect.

HiDampFreq [HDFrq] (High Damp Frequency)
1.0 – 20.0 kHz
In the natural world, the high frequencies die out very quickly. By attenuating the higher frequencies first, High Damp makes the delay sound more natural. This sets the lower frequency limiting the range to be dampened.

HiDampGain [HD-G] (High Damp Gain)
-36 – 0 dB
This sets the amount of the High Damp effect.

11 PANNER RSS

RSS (Panner) can make the sound seem to revolve around the listener.



PANNER RSS

Speed [Speed] (Roratiion Speed)0 – 100
This parameter adjusts the speed with which the position of the sound moves.

Direction [Dir] (Rotation Direction)CW, CCW
This parameter selects the sound's direction of rotation.

CW(Clockwise)

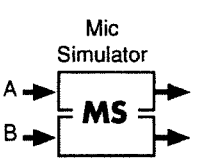
Rotates the sound clockwise.

CCW(Counterclockwise)

Rotates the sound counterclockwise.

12 MIC SIMULATOR

This effect takes sounds recorded using standard dynamic mics, pin mics, or line signals, and converts them so that they sound as if they were recorded using an expensive studio-quality condenser mic. This also lets you add proximity effect, distance, and other effects.



LINK

This is the link switch for Channels A and B.

Link Sw [Link] (Link Switch)OFF, ON
When set to Off, each of the two channels works independently as a mono channel equalizer. When set to On, both equalizer channels work simultaneously on Channel A. (The Channel B settings are disregarded.)

MIC SIMULATOR A/B

This effect converts the characteristics of inexpensive, all-purpose mics to those of expensive, studio-quality mics (microphone'microphone conversion). It makes signals that have already been recorded in your Project sound as if the changes in sound quality were made through mic selection and placement. This also adds characteristics of microphones to instrument sounds recorded through line input (line'microphone conversion).

Mic Conv. [Conv.] (Mic Converter Switch)OFF, ON
This switches the Mic Converter on and off. When turned off, the TypeIn, TypeOut, and Phase settings are disabled.

TypeIn [M.In] (Input Mic Type)
DR-20, SmallD, HeadD, MiniC, FLAT
This selects the type of mic to be used for recording.

DR-20

Roland DR-20 (dynamic mic manufactured by Roland)

SmallD

Small dynamic mic used for miking instruments, vocals, and the like

HeadD

Headset-type dynamic mic

MiniC

Mini condenser mic

FLAT

Line input

TypeOut [M.Out] (Output Mic Type)
SmallD, VocalD, LargeD, SmallC, LargeC, Vnt.C, FLAT
This selects the type of mic simulated.

SmallD

Dynamic mic for general use with instruments and vocals. Perfoect for guitar amps and snare drums.

VocalD

Dynamic mic especially known for use with vocals. Features exceptional midrange presence. For vocals.

LargeD

Dynamic mic with extended low range. For bass drums,

toms, and similar applications.

SmallC

Small condenser mic for use with instruments. Features a particularly fine high range. For use with metal percussion instruments and acoustic guitars.

LargeC

Flat-response condenser mic. For vocals, narration, live instruments, and the like.

Vnt.C

Vintage condenser mic. For vocals, instruments, and the like.

FLAT

Mic with flat frequency response characteristics. Use this when you want the sound of a mic used for miking larger groups.

NOTE

When a condenser-type mic is selected in TypeOut, low-range noise transmitted through the mic stand may be accentuated due to the mic's low range characteristics. In such instances, either cut out any unnecessary low end with bass cut filter, or equip the mic stand with an isolation mount (a mic holder with rubber or other shock absorbing material).

Phase [Phase]NORM, INV

This selects the mic phase.

NORM: In phase to the input.

INV: Invented phase to the input.

BassCut [BsCut] (Bass Cut Filter Switch)OFF, ON

This filter cuts out popping and other such noises as well as unneeded low end sounds. Switching this on creates a simulated bass cut filter. When turned off, the Freq setting is disabled.

Freq [Freq] (Frequency)THRU, 20 – 2000 Hz

This adjusts the bass cut filter's cutoff frequency.

Position [Pos] (Mic Position Switch)OFF, ON

Microphones tend to accentuate the low end the closer they are placed to the source sound. This is known as the proximity effect. Switching on this effect simulates frequency characteristics and timing differences that change with distance. When turned off, the ProxFx, Distance settings are disabled.

