

Roland

# V-Mixer M-480

LIVE MIXING CONSOLE

The New Flagship Console of the V-Mixing System



**REAC**

**V-Mixing System**  
Digital Audio Transfer & Mixing System

# V-Mixer — the Evolution Continues

## Developed to exploit ideal sound.

With superb sound quality, powerful functions, expandability and intuitive operation, the V-Mixing System continues to introduce new possibilities to the world of live mixing. Now four years after its debut and in direct response to actively listening to our users, the next generation V-Mixer has arrived.

Equipped with a newly developed mixing engine, the M-480 provides a powerful level of flexible audio processing.

The M-480 is the first V-Mixer to support a cascade connection that enables 96 channels of mixing by connecting a second unit.

Supporting live events, mobile production, broadcasting, and sound installation the V-Mixing System with the V-Mixer at its heart provides the next level of innovation for any live mixing venue.



# The new flagship V-Mixer is born.



*The V-Mixing System has been installed  
into thousands of venues worldwide*



## **V-Mixer M-480** LIVE MIXING CONSOLE

- 48 mixing channels plus 6 stereo returns
- Main LCR outputs, 16 AUX buses, 8 matrices
- 4-band fully parametric EQ, gate/compressor on all channels
- All input and output channels equipped with delay
- 6 built-in multi-effects and 12 graphic EQs
- Cascade capability supports large format applications



# V-Mixer M-480 Features

## Powerful processing provides an unprecedented level of control

### Advanced Processing Power

The processing power of the M-480 supports the widest range of venues and applications. The newly developed mixing engine provides a 4-band fully parametric EQ, gate, compressor, and delay on each input channel. 185 possible patch points with 90 discreet outputs.

### Easy, intuitive and award-winning interface design

The large color display and dedicated knobs and buttons in the channel edit section offers intuitive operation. The user interface is designed to be easy to learn and easy to use. Combining the cursor buttons around the value dial provides optimized and efficient operation.

### All input and output channels equipped with delay

In large format venues such as a concert halls and stadiums as well in broadcast applications, audio time alignment settings are critical. The M-480 is equipped with delays on all mixing channels and outputs buses. High quality and precise sound adjustments can be accomplished by using the built-in real time analyzer.

### The cascade capability enables a solution for high channel counts

The M-480 supports a cascade connection requested by many live sound engineers. Connecting two M-480s with one REAC cable enables the mixing of up to 96 channels as well as advanced synchronization of internal busses. A mixing environment equivalent to a large format console can be created within a minimal footprint and budget.



V-1600HD  
Multi-format  
Video Switcher

R-1000  
48-Track  
Recorder/Player

M-480  
V-Mixer

M-48  
Live Personal Mixer

S-4000S Series  
Digital Snake

S-1608  
Digital Snake

S-0808  
Digital Snake

## V-Mixing System

Digital Audio Transfer & Mixing System

### Configure a system for any venue or application The V-Mixing System – an advanced mixing environment

It's not simply a digital version of an analog console. The V-Mixing System is the next generation mixing "ecosystem" that exploits the advantages of digital technology. It separates mixing (V-Mixer) from the input/output section (Digital Snake) enabling pure sound, minimal loss of transmission with very flexible system configuration and setup. It allows effortless add-ons for monitoring solutions (M-48 Personal Mixer) as well as multi-channel live recording (SONAR REAC Recording System and R-1000 48-Track Recorder/Player). The V-Mixing System encompasses the entire live sound process expanding the possibilities far beyond a mixing console.

## REAC

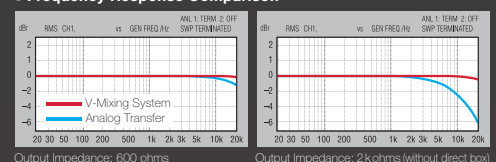
### High quality sound is obtained with ease and flexibility REAC – advanced audio transfer technology

REAC (Roland Ethernet Audio Communication) technology is the cornerstone of the V-Mixing System. REAC is Roland's original technology for low latency, high quality digital audio transfer. REAC is an Ethernet based technology that enables multiple components to be easily integrated using lightweight Cat5e/6 cable. With just a single inexpensive cable, 40 x 40 channels of 24-bit uncompressed audio data (including level and control information) are transferred.

