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Number of Inputs	40 inputs (REAC), Stereo AUX, Ambient Mic
Number of Outputs	Headphones ×2, L/R Balanced TRS, Stereo Line
AD/DA Conversion	24-bit / 96kHz, 48kHz or 44.1kHz
Nominal Input Level	AUX IN: -16dBu (at max volume)
Input Impedance	AUX IN: 10k ohms
Non Clip Maximum Input Level	AUX IN: +2dBu
Nominal Output Level	PHONE Jacks L/R: -6dBu (at Line Out Volume = Unity, 10k ohms load) Miniature PHONE Jack (REC L/R Output): -12dBu (at Line Out Volume = Unity, 10k ohms load)
Output Impedance	PHONE Jacks (1,2): 10k ohms LINE OUT Jacks L/R: 600 ohms LINE OUT REC L/R Jack: 10k ohms and above
Recommended Load Impedance	PHONE Jacks (1,2): 16 ohms or above (synthetic impedance 1 and 2) LINE OUT Jacks L/R: 10k ohms or above LINE OUT REC L/R: 10k ohms or above
Non Clip Maximum Output Level	PHONE Jacks (1,2): 250mW+250mW (1 or 2, at 1kHz/40 ohms load) LINE OUT Jacks L/R: +12dBu (at 1kHz/10k ohms load) LINE OUT REC L/R Jack: +6dBu (at 1kHz/10k ohms load)
Connectors	REAC EMBEDDED POWER Connector: RJ-45 EtherCon Type ×1 AUX IN: Stereo miniature phone type LINE OUT L/R: 1/4 inch phone type - balanced LINE OUT REC L/R: Stereo miniature phone type PHONE (1,2): Stereo 1/4 inch phone type and Stereo miniature phone type
Power Supply	DC +48V (via Cat5e cable) * S-4000D is required for power supply.
Power Consumption	13W
Dimensions	297.0 (W) × 171.0 (D) × 67.0 (H) mm, 11-3/4 (W) × 6-3/4 (D) × 2-11/16 (H) inches
Weight	1.5kg, 3 lbs 5 oz

S-4000D Specification	
Connectors	REAC Connector: RJ-45 EtherCon Type ×2 REAC EMBEDDED POWER Connector: RJ-45 EtherCon Type ×8
Indicators	REAC Power: Red ×8, Link: Green ×10, ACT: Orange ×10, Power: Blue ×1
Power Supply	AC 115V, AC 117V, AC 220V, AC 240V (50/60Hz)
Dimensions	482.0 (W) × 285.0 (D) × 87.8 (H) mm, 19 (W) × 11-1/4 (D) × 3-1/2 (H) inches
Weight	4.2kg, 9 lbs 5 oz

#### Optional Items

 <p><b>APC-33</b> All Purpose Clamp</p> <p>The clamp used for attaching the M-48 to the middle of a microphone, music or cymbal stand.</p>	 <p><b>RH-PM5</b> In-Ear Monitor</p> <p>The ideal In-Ear Monitor tuned for live stage monitoring with the M-48. Designed to fit securely in your ear during live performances.</p>	 <p><b>RH-300</b> Stereo Headphones</p> <p>Equipped with a newly developed 45mm driver with a neodymium magnet that offers full dynamic range.</p>	 <p><b>W100S-R</b> 100m CAT5e Cable on a Reel</p> <p>Compact and light-weight cable on a reel with Neutrik® Ethercon connectors on both ends.</p>	 <p><b>SC-W20F</b> 20m Premium CAT5e Cable</p> <p>REAC signal transfer cable with Neutrik® Ethercon connectors on both ends with the feel of a mic cable. Lays flat and easy to roll up.</p>
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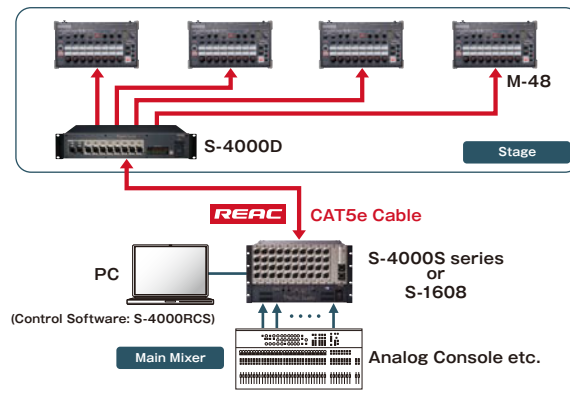
#### Ensuring high quality while protecting the environment: Roland is ISO9001 and ISO14001 certified