Prox.Fx [Prox] (Proximity Effects)-12 – +12

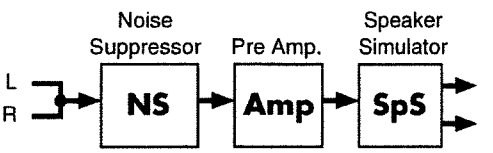
Microphones tend to accentuate the low end the closer they are placed to the source sound. This effect simulates those qualities, and compensates for the low end characteristics that change with distance. Positive settings bring the mic closer to the source, and negative settings put the mic at a greater distance.

Distance [Dis] (Mic Distance)0 – 3000 cm

This simulates the time difference that changes with distance from the source.

13 GUITAR AMP. SIMULATOR

This algorithm simulates a guitar amp.



NOISE SUPPRESSOR

These parameters function the same way as those in the NOISE SUPPRESSOR in Algorithm 03 (VOCAL MULTI) (p.13).

Threshold [Thre] (Threshold Level)0 – 100

Release [Rele] (Release Time)0 – 100

PRE AMP. SIMULATOR

This effect simulates the pre-amp section of a guitar amplifier.

Amp.Type [Type] (Pre Amp Type)J C-120, CleanTW, MatchDR, BG LEAD, 1959-1, 1959-2, 1959-12, SLDN, 5150, MetalLD, OD-1, OD-2T, DS, FUZZ

Select the type of guitar amp.

JC-120

The sound of a Roland JC-120.

CleanTW

The sound of a standard built-in type vacuum tube amp.

MatchDR

The sound of a recent vacuum tube amp widely used in blues, rock, and fusion.

BG LEAD

The sound of a vacuum tube amp representative of the late 70's and the 80's.

1959-1

The sound of the large vacuum tube amp stack that was indispensable to the British hard rock of the 70's, with input 1 connected.

1959-2

The same amp as 1959-1, but with input II connected.

1959-12

The same amp as 1959-1, but with inputs I and II connected in parallel.

SLDN

The sound of a vacuum tube amp usable in a wide variety of styles.

5150

The sound of a large vacuum tube amp suitable for heavy metal.

MetalLD

A metal lead sound with a distinctive mid-range.

OD-1

The sound of the BOSS OD-1 compact effector.

OD-2T

The sound of the BOSS OD-2 compact effector with the Turbo switch on.

DS

Distortion sound.

FUZZ

Fuzz sound.

Gain [Gain] (Pre Amp Gain)LOW, MID, HIGH

Switch the degree of pre-amp distortion between three levels (Low/Middle/High).

Volume [Vol] (Pre Amp. Volume)0 - 100

Adjusts the volume and degree of distortion of the amp.

MasterVol [Mst] (Pre Amp. Master Volume) 0 - 100

Adjust the volume of the entire pre-amp.

Bright [Br.Sw] (Brightness)OFF, ON

Turning this "On" will produce a sharper and brighter sound. This parameter can be set if the Type is set to "JC-120," "Clean Twin," or "BG Lead."

Bass [Bass]0 - 100

Adjust the tone of the low range.

Middle [Mid]0 - 100

Adjust the tone of the mid range. If "Match Drive" is selected for the Type parameter, this parameter cannot be set.

Treble [Tre]0 - 100

Adjust the tone of the high range.

Presence [Pres]0 - 100 (-100 - 0)

Adjust the tone of the ultra-high range. Normally the range will be 0–100, but when "Match Drive" is selected, the range will be -100–0.

SPEAKER SIMULATOR

This effect simulates a speaker system.

Type [Type] (Speaker type) SMALL, MIDDLE, JC-120, BltIn 1, BltIn 2, BltIn 3, BltIn 4, BG STK1, BG STK2, MS STK1, MS STK2, MetlSTK

Select the type of speaker. The specifications of each type are as follows. The speaker column indicates the diameter of each speaker unit (in inches) and the number of units.

Type	Cabinet	Speaker	Mic
SMALL	a	10	D
MIDDLE	b	12 x 1	D
JC-120	b	12 x 2	D
BltIn 1	b	12 x 2	D
BltIn 2	b	12 x 2	C
BltIn 3	b	12 x 2	C
BltIn 4	b	12 x 2	C
BG STK1	c	12 x 2	C
BG STK2	d	12 x 2	C
MS STK1	d	12 x 4	C
MS STK2	d	12 x 4	C
MetlSTK	e	12 x 4	C

a: Small open-back enclosure
b: open back enclosure
c: sealed enclosure
d: large sealed enclosure
e: large double stack
C: condenser mic
D: dynamic mic

MicSetting [MicS]1,2,3

Specify the location of the mic that is recording the sound of the speaker. This can be adjusted in three steps, with the mic becoming more distant in the order of 1, 2, and 3.

