

10 CHANNEL MIXER M-10MX

**24 bit 96kHz
DIGITAL OUTPUT**

Owner's Manual

Before using this unit, carefully read the sections entitled:

“USING THE UNIT SAFELY” (p. 13–p. 14) and “IMPORTANT NOTES” (p. 15).

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.

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Attaching the Ferrite Core

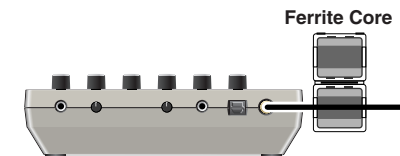
You must attach the ferrite core before using the M-10MX.

If you connect the M-10MX's coaxial jack to your digital device, you must attach the included ferrite core.

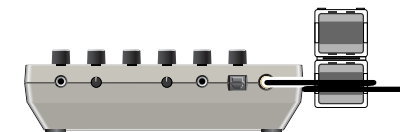
This is for the purpose of preventing electromagnetic noise; do not remove it.

1. Attach the ferrite core to the coaxial cable.

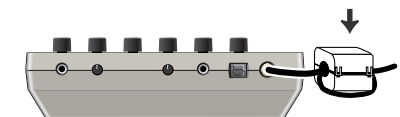
* You must attach it near the M-10MX.



2. Wrap the coaxial cable around the ferrite core; one turn is enough.



3. Press the halves together until they click shut.



* Be careful not to pinch your fingers when attaching the ferrite core.

* Do not damage the cable by pinching it excessively with the ferrite core.

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.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

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.

Panel Descriptions

SENS Knobs

These knobs adjust the input sensitivity, allowing you to set the input level so that the sound of each channel can be mixed while avoiding noise or distortion. Turning the SENS knob toward the right will increase the sensitivity (increase the input level), and turning it toward the left will decrease the sensitivity (decrease the input level).

If you've connected a mic to phone jacks 1-6, turn the SENS knob toward the right near the "MIC" position.

If you've connected a line-level device such as a keyboard, turn the SENS knob toward the left near the "LINE" position.

* Each SENS knob simultaneously affects the L/R inputs for a pair of channels.

Channel Volume Knobs

These knobs adjust the volume of each channel. Normally, you should use these in the marked region.



* Each channel volume knob simultaneously affects the L/R inputs for a pair of channels.

Plug-in Power Compatible INPUT Jack (stereo mini jack)

This is an input jack for connecting a plug-in power compatible stereo mic. The sound from the connected mic is input to channels 1/2.

If you connect a device to the rear panel's INPUT 1/2 jacks, both sounds will be mixed.

* A mono mic cannot be used.

* The SENS 1/2 knob does not affect the input from this jack.

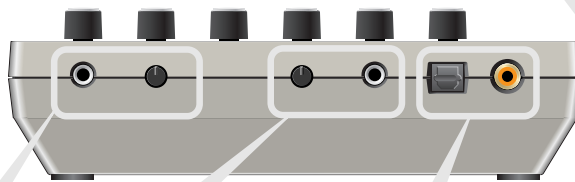
VOLUME Knob

This knob adjusts the volume of the input from the connected mic. To minimize the volume, turn this knob all the way to the left.

OVERLOAD Indicator

This indicator will light if the mixed signal is too loud. If it lights frequently, turn the SENS knob of each channel toward the left to reduce the input level (p. 9).

* This indicator will light 6 dB before clipping level (the level at which clipping begins).



Headphone Jack (stereo mini jack)

You can connect stereo headphones to this jack.

VOLUME Knob

This knob adjusts the volume of the headphones.

* The volume of the headphones is not affected by the MAIN volume knob.

DIGITAL OUTPUT Connector/Jack

These jacks digitally output the same audio signal as the OUTPUT jacks.

Both optical and coaxial jacks are provided, and both can be used simultaneously.

* No signal will be output from these jacks if the POWER SAVE switch is on.

POWER Switch

This turns the power on/off. Set this switch to "DC IN" if you're using the AC adaptor, or to "BATT" if you're using batteries; the power will turn on, and the POWER indicator will light.

DC IN (AC Adaptor) Jack

Connect the supplied AC adaptor to this jack.

POWER Indicator

This will light when the power is turned on.

* If you're operating on batteries, the brightness of this indicator will show the state of the batteries. If the indicator becomes dim, you need to replace the batteries.