At Roland, several group companies have obtained ISO9001 certification. In addition, in January 1999, Roland also received ISO14001 international environmental management system certification. We're actively seeking ways to maintain harmony with the environment.

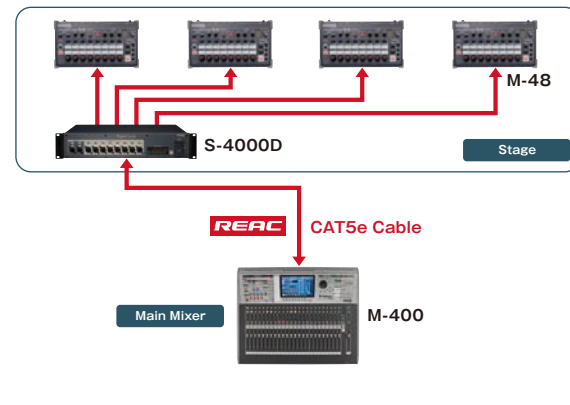
(ISO=International Standardization Organization: an organization for the promotion of standardization of international units and terms. They provide different categories of certification: ISO9001 Series certification is a product quality certification for products that undergo a certain level of quality control from the design stage to the after service stage; ISO14001 Series certification is for environment-related standards. Each member of the Roland Group is striving to obtain certification.)

#### M-48 Monitoring System Setup

##### Connect with Analog Console



##### Connect with M-400 V-Mixer

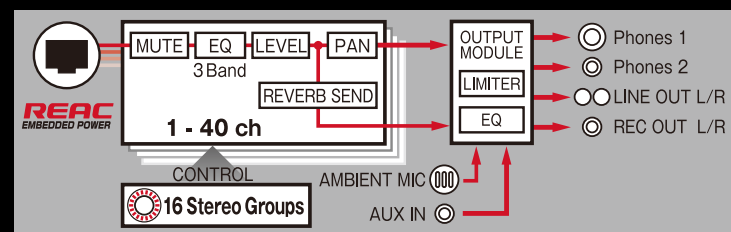


# LIVE PERSONAL MIXER M-48

## 1 Unprecedented Personalization

The M-48 enables control of up to 40 audio channels via 16 stereo groups. No longer do you have to share the same sources and in the same order as everyone else. Each musician can choose what he or she wants to listen to - a truly personal mix.

### ■ Block Diagram



## 2 Professional Sound Control and Quality

Sweeten your monitor mix to your exact preferences with volume, pan, 3-band EQ and built-in reverb per group - all instantly adjustable by convenient encoder knobs. A Limiter is incorporated for protecting your ears from sudden and dangerous volume spikes. Based on REAC, the all-digital connection results in a low noise floor, improved musicality and crystal clear sound.

## 3 Unparalleled Usability

The LED indicators on the control knobs enable instant adjustment and visual confirmation at a glance, even on a dark stage. The built-in ambient mic aids in communicating with other musicians without have to remove your IEMs or headphones as well as enabling a stage/room feel if desired. The AUX Input allows a metronome or other device to be mixed into the primary sound.



## 4 Convenient Connectivity

Our newly developed "REAC Embedded Power" transfers both power and 40 channels of audio to the M-48 via a single CAT5e cable - dramatically simplifying wiring and stage layouts. Mini jack and 1/4 inch phone jack headphone outputs are provided. Balanced TRS line outputs support wedge or other types of powered monitors. An independent stereo output mini jack enables recording with superb sound quality.