Multiple analog cables were used to transmit data at low gain levels, which caused problems such as unwanted noise, sound quality deterioration, and crosstalk between channels. With REAC, these problems have been eliminated because the pre-amp gain is set before the data is transmitted digitally. REAC is the audio transmission technology over Ethernet cable that provides high quality sound with the bonus of convenient setup.



#### Frequency Response Comparison





# V-Mixer M-480 Overview

Equipped with all the functionality of current digital consoles. A myriad of features support any application.

## Powerful mixing capacity with Cascade support

The capacity of 48 mixing channels, 6 stereo returns, main LCR outputs, 16 AUX buses, and 8 matrices supports any venue or application. The cascade connection enables two M-480s to be linked allowing up to 96 mixing channels. The fully assignable REAC A and B patchbays allows for very flexible internal routing. A post preamp patchpoint allows direct routing from inputs to outputs without having to route through the console.



## Newly developed mixing engine with powerful signal processing

All inputs and outputs are equipped with a 4-band fully parametric EQ. A gate, compressor and delay is also available on all mixing channels. Channel parameters are controlled using the dedicated knobs and buttons. With a high resolution crystal clear color display, the M-480 provides an unprecedented audio mixing experience.



## Rich effects along with Twelve GEQs/PEQs

The M-480 is equipped with six dual-mono, multi-effects processors that are available as AUX or insert effects. Each multi-effects processor has 18 algorithms of various types such as reverb, delay, chorus, pitch shift and advanced channel strip. Six types of precisely emulated legendary vintage Roland effects such as the RE-201, SDE-3000, and SRV-2000 are included. In addition, twelve 31-band graphic EQs or 8-band fully parametric EQs are included for sound adjustment. The six multi-effects and twelve GEQs/PEQs can be used simultaneously.





### All inputs and outputs are equipped with delay

The M-480 is equipped with delay on all input channels and output busses. Problems with sound delay in a concert venue or broadcast application can be solved using the internal processor. Delay time is adjustable up to 400msec, and is selectable in both time and distance units between msec/feet/meters/frames. It also features a high performance graphical real time analyzer for precise and focused sound adjustment.



### Remote control and offline setup using a PC

The M-480 can be controlled remotely by connecting an PC via USB. The M-480RCS control software has the same user interface as the built-in display. The M-480RCS can also be used when the M-480 is not connected allowing offline setup and configuring of the system before an event. Setup data can then be copied to a USB flash drive ready to load into the console at the venue. Using a connected PC and a wireless LAN, a tablet device can control the M-480 from a remote location like the stage or a seat in the audience.



\* M-480RCS can be downloaded from [www.rolandsystemsgroup.net](http://www.rolandsystemsgroup.net)

### Three live recording options

The M-480 supports live multi-channel recording. Simply connect the R-1000 with Cat5e/6 cable to easily record (or playback) up to 48 channels of 24-bit audio. Uncompressed BWF file data is stored on a removable SSD or HDD where it can be edited later in the studio with a DAW of choice. By using Cakewalk SONAR Producer software\*, up to 40 channels can be recorded directly by simply connecting a single REAC cable to a PC. In addition, the built-in USB memory recorder can record a stereo output signal from the M-480 as an uncompressed WAV file. The USB memory recorder also supports WAV file playback for convenient playback of music and announcements.

\* REAC driver kit is required to record using Cakewalk SONAR directly.