MAIN Volume Knob

This knob adjusts the overall volume for the mixed inputs of each channel.

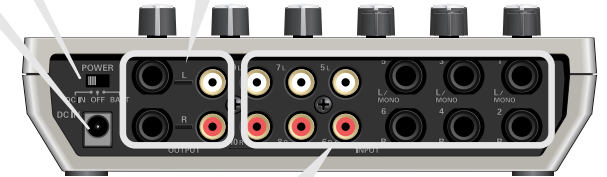
* The output level from the headphone jack will not be affected even if you use the MAIN volume knob to lower the volume.

OUTPUT Jacks (TRS phone/RCA pin jacks)

These jacks output the mixed signal.

Both phone jacks and RCA pin jacks are provided, and you can connect to both jacks and send the output to separate devices. These are TRS jacks, which allow you to use stereo phone plugs for a balanced audio connection, or use mono phone plug cables for an unbalanced connection.

* If you're using a balanced connection, check to make sure that the input jacks of your equipment are wired as shown below. Be aware that on some equipment, the HOT and COLD are reversed.



INPUT Jacks (phone jacks, RCA pin jacks)

Channels 1-4, 5, 6 (phone jacks)

These jacks are suitable for use with electronic musical instruments or mics. If you're connecting a mic or other monaural device, use the L (MONO) jack.

Channels 5, 6, 7-10 (RCA pin jacks)

These jacks are suitable for connecting desktop media production devices or audio equipment such as CD/MD players. Channels 5/6 provide both phone jacks and RCA pin jacks, which can be used simultaneously.

SAMPLE RATE Switch

Allows you to select 44.1, 48, or 96 kHz as the sampling frequency (sample rate) of the digital audio signal sent from DIGITAL OUTPUT.



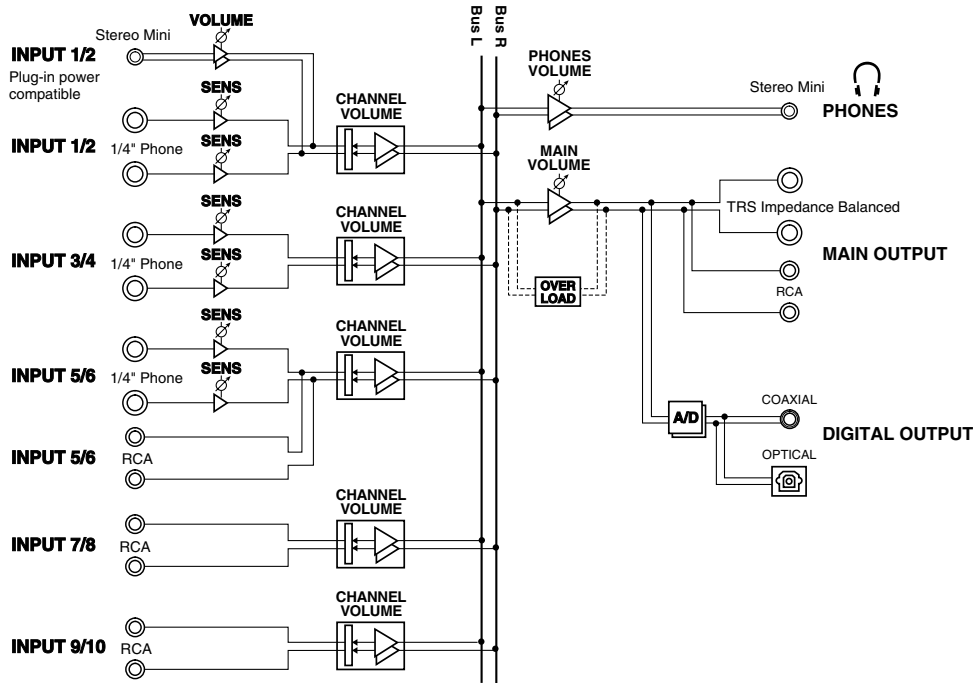
POWER SAVE Switch

This turns the "power save" function on/off.

If you turn this function on, the digital output from the DIGITAL OUTPUT connector will be turned off (no output), reducing the power consumption.



Block Diagram



Main Features

The M-10MX is a lightweight and compact mixer providing 10 channels of input (5 stereo channels), and is an ideal choice for multimedia applications. In addition to covering conventional mixing needs, it can also be used for audio mixing when editing videos.