Level [MicLv] (Mic Level)0 - 100

Adjust the volume of the mic sound.

Dry Level [DryLv]0 - 100

Adjust the volume of the direct sound.

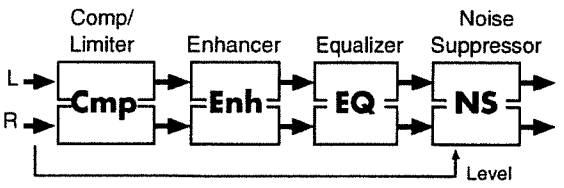
Recommended combinations of pre-amp and speaker

Pre-amp type	Speaker type
BG LEAD	BG STK1, BG STK2, MIDDLE
1959-2	BG STK1, BG STK2, MetlSTK
1959-12	BG STK1, BG STK2, MetlSTK
SLDN	BG STK1, BG STK2, MetlSTK
5150	BG STK1, BG STK2, MetlSTK
MetalLD	BG STK1, BG STK2, MetlSTK

OD-2T	BltIn 1–4
DS	BltIn 1–4
FUZZ	BltIn 1–4

14 STEREO DYNAMICS PROCESSOR

This features a comp/limiter, enhancer, 3-band equalizer, and noise suppressor, all connected in series. This is convenient as an overall effect applied during mixdown, or as a way to fix input sounds when sampling. Use the insert method with this algorithm.



COMPRESSOR/LIMITER

This effect includes a compressor, which controls inconsistencies in sound levels by suppressing high sound levels while lifting weaker signals, in addition to a limiter that prevents the signal from reaching exceedingly high levels.

Threshold [Thre] (Threshold Level)-60 – 0 dB
This sets the volume level at which the compression begins.

Attack [Atk] (Attack Time)0 – 100
This sets the time after the threshold level is crossed for compression to begin.

Release [Rele] (Release Time)0 – 100
This sets the time for compression to stop after the sound falls back under the threshold level.

Ratio [Ratio] (Compression Ratio) 1.5:1, 2:1, 4:1, 100:1
This sets the compression ratio of the source sound to the output sound.

Out Level [OutLv]-60 – +12 dB
This sets the output volume.

NOTE

When used as a limiter, set the Ratio to 100:1 with a short attack and release times. If the volume exceeds the threshold, the sound is suppressed the instant the excess input is detected.

ENHANCER

These parameters are the same as those in the EQ in Algorithm 01 (REVERB & GATE) (p.10).

Sens [Sens] (Sensitivity)0 – 100
Frequency [Freq]1.0 – 10.0 kHz
Mix Level [MixLv]0 – 100
Out Level [OutLv]0 – 100

EQ (3-Band Equalizer)

These parameters are the same as those in the EQ in Algorithm 03 (REVERB & GATE) (p.10).

Low Type [LType]SHELV, PEAK
Low Freq [LFreq]20 – 2000 Hz
Low Gain [LGain]-12 – +12 dB
Low Q [LQ] 0.3 – 10.0
Mid Freq [MFreq]200 – 8000 Hz
Mid Gain [MGain]-12 – +12 dB
Mid Q [MQ] 0.3 – 10.0
High Type [HType]SHELV, PEAK
High Freq [HFreq]1.4 – 20.0 kHz
High Gain [HGain]-12 – +12 dB
High Q [HQ] 0.3 – 10.0
Out Level [OutLv]-60 – +12 dB

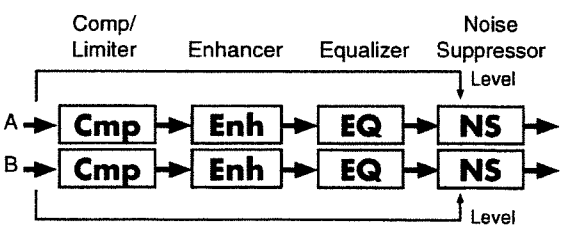
NOISE SUPPRESSOR

These parameters function the same way as those in the NOISE SUPPRESSOR in Algorithm 03 (VOCAL MULTI) (p.13).

Threshold [Thre] (Threshold Level)0 – 100
Release [Rele] (Release Time)0 – 100

15 DYNAMICS x 2

This features a comp/limiter, enhancer, 3-band equalizer, and noise suppressor, all connected in series.



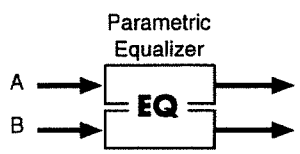
DYNAMICS PROCESSOR A/B

These parameters are the same as those in Algorithm 14 (STEREO DYNAMICS PROCCESSOR) (p.25).