R-1000 48-Track Recorder/Player



SONAR REAC Recording System



Built-in USB Recorder/Player

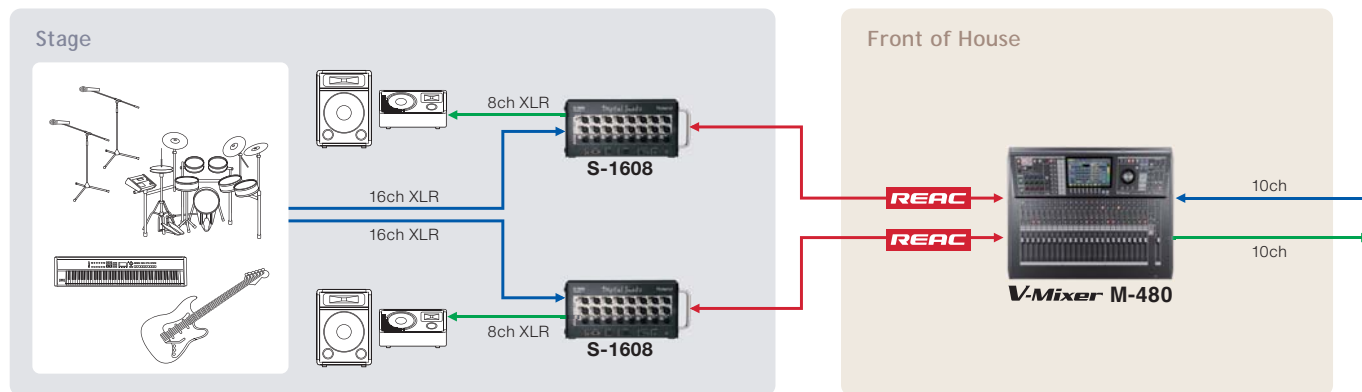
# V-Mixer M-480 Applications

## Expandability and flexibility bring many advantages

### Basic System

The basic system supports typical mid-sized live event applications.

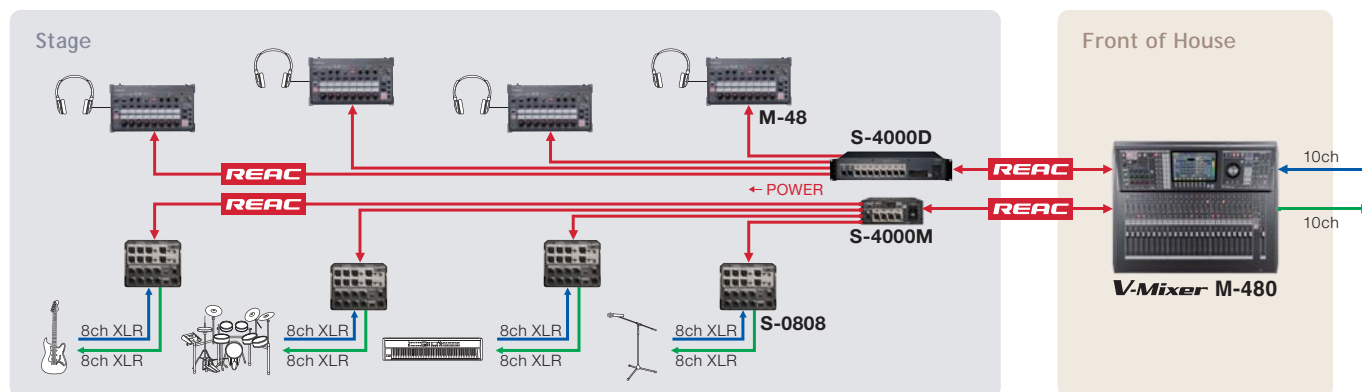
Two S-1608 for I/O enable a total of 32 inputs and 16 outputs on the stage with 10 inputs and 10 outputs at the console.



### Live Monitoring System

Expanded system for mixing live stage. Flexible I/O setup is possible by using four S-0808s.