A Rich Array of Input/Output Jacks

Phone jacks and RCA pin jacks are provided for input, allowing you to connect mics, electronic instruments, or any other type of audio device. Plug-in powered mics are also supported by a special input jack (stereo mini).

Two-way Power Supply

The M-10MX can be powered by the supplied AC adaptor or by batteries. A switch lets you select the desired type of power supply.

Digital Output

Two types of digital output connectors (optical and coaxial) are also provided. These output the mixed sound as 24-bit, 96 kHz digital audio. Additionally, either 44.1, 48, or 96 kHz can be selected as the sampling frequency.

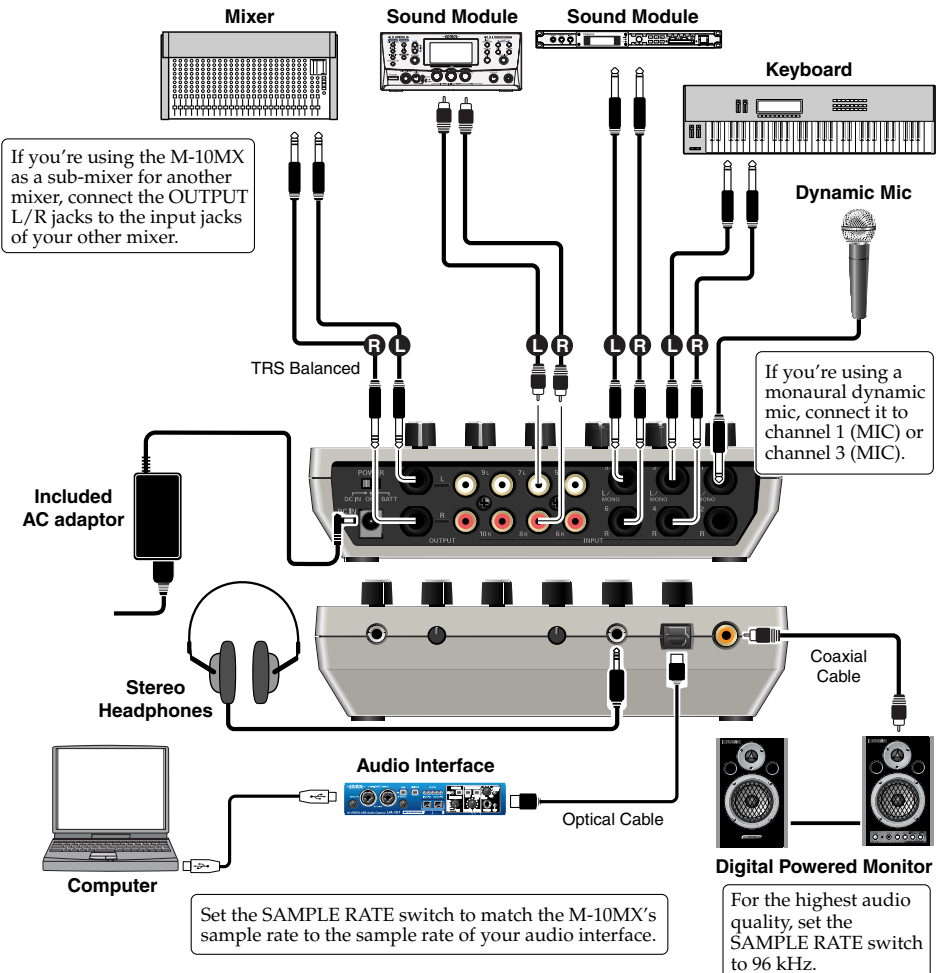
Headphone Jack

A headphone jack is provided for convenient practicing on your own or at night.

Connections

Example 1) Mixing and Switching Sound for DTMP

* "DTMP" (Desk-Top Media Production) refers to setups that let you use your computer in new ways to enjoy video and music.