Threshold [Thre] (Threshold Level)-60 – 0dB
Attack [Atk] (Attack Time)0 – 100
Release [Rele] (Release Time)0 – 100
Ratio [Ratio] (Compression Ratio)1.5:1, 2:1, 4:1, 100:1
Out Level [OutLv]-60 – +12dB
Sens [Sens] (Sensitivity)0 – 100
Frequency [Freq]1.0 – 10.0 kHz
Mix Level [MixLv]0 – 100
Out Level [OutLv]0 – 100
Low Type [LType]SHELV, PEAK
Low Freq [LFreq]20 – 2000 Hz
Low Gain [LGain]-12 – +12 dB
Low Q [LQ] 0.3 – 10.0
Mid Freq [MFreq]200 – 8000 Hz
Mid Gain [MGain]-12 – +12 dB
Mid Q [MQ] 0.3 – 10.0
High Type [HType]SHELV, PEAK
High Freq [HFreq]1.4 – 20.0 kHz
High Gain [HGain]-12 – +12 dB
High Q [HQ] 0.3 – 10.0
Out Level [OutLv]-60 – +12 dB
Threshold [Thre] (Threshold Level)0 – 100
Release [Rele] (Release Time)0 – 100

16 PARAMETRIC EQ

This is four-band parametric equalizer can be used as either two monaural equalizers or a single stereo equalizer.



LINK

These parameters are the same as those in the LINK in Algorithm 12 (Mic Simulator) (p.22).

Link Sw [Link]OFF, ON

PARAMETRIC EQ A/B

This is a four-band parametric equalizer.

In Level [In Lv] (Input Level)-60 – +12 dB
This adjusts the level before the signal passes through the equalizer.

Low Type [LType]SHELV, PEAK
This switches the Low EQ curve characteristics (peaking-type/shelving-type).

Low Freq [LFreq] (Low Frequency) 20 – 2000 Hz
This adjusts the Low EQ center frequency.

Low Gain [LGain]-12 – 12 dB
This sets the gain (boost or cut) of the equalizer's low range.

Low Q [LQ]0.3 – 10.0
This sets the "Q", or frequency range over which the sounds passing through the Low EQ are boost or cut. The higher the value set, the narrower the range.

LoMid Freq [LMFrq] (Low-Middle Frequency) 200 – 8000 Hz
This adjusts the Low-Mid EQ center frequency.

LoMid Gain [LM-G] (Low-Middle Gain) -12 – 12 dB
This sets the gain (boost or cut) of the equalizer's Low-Mid range.

LoMid Q [LMQ] (Low Middle Q)0.3 – 10.0
This sets the "Q", or frequency range over which the sounds passing through the Low-Mid EQ are boost or cut. The higher the value set, the narrower the range.

HiMid Freq [HMFrq] (High-Middle Frequency) 200 – 8000 Hz
This adjusts the High-Mid EQ center frequency.

HiMid Gain [HM-G] (High-Middle Gain) -12 – +12 dB
This sets the gain (boost or cut) of the equalizer's High-Mid range.

HiMid Q [HMQ] (Hi-Middle Q)0.3 – 10.0
This sets the "Q", or frequency range over which the sounds passing through the High-Mid EQ are boost or cut. The higher the value set, the narrower the range.

High Type [HType]SHELV, PEAK
This switches the High EQ curve characteristics (peaking-type/shelving-type).

High Freq [HFreq] (High Frequency) 1.4 – 20.0 kHz
This adjusts the High EQ center frequency.

High Gain [HGain]-12 – +12 dB
This sets the gain (boost or cut) of the equalizer's high range.

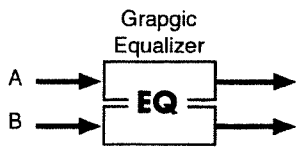
High Q [HQ]0.3 – 10.0
This sets the "Q", or frequency range over which the sounds passing through the High EQ are boost or cut. The higher the

value set, the narrower the range.

Out Level [OutLv]-60 – +12 dB
This sets the volume after the signal passes through the equalizer.

17 GRAPHIC EQ

This simulates a 10-band graphic equalizer. It can be used as either two monaural equalizers or a single stereo equalizer.



LINK

These parameters are the same as those in Lnk in Algorithm 12 (MIC SIMULATOR) (p.22).

Link Sw [Link]OFF, ON

GRAPHIC EQ A/B

This simulates a 10-band graphic equalizer.