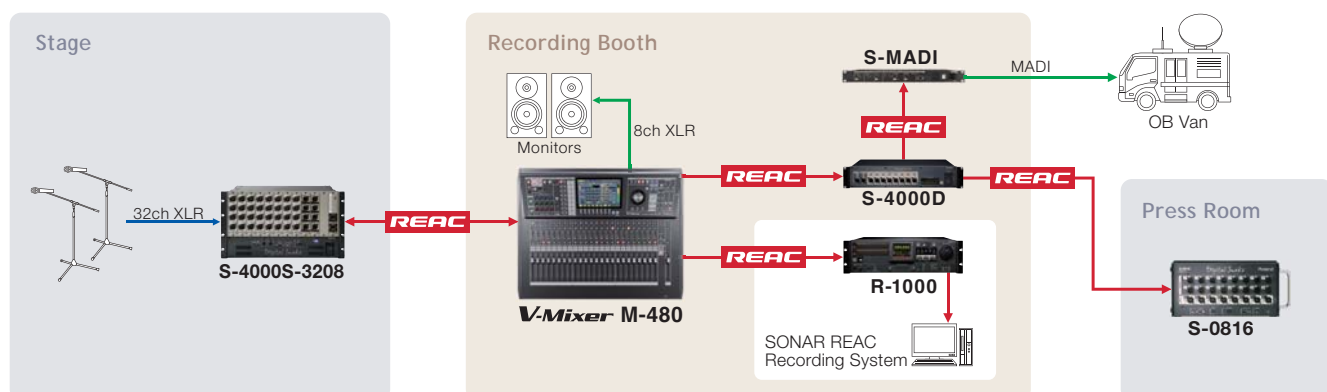
Using four M-48 and M-480, the V-Mixing System can be used as a monitoring system for any live application.



### Broadcasting System

Use the M-480 for mixing TV/radio broadcasts along with recording direct preamp splits via a parallel connection using the R-1000 and SONAR REAC Recording System. Using the Roland S-MADI bridge, the sound is sent to an OB van using MADI format.

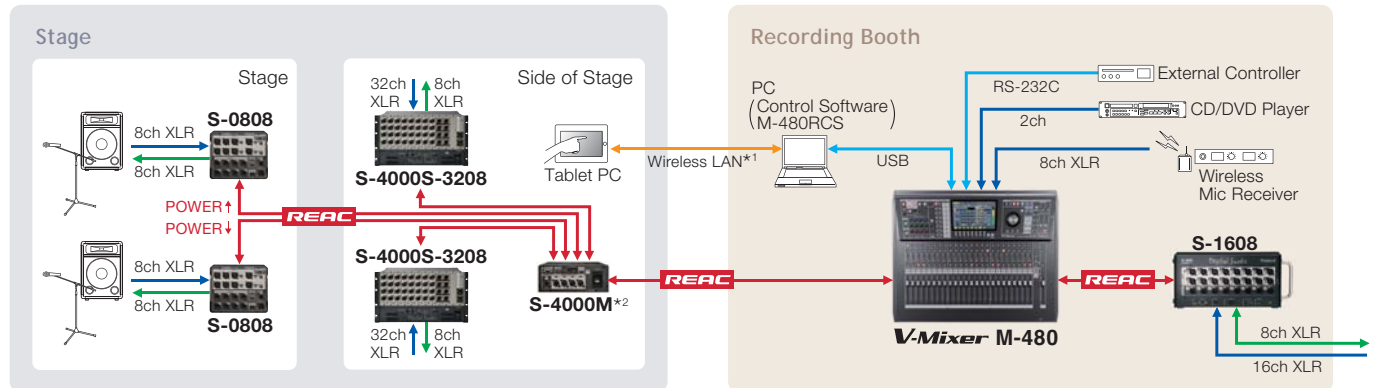
The S-4000D enables easy splitting and distribution of the audio.