### ■ Rear Panel

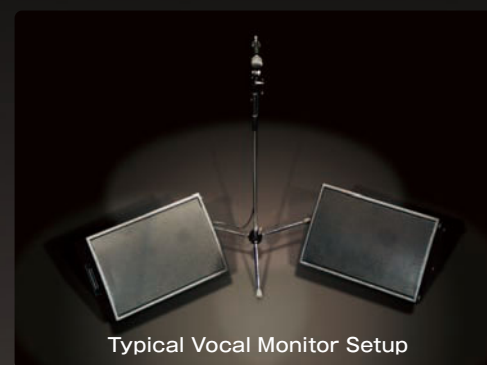


### The Next Generation of Simple, High Quality Audio Transfer



REAC (Roland Ethernet Audio Communication) is Roland's original technology for low latency, high quality digital audio transfer. Products using REAC technology are installed today in many venues and have been used for high profile events worldwide. REAC's 24-bit, 40x40 channel protocol delivers pristine digital audio via lightweight, inexpensive and easy to install cable (Cat5e). REAC technology is immune to externally induced signal quality degradation or hums and buzzes typically found in analog systems. You have more freedom in cable placement resulting in lower cost and better sounding installations.

The M-48 is the "next generation" live personal mixer that offers musicians the flexibility to control exactly what they want to listen to during their performances. It provides the highest level of sound monitoring quality for both headphones and IEMs (In-Ear Monitors) as well as for wedge and powered monitors. The superb sound quality creates the ideal monitoring environment for live performance and recording as well as studio applications.



Typical Vocal Monitor Setup



M-48 Live Personal Monitor System



## ■ A Complete Digital Mixing System with the M-400 V-Mixer

With the M-400 Live Mixing Console you can setup, maintain and control 40 channels of monitor output to each M-48 connected to the system. The M-400 is equipped with all the remote management software, memory recall, etc. providing a simple and flexible setup.



\* Version 2.0 (M-400) or higher is required when using the M-48.

### ■ Setup Display

Control the volume, pan and EQ of all channels.



### ■ Source Assignment

Channel assignment for up to 16 stereo groups is set using a simple matrix.



## ■ Connect to an existing Analog/Digital Console

With your existing console, connect the M-48 along with the S-1608 (16 channel) or the S-4000S (40 channel) Digital Snake to utilize the complete system. The next generation of digital monitoring can be incorporated along with your existing system.

\* Please see the system configuration example on the next page.  
\* Version 2.1 (S-4000S series) / version 2.0 (S-1608) or higher is required when using the M-48.



### S-4000S Series 40 I/O Modular Rack

A single CAT5e cable transfers 40 channels of 24bit digital sound signal. Custom Analog and/or Digital I/O assignments are available. Contact your local RSS dealer for more details.



### S-1608 Stage Unit

16 inputs / 8 outputs.

## ■ Setup and Manage the M-48 on your PC

M-48's can be setup and controlled on your PC when using with an existing console. Simply connect to the serial port on the S-1608 or S-4000S series Digital Snakes. Download the free software at [www.rolandsystemsgroup.net](http://www.rolandsystemsgroup.net).



## ■ Included Mounting Plate

The M-48 can be attached to a microphone stand by using the bundled mounting bracket. The mounting bracket is designed with a headphone hanger and accessory tray for your pencil or portable recorder. The optional APC-33 mounting bracket can be used when you need to mount the M-48 to the middle of a music or mic stand.



## ■ S-4000D - The REAC Splitter Equipped with Embedded Power

"REAC Embedded Power" is unique Roland technology that enables the transfer of not only the digital audio signal but also the power required by the connected device - all via one CAT5e cable. The S-4000D Splitter and Power Distributor is equipped with 10 REAC ports including 8 ports of REAC Embedded Power. The S-4000D can automatically detect and distinguish a product not supporting REAC Embedded Power. In this case, power is not provided allowing the S-4000D to also function as a standard splitter when required.



\* The S-4000D is required to use with the M-48.