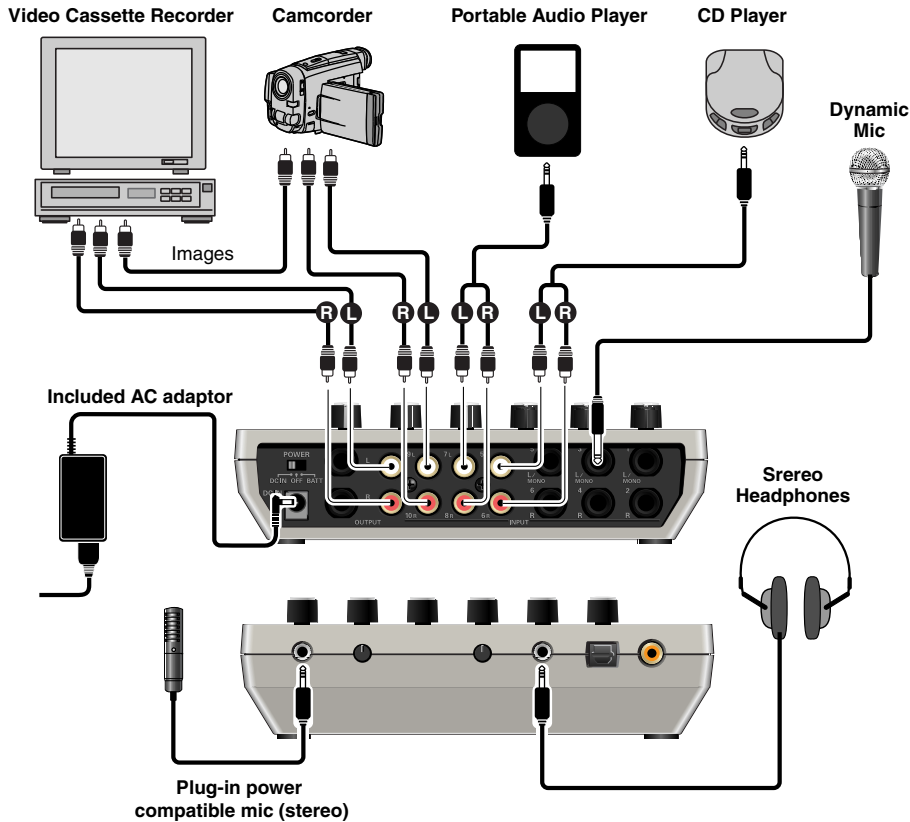


* You must minimize the volume of the MAIN and the your digital powered monitor speakers before you turn the M-10MX's power on or off.

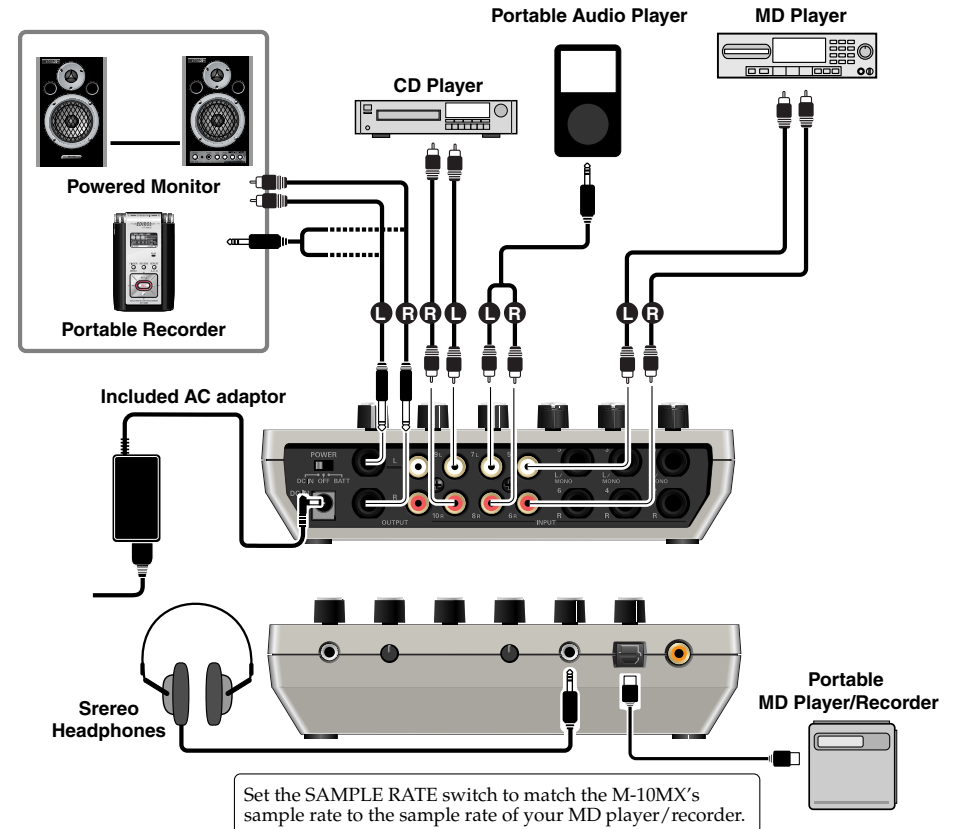
Example 2) Editing Sound for Video

Using a variety of audio sources for video post-production

* Post-production often involves the process of adding a variety of audio sources such as music, sound effects, and narration to previously recorded video.



