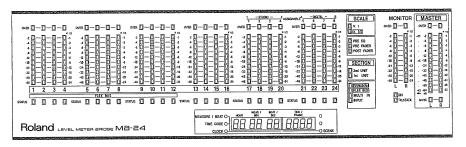


LEVEL METER BRIDGE

## OWNER'S MANUAL

Before using this unit, carefully read the sections entitled: "IMPORTANT SAFETY INSTRUCTIONS" (p. 2), "USING THE UNIT SAFELY" (p. 3), and "IMPORTANT NOTES" (p. 6). These sections provide important information concerning the proper operation of the unit. Additionally, in order to feel assured that you have gained a good grasp of every feature provided by your new unit, Owner's manual should be read in its entirety. The manual should be saved and kept on hand as a convenient reference.



### Main Features

- When connected with compatible devices, such as the Roland VM-C7100 or VM-C7200, the MB-24 provides input/output level metering, and the display of function data, allowing easy viewing even from a distance.
- By attaching the included rack-mount adapters, the MB-24 can be installed into your system rack.
- Eight-segment LED indicators are used to display time code, measures, time, and scene numbers.
- \* All product names mentioned in this document are trademarks or registered trademarks of their respective owners.

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Roland international website: www.rolandcorp.com/ Roland US website: www.rolandus.com/







ATTENTION: RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL



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.
- 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.
- 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.
- The product should be located so that its location or position does not interfere with its proper ventilation.
- The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
- 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.
- 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  $\textcircled{\oplus}$  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.

### USINGTHEUNITSAFEN

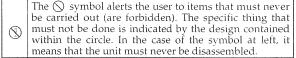
#### INSTRUCTIONS FOR THE PREVENTION OF FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS

#### About AWARNING and ACAUTION Notices

<b>∆WARNING</b>	Used for instructions intended to alert the user to the risk of death or severe injury should the unit be used improperly.		
 <b>⚠</b> 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 instruct or warnings. The specific meaning of the symbol determined by the design contained within triangle. In the case of the symbol at left, it is used general cautions, warnings, or alerts to danger.
---



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 powercord 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.



#### **A** CAUTION

 Always grasp only the plug on the powersupply 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 plugs 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 (p. 12).



 Whenever you suspect the possibility of lightning in your area, pull the plug on the power cord out of the outlet.



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

For the USA -

-For EU Countries -

## 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.

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## IMPORTANT NOTES

In addition to the items listed under "IMPORTANT SAFETY INSTRUCTIONS" and "USING THE UNIT SAFELY" on pages 2 and 3, please read and observe the following:

## Power Supply

- Do not use this unit on the same power circuit with any device that will generate line noise (such as an electric motor or variable lighting system).
- 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

- 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**

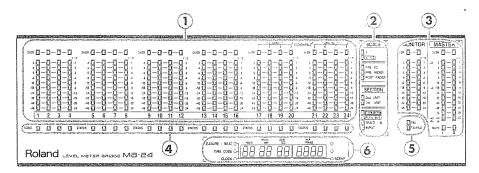
- Use a reasonable amount of care when using the unit's buttons, sliders, or other controls; and when using its jacks and connectors. Rough handling can lead to malfunctions.
- Never strike or apply strong pressure to the display.
- When connecting / disconnecting all cables, grasp the connector itself—never 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.

# Caution on placement and transportation (Important!)

 Do not lift the MB-24 while it is placed on a mixer or similar device. Doing so can damage the MB-24 or mixer.

## Front and Rear Panels

## Front Panel



### Level Meter Display (Channels 1–24)

This section indicates the INPUT/MULTI IN/FLEX BUS/MULTI OUT levels according to the settings of the mixing console. Level changes are displayed in real time.

- If the level exceeds the value specified by the mixing console's "Over Range" setting, the OVER indicator will light.
- You can have the indicator representing the maximum level remain lit (Peak Hold Time; p. 13).
- If you have selected FLEX BUS on the mixing console, the levels will be shown by the channel 1–12 level meters.
- If you have selected MULTI OUT on the mixing console, the level meters for channels 17–24 will show the output levels from the assignable outputs.