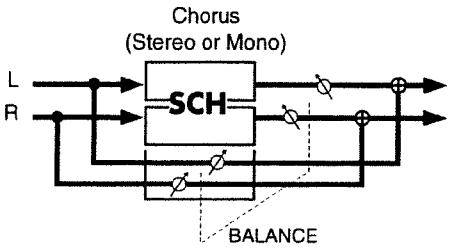
In Level [In Lv]-60 – +12 dB
This adjusts the level before the signal passes through the equalizer.

31.2 Hz [31Hz] (Gain)-12 – +12 dB
62.5 Hz [62Hz] (Gain)-12 – +12 dB
125 Hz [125Hz] (Gain)-12 – +12 dB
250 Hz [250Hz] (Gain)-12 – +12 dB
500 Hz [500Hz] (Gain)-12 – +12 dB
1kHz [1kHz] (Gain)-12 – +12 dB
2kHz [2kHz] (Gain)-12 – +12 dB
4kHz [4kHz] (Gain)-12 – +12 dB
8kHz [8kHz] (Gain)-12 – +12 dB
16kHz [16kHz] (Gain)-12 – +12 dB
This sets the gain (boost or cut) for each of the equalizer's frequencies.

Out Level [OutLv]-60 – +12 dB
This sets the volume after the signal passes through the equalizer.

18 SPACE CHORUS

This algorithm is a reproduction of Roland's SDD-320 spatial expression effect. This effect add breadth to the stereo output. Although the insert method was used to add the SDD-320's effect, you can set this algorithm so that it can be used with the send/return method as well.



SPACE CHORUS

This is an effect that gives the sound greater fullness and breadth.

Input [Input] (Input Type)MONO, ST
This setting determines whether the stereo sound input is converted to monaural output (MONO) or not (ST) (this was accomplished on the SDD-320 by connecting to different jacks).

ModeButton [Mode] (Chorus Mode Button) 1, 2, 3, 4, 1+4, 2+4, 3+4
The SDD-320 featured four mode buttons which were pressed to change the way the effect worked. This setting simulates the buttons that were pressed (setting this to "1+4" simulates the effect achieved by pressing the 1 and 4 buttons simultaneously).

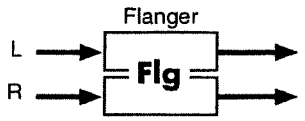
Dry/FX Bal [Bal] (Dry/FX Balance)0 – 100
This adjusts the volume balance of the source sound and the effect. With a setting of 50, the volume of the source and the SDD-320 are equally balanced. Set to 0 for source only; at 100, only the sound from the SDD-320 is output. Set this to 100 when using the send/return method.

NOTE

Setting different mode buttons subtly changes the effect. Try each mode and select the one that best suits your aims. Roland's SDD-320, released in 1979 and in production for about eight years, is an analog effect that adds spatiousness to the sound. The panel features just five buttons (OFF and four MODE buttons); the different buttons are pressed to select the effect. Although a type of chorus effect, it features a natural sound, without a lot of oscillation. Even today, this model is a big favorite of many remix artists and musicians.

19 STEREO FLANGER

This algorithm features a pair of the same flanger circuits as that in the BOSS line compact flangers connected in parallel for stereo input. This algorithm is added using the insert method.



FLANGER

This adds a particular metallic-sounding modulation (rise and fall in pitch) to the source sound.

Model Type [Model]NORM, Hi-B

This selects the model of simulated flanger.

NORM

(Normal type <BOSS BF-2>)

HI-B

(High-Band type <BOSS HF-2>) This setting raises the flanger sound one octave above that at the NORM setting.

Manual [Manu]0 - 100

This sets the center frequency for the effect. This changes the pitch of the flanger's metallic sound.

Depth [Depth]0 - 100

This sets the depth of the flanger's modulating sound.

Rate [Rate]0 - 100

This sets the rate of the swelling of the flanger sound.

Resonance [Reso]0 - 100

This sets the intensity of the flanger's effect. Take care to prevent this sound from damaging your ears or your playback equipment.

LFO Phase [Phase]0 - 180 deg

This adjusts left and right phase shift in the oscillator that produces the wavering effect. This changes the timing of the rise and fall of the modulation in the left and right channels. At 0deg (0 degrees), the left and right pitches rise and fall together. At 180 degrees, they are completely opposite.

Cross FB [X-FB] (Cross Feedback)-100 - +100

This setting takes the input sounds from the right and left channels and returns them through the opposite channel's flanger, resulting in an even stronger flanging effect. A positive setting causes the inputs to be returned in phase; a negative setting produces outputs with inverted phase. Setting the Cross Feedback value too high may result in extreme oscillation. Take care to prevent this sound from damaging your ears or your playback equipment.