Example 3) Audio Equipment Mixing



Notes

- * 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.
- * When connection cables with resistors are used, the volume level of equipment connected to the inputs (INPUT) may be low. If this happens, use connection cables that do not contain resistors.

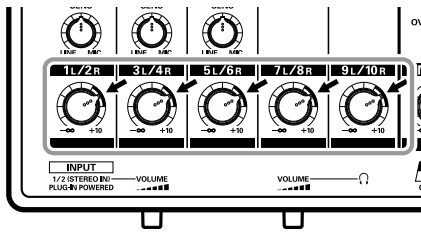
- * Howling could be produced depending on the location of microphones relative to speakers. This can be remedied by:
 1. Changing the orientation of the microphone(s).
 2. Relocating microphone(s) at a greater distance from speakers.
 3. Lowering volume levels.

Operation

NOTE

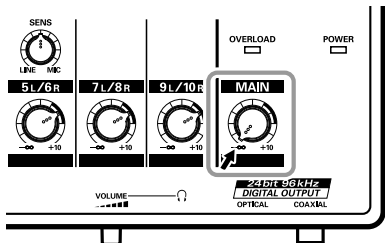
Once the connections have been completed (p. 6– p. 8), turn on power to your various devices in the order specified. By turning on devices in the wrong order, you risk causing malfunction and/or damage to speakers and other devices.

1. Turn off the power of the M-10MX and of all the equipment you'll be connecting.
2. Connect your equipment.
3. If you've connected a mic to channels 1L/2R, 3L/4R, or 5L/6R, turn the SENS knob of that channel to the "MIC" position.
If you've connected a device other than a mic, turn the SENS knob to the "LINE" position.
4. Set the channel volume knobs in the marked region.



5. Set the MAIN volume knob to the "∞" position.

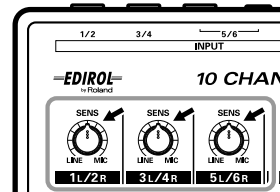
* Minimize the MAIN volume and the headphones volume before you turn on the power. You may notice some sound when you turn on the power even if the volume is minimized, but this is not a malfunction.



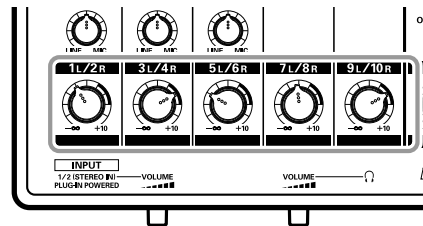
6. Power up the equipment connected to the various jacks.
7. Set the power switch to "DC IN" or "BATT."
8. Slowly turn the MAIN volume toward the right to an appropriate position.
9. Use the SENS knobs to adjust the volume of channels 1–6.

* Minimize the volume of channels you're not using.

* If you adjust the sensitivity so that the OVERLOAD indicator flickers briefly when the loudest input signal is received, you'll be able to mix with the least amount of noise or distortion.



10. Use the channel volume knobs to adjust the volume balance of the channels.



11. Use the MAIN volume knob to adjust the overall volume.

Installing Batteries

Normally, the supplied AC power adaptor is used to power the M-10MX.

However, you can also install commercially available AA batteries and operate on battery power.

1. Turn the POWER switch "OFF."

* Use four AA batteries.

2. Turn the unit over.

* When turning the unit upside-down, get a bunch of newspapers or magazines, and place them under the four corners or at both ends to prevent damage to the controls. Also, you should try to orient the unit so no controls get damaged.

* When turning the unit upside-down, handle with care to avoid dropping it, or allowing it to fall or tip over.

* Don't mix new batteries with partially used batteries, and don't mix batteries of differing types. Doing so can cause battery leakage or other problems.

* Make sure to observe the correct polarity (check the +/- markings) when installing the batteries.