## **2** Function Display

This area indicates the SCALE/PRE EQ/PRE FADER/POST FADER/SECTION status of the mixing console. For an explanation of each item, refer to the owner's manual for your mixing console.

## **3** MONITOR/MASTER (Monitor Level/Master Level)

This area corresponds to the monitor and master level indicators of the mixing console.

#### **4** STATUS Indicators

These indicators show the status of each channel as set on the mixing console.

#### 5 DIM/TALKBACK

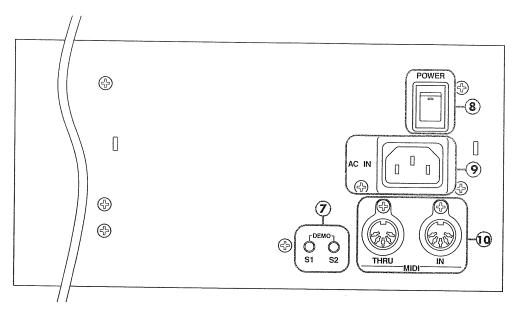
These indicators show the status of the DIM and TALKBACK settings on the mixing console.

### Front and Rear Panels

## **6** Display

Shows the measure/beat/tick, time code, time, or scene number. The choice as to what to have displayed can be made from the mixing console.

## Rear Panel



## **7** [S1]/[S2] button

These switches are used to set the peak hold time, to switch the MIDI receive channel, and to select the demo display.

## 8 POWER Switch

This turns the power of the MB-24 on/off.

## 9 AC IN jack

Connect the supplied power cord to this connector.

## 10 MIDI IN/THRU (MIDI Connectors)

Connect MIDI IN to an MB-24 compatible device such as the VM-C7100/VM-C7200.

MIDI messages received at MIDI IN will be re-transmitted without change from MIDI THRU. Use the MIDI THRU connector to transmit MIDI messages from the mixing console to other MIDI devices, such as a sound module or sequencer.

## MEMO

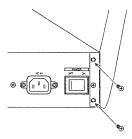
When the power is turned on, channel 16 will be selected.

## Making the Connections

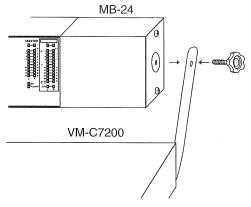
# Connecting the mixing console (VM-C7100/VM-C7200) to the MB-24

## Connecting the VM-C7200 and the MB-24

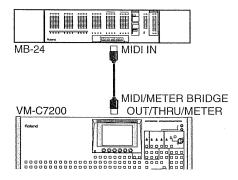
Attach the arms to the VM-C7200 using screws belong to the VM-C7200.



**2** Attach the arms to both sides of the MB-24.



Connect the devices as shown in the diagram.



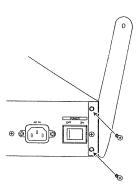


To prevent malfunction and/or damage to speakers or other devices, always turn down the volume, and turn off the power on all devices before making any connections.

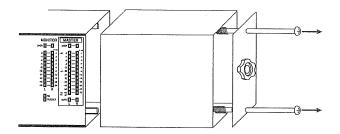
## **Making the Connections**

## ■ Connecting the VM-C7100 and the MB-24

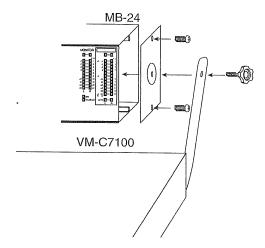
Attach the arms to the VM-C7100 using screws belong to the VM-C7100.



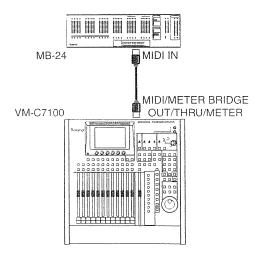
Remove the cases from both sides of the MB-24.