Cross Mix [X-Mix]-100 - +100

This setting takes the flanging sound from each of the right and left channels and mixes it with the flanging sound of the opposite channel.

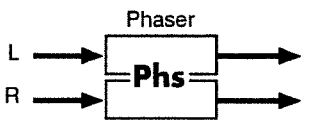
A positive setting causes the inputs to be returned in phase; a negative setting produces outputs with inverted phase.

NOTE

Cross Feedback and Cross Mix are effects that you cannot get even by actually connecting two flangers in parallel. These parameters have been added in this algorithm are intended for use in stereo. As a "hidden" technique, set a negative value for the Cross Mix effect (invert the phases) to get a stereo flanging effect that features a particular floating sensation.

20 VINTAGE PHASE

This algorithm features two analog-type phasers arranged in parallel, making the effect good for use in stereo. The sound is added to the source sound as it cycles in and out of phase, creating the distinctive phaser modulation. This algorithm is used with insert method. With the send/return method, the effect is further mixed in with the source sound, which may weaken the effect.

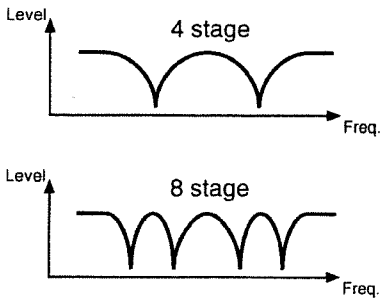


PHASER

This effect features two linked monaural phasers arranged in parallel.

ShiftMode [Shift] (Phase Shift Mode) 4STAGE, 8STAGE

This sets the number of stages in the phase shift circuit (four or eight). Setting this to eight stages increases the number of points with cancelled frequencies, which sharpens the effect.



CenterFreq [Freq] (Center frequency)0 – 100
This sets the center frequency of the phaser effect applied. The phaser effect frequency range rises as the value is increased.

Resonance [Reso]0 – 100
The more this value is increased, the stronger this distinctive effect becomes. However, setting the Resonance value too high can result in extreme oscillation. Take care to prevent this sound from damaging your ears or your playback equipment.

LFO1 Depth [L1Dep]0 – 100
LFO2 Depth [L2Dep]0 – 100
These set the depth of the swelling sound.

LFO1 Rate [L1Rat]0 – 100
LFO2 Rate [L2Rat]0 – 100
These set the modulation rate.

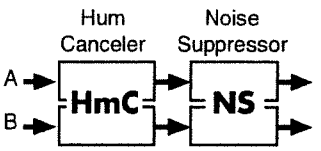
LFO1 Phase [L1Phs]NORM, INV
LFO2 Phase [L2Phs]NORM, INV
These set the phase of the modulation left and right. When set to Normal (NORM), the phase is unchanged; when inverted (INV), the phase is inverted.

NOTE

This algorithm reproduces the sound of the 2U rack-mounted phasers of the early 1980s. Two monaural single-input, single-output phasers are arranged in parallel, allowing the creation of complex modulation patterns. The LFO1 and LFO2 have different modulation rates. LFO1 creates an extremely slow modulation; that of LFO2 is faster. You can set the phase of each one independently. With a large swelling sound from LFO1 and a very short, phase inverted wavering from in LFO2, you can create a sound producing a sensation of great breadth.

21 HUM CANCELER

This removes unpleasant hum from the sound. Noise suppression is added to the output.



HUM CANCELER

Frequency [Freq]20.0 – 800.0 Hz
This sets the frequency at which the hum is removed. Hum is removed at the selected frequency as well as multiples of that frequency. Set this to the frequency of your power source.

Width [Width] (Band Width)10 – 40 %
This sets the bandwidth of the filter removing the hum.

Depth [Depth]0 – 100
This sets the depth of the filter removing the hum.

Threshold [Thre] (Threshold Level)0 – 100
This sets the level at which the Hum Canceller becomes effective. When the signal falls below the specified level, only the hum is removed the signal. At the maximum value, the hum is removed at all times, regardless of the signal level.

Lo-F Limit [LoLim] (Low Frequency Limit) THRU, 20 – 2000 Hz
This sets the minimum frequency for the Hum Canceller function. When "THRU" is selected, all frequencies that can be played back through the A-6 are processed with the Hum Canceller.

Hi-F Limit [HiLim] (High Frequency Limit) 1.0 – 20.0 kHz, THRU
This sets the maximum frequency for the Hum Canceller function. When "THRU" is selected, all frequencies that can be played back through the A-6 are processed with the Hum Canceller.