## Audio Installation for Hall/Church

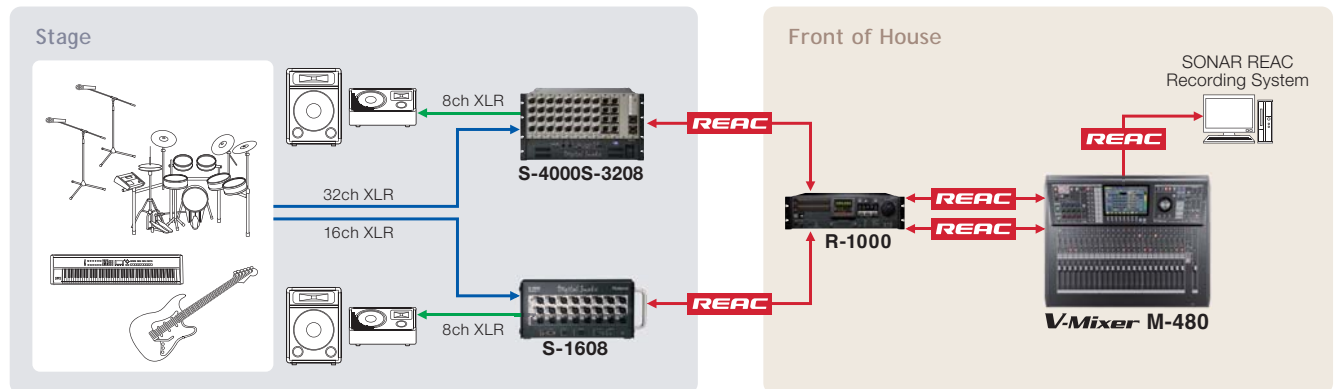
A setup of two S-0808s on the stage and an S-4000S on the side of the stage can support a variety of events. An M-480 at the FOH (front of house) position connected to a PC can be remotely controlled through a wireless LAN using a tablet PC.



48 input channels must be selected from 106 physical inputs via M-480 patchbay. \*1 Wireless LAN equipment and setup are required. \*2 Using S-4000M patchbay, 40 input channels must be selected from 80 physical inputs.

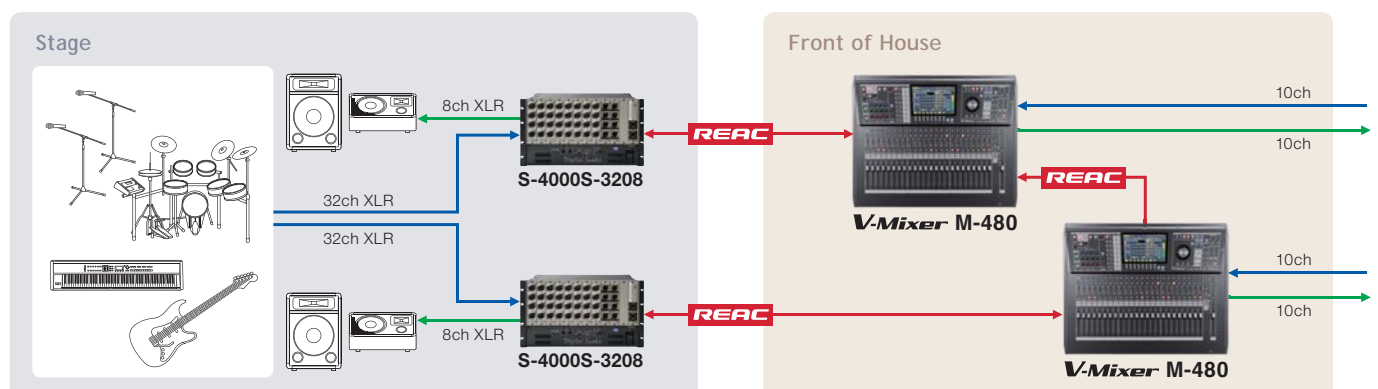
## Multi-Channel Recording/Playback System

The R-1000 not only records multi-channel audio but can also play back 48 channels in combination with a V-Mixing System or other digital consoles using MADI. This enables playing backing track and rehearsing/training without the band present. The SONAR REAC Recording System enables multi-channel recording simultaneously.



## Cascade System

Cascade connection enables up to 96 mixing channels by connecting two M-480s via a single Cat5e/6 cable. Master console shares Main/AUX/Matrix/Solo buses of Slave Console. A large format mixing system can be configured with minimum footprint.