Attach the arms to both sides of the MB-24 as shown in the diagram.



Connect the devices as shown in the diagram.

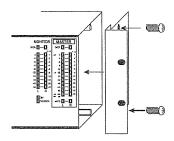




To prevent malfunction and/or damage to speakers or other devices, always turn down the volume, and turn off the power on all devices before making any connections.

# Connecting the mixing processor (VM-7100/VM-7200) and the MB-24

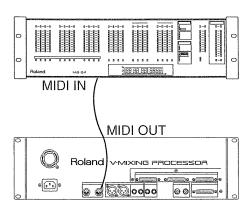
If you wish to install the MB-24 in your system rack, detach the case from the two sides of the MB-24, and attach the rackmount hardware.





If you will not be installing the MB-24 in a system rack, this step is not necessary.

**2** Connect the devices as shown in the diagram.





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.

## Turning the Power On/Off

## Turning the power on

Before turning on the power, make sure that all devices are connected correctly.

- Turn on the power of the MB-24.

  After all LED indicators light, only the "." in the display will light. The function area will show the settings that have been made by the mixing console.
- Turn on the power of the mixing console and mixing processor.



Once the connections have been completed (p. 9), 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.



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.

## Turning off the power

- Turn off the power of the mixing console and mixing processor.
- **2** Turn off the power of the MB-24.

## Operation

## **Setting [S1]/[S2]**

## ■ Setting the peak hold time

Peak hold time is a function that makes it easier for you to check the maximum values (peaks) of the level. The indicator at the peak position will remain lit for the length of time that you specify. This is convenient when you are adjusting the levels.

- Turn on the power.
- Press [S1] once.
  The level meters will indicate "PEAK," and the display will show the peak hold time (0 7, Cont).
- Continue pressing [S2] until the desired peak hold time appears. This can be set in the range of 1 7 seconds. If you want the indicator to remain lit at the peak position, select "Cont." If you do not need to see the peak location, select "0."
- Press [S1] once again to finalize the peak hold time.

## ■ Changing the MIDI receive channel

- Turn on the power.
- Press [S1] twice. The level meter will indicate "MIDIch," and the display will show the MIDI channel number (1 16).
- Continue pressing [S2] until the desired channel number appears.
- Press [S1] once again to finalize the channel number.

## Using the demo display

- Simultaneously press [S1] and [S2] to put the MB-24 in demo display mode.
- To exit demo display mode, simultaneously press [S1] and [S2] once again.

## MEMO

If the peak hold time has been set to "Cont," you can turn off the peak location indicator by selecting a setting other than "Cont," or by turning the power off and on again.



When the power is turned off, the peak hold time setting will return to the default setting of "3." Make this setting if you want to temporarily change the peak hold time.



The MIDI channel setting will return to the default value of "16" when the power is turned off. You can make this setting when you wish to temporarily change the MIDI receive channel.

## Specifications

## MB-24:Level Meter Bridge

#### **Jacks and Connectors**

MIDI Connectros (IN/THRU) AC IN Jack

#### **Power Supply**

AC 117 V, AC 230 V or AC 240 V

#### **Power Consumption**

8.8 W

#### **Dimensions**

700 (W) x 50 (D) x 110 (H) mm 27-9/16 (W) x 2 (D) x 4-3/8 (H) inches

#### Weight

2.0 kg 4 lbs 7 oz

#### **Accesories**

MIDI cable (1m)
Arms (Attachment for Roland VM-C7200/VM-C7100)
Rack Mount Angles
Owner's Manual