NOISE SUPPRESSOR

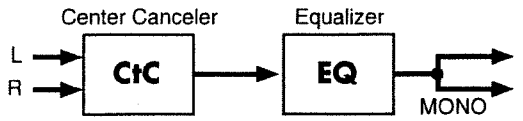
These parameters function the same way as those in the NOISE SUPPRESSOR in Algorithm 03 (VOCAL MULTI) (p.13).

Threshold [Thre] (Threshold Level)0 – 100
Release [Rele] (Release Time)0 – 100

22 CENTER CANCELER

Center Canceller is an effect that cuts out the sounds positioned in the center of the stereo field. In addition to this,

it features a 3-band parametric equalizer connected in series. Use the insert method with this algorithm.



CENTER CANCELER

This cuts sounds (such as vocals) placed in the center of the stereo field.

Position [Pos] (Cancel Position)-50 – +50
This is for finer adjustment of the cut position. This can be adjusted so that the sound is cut to a great extent.

Lo-F Limit [LoLim] (Low Frequency Limit) THRU, 20 – 2000 Hz

Hi-F Limit [HiLim] (High Frequency Limit) 1.0 – 20.0 kHz, THRU
These set the upper (Hi-F) and lower (Lo-F) limits of the frequency range to be cut. When "THRU" is selected, there is no limit on the frequencies to be cut.

NOTE

With this effect, output is converted to mono. Although you can get a similar effect by using the Anti-Phase function in Algorithm 23 (Isolator + Filter), this algorithm differs in that you can specify the upper and lower frequency limits of the effect. This is especially effective when cutting vocals, for example.

NOTE

This has no effect when the input sound is monaural. Additionally, even with stereo input, the amount of cut may differ depending on the particular recording.

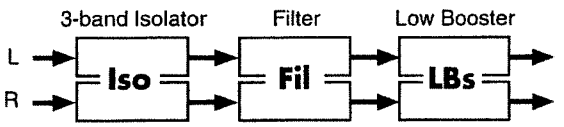
EQ (3-Band Equalizer)

These parameters are the same as those in the ENHANCER in Algorithm 03 (VOCAL MULTI) (p.13).

Low Type [LType]SHELV, PEAK
Low Freq [LFreq]20 – 2000 Hz
Low Gain [LGain]-12 – +12 dB
Low Q [LQ] 0.3 – 10.0
Mid Freq [MFreq]200 – 8000 Hz
Mid Gain [MGain]-12 – +12 dB
Mid Q [MQ] 0.3 – 10.0
High Type [HType]SHELV, PEAK
High Freq [HFreq]1.4 – 20.0 kHz
High Gain [HGain]-12 – +12 dB
High Q [HQ] 0.3 – 10.0
Out Level [OutLv]-60 – +12 dB

23 ISOLATOR & FILTER

This features a 3-band isolator, filter, and low booster that are connected in series in stereo.



ISOLATOR(3-Band Isolator)

This effect separates the input sound into three frequency ranges— High, Mid, and Low—and boosts or cuts each range.

Level High [Hi Lv]-60 – +4 dB
Level Mid [MidLv] -60 – +4dB
Level Low [LowLv]-60 – +4 dB
Each frequency range—High, Mid, or Low—can be boost or cut. At -60 dB, the sound becomes inaudible. A level of 0 dB is equivalent to the input level of the sound.

AntiPhs Md [PhsMd] (Anti-Phase Middle Switch) OFF, ON

AntiPhs Md Level [PhsML] (Anti-Phase Middel Level)0 – 100

AntiPhs Lo [PhsLo] (Anti-Phase Low Switch) OFF, ON

AntiPhs Lo Level [PhsLL] (Anti-Phase Low Level) 0 – 100
This turns the Anti-Phase function on and off and sets level settings for the low and mid frequency ranges. When turned on, the phase from the opposite stereo channel is inverted and added to the signal. Depending on the level settings, you can achieve an effect that sounds as if only a particular part is being boosted. (This is effective only in stereo.)

NOTE

Functions featured in machines consider standard equipment for remix artists and pro DJs have been carefully analyzed and reproduced. Ordinary equalizers allow some sound to persist even when the gain is turned down all the way. In contrast, the Isolator completely cuts off the sound. By switching the effect on and off, and by changing levels in real time, you can have the sound of

specific parts appear and disappear.

FILTER

These parameters are the same as those in the ENHANCER in Algorithm 02 (EZ DELAY) (p.12).

Type [Type] (Filter Type)LPF, BPF, HPF, NOTCH

Slope(oct) [Slope]-12, -24 dB

CutOffFreq [Freq] (Cutoff Frequency)0 – 100

Resonance [Reso]0 – 100

Gain [Gain] 0 – 24 dB

LOW BOOST

This adds emphasis to the low end to create a fuller bass sound.