5. Replace the battery cover.

MEMO

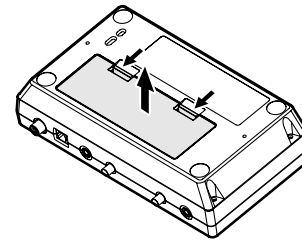
If you are running on battery power and the batteries have run low, the POWER indicator will become dim. If this occurs, replace the batteries as soon as possible.

TIP

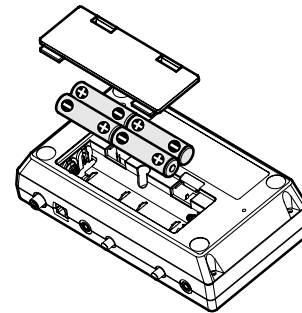
If you are using batteries and do not need to use the digital output, turn on the POWER SAVE switch (p. 4).

This will reduce the power consumption, allowing a longer operating life for the batteries.

3. Remove the battery cover.



4. Insert the batteries into the battery compartment as shown in the illustration.



Troubleshooting

Cause	Response
The sound from the device connected to an INPUT jack or OUTPUT jack is not loud enough	
Could you be using a cable that has a built-in resistor?	Use a cable that does not contain a built-in resistor.
No signal is sent from DIGITAL OUTPUT	
Could the POWER SAVE switch (p. 4) be "ON"?	If the "Power Save" function is on, the digital audio signal will not be sent from the DIGITAL OUTPUT jack in order to reduce power consumption.
Power does not turn on (POWER indicator will not light)	
Is the POWER switch set correctly?	Set this to "DC IN" if you're using the AC adaptor, or to "BATT" if you're using batteries.
Are the batteries installed correctly?	Check the polarity of the batteries.
Is the AC adaptor connected correctly?	Make sure that the AC adaptor plug is inserted all the way.
Could the batteries be exhausted?	Install fresh batteries.
Sound is distorted or crackly	
Is the volume adjusted appropriately?	Use the SENS knobs, channel volume knobs, and MAIN volume knob to adjust the volume appropriately (p. 9).
Too much noise in the sound	
Have you minimized the volume of the channels you're not using?	If you're not using a channel, turn its SENS knob and channel volume knob to the minimum position.
The sound from a mic connected to the plug-in power compatible INPUT jack is heard only from the L side	
Have you connected a stereo mic?	The plug-in power compatible INPUT jack is designed for the use of stereo input. It cannot be used with a monaural mic.
Hum (a buzzing noise) is heard	
If you've connected two or more devices together, the ground path may form a loop, picking up noise that you will hear as hum.	<ul style="list-style-type: none"> Operate the mixer on batteries. If you're using monitors that have digital input (e.g., MA-15D or the DS series), make connections using optical cables.

Main Specifications

M-10MX: 10 channel (5 stereo) Mixer	
Number of Channels	10 in 2 out
AD Conversion	Sample Rate: 44.1/48.0/96.0 kHz, Signal Processing: 24 bits
Frequency Response	96.0 kHz: 20 Hz to 40 kHz (+1/-2 dB)
	48.0 kHz: 20 Hz to 22 kHz (+1/-2 dB)
	44.1 kHz: 20 Hz to 20 kHz (+1/-2 dB)
Residual Noise Level	-86 dBu (IHF-A, typ.)
Nominal Input Level:	Input Jacks 1-6: -50 to +4 dBu Input Jacks 1-2: -40 to +10 dBu Input Jacks 5-10: -2 dBu <i>* Maximum input level: Nominal input level + 12 dB</i>
Nominal Output Level	-2 dBu <i>* Maximum output level: +10 dBu</i>
Connectors	Input Jacks 1-6 (1/4 inch phone type, unbalanced) Input Jacks 1-2 (Stereo miniature type, plug-in powered) Input Jacks 5-10 (RCA pin type) Main Output Jacks L, R (1/4 inch TRS phone type (impedance balanced), RCA pin type) DC IN (AC adaptor) Jack Digital Output Connectors (Optical type, Coaxial type) Headphone Jack (Stereo miniature type)
Power Supply	DC 9 V (AC adaptor), Alkaline dry battery LR6 (AA) type x 4
Current Draw	250 mA <i>* Expected battery life under continuous use: Alkaline: 6 hours (Power save mode: On), 4 hours (Power save mode: Off) These figures will vary depending on the actual conditions of use.</i>
Dimensions	181.2 (W) x 107.5 (D) x 54.0 (H) mm 7-3/16 (W) x 4-1/4 (D) x 2-1/8 (H) inches
Weight	393 g / 14 oz
Accessories	Owner's Manual, AC Adaptor, Ferrite Core

* 0 dBu = 0.775 V rms

NOTE

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

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.