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

### LEVEL METER BRIDGE

Model MB-24

## **MIDI Implementation Chart**

Date: May 20, 1999

Version: 1.00

	Function	Transmitted	Recognized	Remarks		
Basic Channel	Default Changed	X X	X X			
Mode	Default Messages Altered	Mode 3 X	Mode 3 X			
Note Number :	True Voice	X ********	X			
Velocity	Note On Note Off	X X	O *1			
After Touch	Key's Channel's	X X	X			
Pitch Ben	d	X	X			
Control Change		X	X			
Program Change	: True Number	X *******	X			
System E	xclusive	×	X			
System Common	: Song Position : Song Select : Tune Request	X X X	X X X			
System Real Time	: Clock e : Commands	X X	X			
Aux Messages	: All Sound Off : Reset All Controllers : Local On/Off : All Notes Off : Active Sensing : System Reset	X X X X O *2	X X X X O X	·		
Notes		* 1 Receives the information from the units which are compatible with the MB-24.  * 2 Display will be reset if the interval of the signals exceed 500 ms.				
	ULON DOLV	Act of Committee and Market				

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

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

O : Yes X : No

#### Information

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



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

#### REUNION

Maison FO - YAM Marcel 25 Rue Jules MermanZL Chaudron - BPT9 97491 te Clotilde REUNION TEL, 28 29 to

#### SOUTH AFRICA

That Other Music Shop 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



#### 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

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

#### **INDONESIA**

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

#### **KOREA**

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

#### MALAYSIA

Bentley Music SDN BHD 140 & 142, Jalan Bukit Bintang 55100 Kuala Lumpur, MALAYSIA TEL: (03) 2443333

#### PHILIPPINES

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

#### **SINGAPORE**

Swee Lee Company 150 Sims Drive, SINGAPORE 387381 TEL: 748-1669

### CRISTOFORI MUSIC PTE

Blk 3014, Bedok Industrial Park F #02-2148, SINGAPORE 489980 TEL: 243 9555

#### TAIWAN

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

#### THAILAND

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

#### VIETNAM

Saigon Music 138 Tran Quang Khai St., District 1 Ho chi minh City VIETNAM TEL: (8) 844-4068

#### AUSTRALIA/ **NEW ZEALAND**

#### **AUSTRALIA**

Roland Corporation Australia Ptv. 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. Eder Auckland 3, NEW ZEALAND TEL: (09) 3098 715

#### CENTRAL/LATIN **AMERICA**

#### ARGENTINA

Instrumentos Musicales S.A. Florida 656 2nd Floor Office Number 206A Buenos Aires ARGENTINA, CP1005 TEL: (54-11) 4- 393-6057

#### BRAZIL

Roland Brasil Ltda. R. Coronel Octaviano da Silveira 203 05522-010 Sao Paulo BRAZIL TEL: (011) 843 9377

Comercial Fancy S.A. Avenida Rancagua #0330 Providencia Santiago, CHILE TEL: 56-2-373-9100

#### **EL SALVADOR**

OMNI MUSIC 75 Avenida Notre v Alameda Juan Pablo 2 No. 4010 San Salvador, EL SALVADOR TEL: (503) 262-0788

#### **MEXICO**

Casa Veerkamp, s.a. de c.v. Av. Toluca No. 323 Col. Olivar de los Padres 01780 Mexico D.F. MEXICO TEL: (525) 668 04 80

La Casa Wagner de Guadalajara s.a. de c.v. Av. Corona No. 202 S.J. Guadalajara, Jalisco Mexico C.P.44100 MEXICO TEL: (03) 613 1414

#### PANAMA

Productos Superiores, S.A. Apartado 655 - Panama 1 REP. DE PANAMA TEL: (507) 270-2200

#### URUGUAY

Todo Musica Cuareim 1488, Montevideo. URUGUAY TEL: 5982-924-2335

#### **VENEZUELA**

Musicland Digital C.A. Av. Francisco de Miranda. Centro Parque de Cristai, Nivel C2 Local 20 Caracas VENEZUELA TEL: (02) 285 9218

### EUROPE

#### **AUSTRIA**

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

#### BELGIUM/HOLLAND/ LUXEMBOURG

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

#### DENMARK

Roland Scandinavia A/S Langebrogade 6 Post Box 1937 DK-1023 Copenhagen K. DENMARK TEL: 32 95 3111

#### FRANCE

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

#### **FINLAND**

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