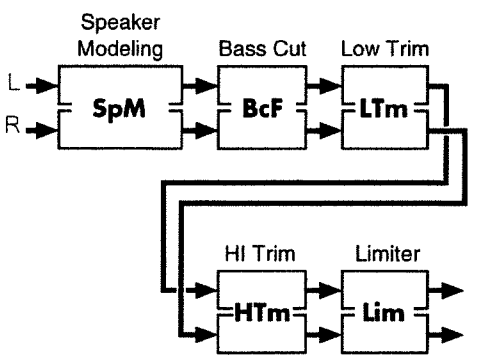
BoostLevel [Boost] 0 – 100

Increasing this value gives you a heavier low end (this effect may be hard to distinguish with certain Isolator and filter settings).

24 SPEAKER MODELING

You can model the acoustical characteristics of a variety of speakers, ranging from high-level professional monitor speakers used in studios worldwide, to the speakers of small televisions or portable radios.

Speaker modeling has been calibrated so that the optimal effect will be obtained when Roland DS-90 powered monitors are connected digitally. If you are using other speakers, you may not be able to obtain the desired effect.



SPEAKER MODELING

Model [Model] (Modeling Speaker)
THRU, FLAT, Pwd.BLK, Pwd.E-B, Pwd.MAC, SmlCUBE, Wh.CONE, WhTISUE, RADIO, SmallTV, BoomBox, BoomLoB, Pwd.SR, StackSR

Select the speaker whose characteristics will be simulated (modeled).

THRU

Modeling will not be applied, and the sound will be output without change. Use this as a comparison with the speaker-modeled sounds.

FLAT

Modeling is used to compensate the DS-90, to produce an even flatter sound with a wider range.

Pwd.BLK

A widely used model of powered monitors (two-way type, with a woofer diameter of 170 mm (6-1/2 inches)).

Pwd.E-B

Powered monitors characterized by a bright tone.

Pwd.MAC

Powered monitors characterized by an extended low-frequency response.

SmlCUBE

Small full-range speakers widely used in recording studios.

Wh.CONE

Sealed enclosure two-way speakers known for their white woofers and widely used in recording studios.

WhTISUE

A more mild sound, with tissue paper affixed over the tweeters of the above "White Cone" speakers.

RADIO

Small pocket-type radio.

SmallTV

Speakers built into a 14 inch size television.

BoomBox

Radio cassette recorder.

BoomLoB

Radio cassette recorder with the Low Boost switched on.

Pwd.SR

American powerd speaker widely used in concert, etc..

StackSR

A sound of the above "Pwd.SR" speakers with sub woofer.

OutSP [OutSP] (Output Speaker) DS-90, MS-50, SST-151, SST-251, 151+351, 251+351

Select the type of speakers that was actually used. When either "151+351" or "251+351" is selected for "OUT SP," use parallel connections for chaining two speakers.

DS-90

Roland Powered Monitor DS-90

MS-50

Roland Monitor Speaker MS-50

SST-151

Roland Speaker System SST-151

SST-251

Roland Speaker System SST-251

151+351

Roland Sub Woofer SSW-351 with SST-151

251+351

Roland Sub Woofer SSW-351 with SST-251

Phase [Phase]NORM, INV

Specifies the phase of the speakers.

NRM: Same phase as the input.

INV: Opposite phase of the input.

BASS CUT FILTER

This removes unwanted low-frequency components, such as pop noise.

Frequency [Freq]THRU, 20 - 2000 Hz

Adjusts the cutoff frequency of the bass-cut filter.

LOW FREQUENCY TRIM

Gain [Gain]-12 - 12 dB

For low frequency trimmer, adjusts the gain (amount of boost/cut).

Frequency [Freq]20 - 2000 Hz

Set the center frequency of low frequency trimmer.

HIGH FREQUENCY TRIM

Gain [Gain]-12 - 12 dB

For high frequency trimmer, adjusts the gain (amount of boost/cut).

Frequency [Freq]1.0 - 20.0 kHz

Set the center frequency of high frequency trimmer.

LIMITER

This effect limits excessive output levels.

Threshold [Thr]-60 - 0 dB

Specifies the level at which the limiter will begin to operate.

Release [Rele]0 - 100

Adjusts the time from when the input level falls below the threshold level until the limiter ceases to operate.

Out Level [OutLv]-60 - 24 dB

Adjusts the volume level of the sound that has passed through the limiter.

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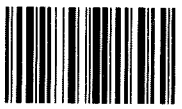

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Roland