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 modify in any way) the unit or its AC adaptor.
- Do not attempt to repair the unit, or replace parts within it (except when this manual provides specific instructions directing you to do so). Refer all servicing to your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page.
- Never use or store the unit in places that are:
 - Subject to temperature extremes (e.g., direct sunlight in an enclosed vehicle, near a heating duct, on top of heat-generating equipment); or are
 - Damp (e.g., baths, washrooms, on wet floors); or are
 - Humid; or are
 - Exposed to rain; or are
 - Dusty; or are
 - Subject to high levels of vibration.
- 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.
- Be sure to use only the AC adaptor supplied with the unit. Also, make sure the line voltage at the installation matches the input voltage specified on the AC adaptor's body. Other AC adaptors may use a different polarity, or be designed for a different voltage, so their use could result in damage, malfunction, or electric shock.
- Use only the attached power-supply cord. Also, the supplied power cord must not be used with any other device.

⚠ WARNING

- Do not excessively twist or bend the power cord, nor place heavy objects on it. Doing so can damage the cord, producing severed elements and short circuits. Damaged cords are fire and shock hazards!
- This unit, 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 immediately stop using the unit, and consult an audiologist.
- Do not allow any objects (e.g., flammable material, coins, pins) or liquids of any kind (water, soft drinks, etc.) to penetrate the unit.
- Immediately turn the power off, remove the AC adaptor from the outlet, and request servicing by your retailer, the nearest Roland Service Center, or an authorized Roland distributor, as listed on the "Information" page when:
 - The AC adaptor, the power-supply cord, or the plug has been damaged; or
 - If smoke or unusual odor occurs
 - Objects have fallen into, or liquid has been spilled onto the unit; or
 - The unit has been exposed to rain (or otherwise has become wet); or
 - The unit does not appear to operate normally or exhibits a marked change in performance.
- 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.

⚠ WARNING

- 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.
- Batteries must never be recharged, heated, taken apart, or thrown into fire or water.

⚠ CAUTION

- The unit and the AC adaptor should be located so their location or position does not interfere with their proper ventilation.
- Always grasp only the plug on the AC adaptor cord when plugging into, or unplugging from, an outlet or this unit.
- At regular intervals, you should unplug the AC adaptor and clean it by using a dry cloth to wipe all dust and other accumulations away from its prongs. Also, disconnect the power plug from the power outlet whenever the unit is to remain unused for an extended period of time. Any accumulation of dust between the power plug and the power outlet can result in poor insulation and lead to fire.
- 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.

⚠ CAUTION

- Never climb on top of, nor place heavy objects on the unit.
- Never handle the AC adaptor or its plugs with wet hands when plugging into, or unplugging from, an outlet or this unit.
- Before moving the unit, disconnect the AC adaptor and all cords coming from external devices.
- Before cleaning the unit, turn off the power and unplug the AC adaptor from the outlet.
- Whenever you suspect the possibility of lightning in your area, disconnect the AC adaptor from the outlet.
- If used improperly, batteries may explode or leak and cause damage or injury. In the interest of safety, please read and observe the following precautions (p. 10).
- Carefully follow the installation instructions for batteries, and make sure you observe the correct polarity.
- Avoid using new batteries together with used ones. In addition, avoid mixing different types of batteries.
- Remove the batteries whenever the unit is to remain unused for an extended period of time.
- If a battery has leaked, use a soft piece of cloth or paper towel to wipe all remnants of the discharge from the battery compartment. Then install new batteries. To avoid inflammation of the skin, make sure that none of the battery discharge gets onto your hands or skin. Exercise the utmost caution so that none of the discharge gets near your eyes. Immediately rinse the affected area with running water if any of the discharge has entered the eyes.
- Never keep batteries together with metallic objects such as ballpoint pens, necklaces, hairpins, etc.
- Used batteries must be disposed of in compliance with whatever regulations for their safe disposal that may be observed in the region in which you live.

For the U.K.

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

BLUE: NEUTRAL
BROWN: LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.
The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.
Under no circumstances must either of the above wires be connected to the earth terminal of a three pin plug.