## V-Mixer M-480 Specifications

PROCESSING	
Mixing Channels	INPUT: 48 channels, 6 stereo returns BUS: MAIN L/C/R, 16 AUX, 8 MATRIX OUTPUT: 10 ports (Max 90 ports When using REAC devices)
AD/DA Conversion	24-bit/48.0 kHz or 44.1 kHz
Network Latency	2.8 ms (typ.) *Total System Latency of audio signal from S-1608 inputs to outputs via M-480's REAC ports (A or B). *Sample Rate: 48.0 kHz *Effects : No insert effects
CONNECTORS	
CONSOLE INPUT jacks (1 to 8)	XLR-3-31 type (balanced, phantom power)
TALKBACK MIC IN jack	XLR-3-31 type (balanced, phantom power)
STEREO IN jacks (L / R)	RCA phono type
CONSOLE OUTPUT jacks (1 to 8)	XLR-3-32 type (balanced)
PHONES jack	Stereo 1/4 inch phone type
DIGITAL OUT jacks Stereo	Optical type, Coaxial type
REAC Ports	RJ-45 EtherCon type
USB connectors	USB Type A and Type B
Remote Controls	RS-232C connector: 9-pin D-sub type, MIDI connectors (OUT/THRU, IN): 5-pin DIN type
Other Connectors	GND Terminal, LAMP connector XLR-4-31 type
INPUT/OUTPUT CHARACTERISTICS	
Frequency Response	CONSOLE OUTPUT jacks (1 to 8): -2 dB / +0 dB (20 k ohms load, +4 dBu, typ.) PHONES jack: -3 dB / +0 dB (40 ohms load, 150 mW, typ.)
Total Harmonic Distortion + Noise	CONSOLE OUTPUT jacks (1 to 8): 0.05 % (+4 dBu, typ.) PHONES jack: 0.05 % (typ., 40 ohms load, 150 mW, typ.)
Dynamic Range	CONSOLE OUTPUT jacks (1 to 8): 110 dB (typ.)
Crosstalk@ 1 kHz	CONSOLE INPUT jacks (1 to 8): -80 dB (Pad: ON, Input gain: +10 dBu, typ.) CONSOLE OUTPUT jacks (1 to 8): -100 dB (typ.)

Nominal Input Level (Variable)	CONSOLE INPUT jacks (1 to 8): -65 to -10 dBu (Pad: OFF) or -45 to +10 dBu (Pad: ON), (typ.) STEREO IN jacks (L / R): -18 to 0 dBu TALKBACK MIC IN jack: -50 to -10 dBu
Input Impedance	CONSOLE INPUT jacks (1 to 8): 14 k ohms STEREO IN jacks (L / R): 10 k ohms TALKBACK MIC IN jack: 41 K ohms
Non Clip Maximum Input level	CONSOLE INPUT jacks (1 to 8): +8 dBu (Pad: OFF) or +28 dBu (Pad: ON), (typ.) STEREO IN jacks (L / R): +18 dBu (typ.) TALKBACK MIC IN jack: +8 dBu (typ.)
Nominal Output Level	CONSOLE OUTPUT jacks (1 to 8): +4 dBu (Load impedance: 10 k ohms, typ.)
Output Impedance	CONSOLE OUTPUT jacks (1 to 8): 600 ohms PHONES jack: 100 ohms
Recommended Load Impedance	CONSOLE OUTPUT jacks (1 to 8): 10 k ohms or greater PHONES jack: 8 ohms or greater
Non Clip Maximum Output level	CONSOLE OUTPUT jacks (1 to 8): +22 dBu (1 kHz, 10 k ohms load, typ.) PHONES jack: 150 mW + 150 mW (1 kHz, 40 ohms load, typ.)
Residual Noise Level (IHF-A, typ.)	-88 dBu (All faders: Min)
Equivalent Input Noise Level (E.I.N.)	-126 dBu
OTHERS	
Display	800 x 480 dots Wide VGA backlit TFT color screen
Power Supply	AC 115 V, AC 117 V, AC 220 V, AC 230 V, AC 240 V (50/60 Hz)
Power Consumption	95 W
Dimensions	749.0 (W) x 614.0 (D) x 229.0 (H) mm 29-1/2(W) x 24-11/16(D) x 9-1/16(H) inches
Weight	20 kg, 44 lbs. 1 oz.

(0dBu=0.775Vrms)

+ XLR type: 1 GND, 2 HOT, 3: COLD \* Phantom power: DC +48 V(unloaded maximum), 14 mA (maximum load) (All XLR type inputs) \* LAMP power: DC +12 V/500 mA \* When a S-4000D REAC Splitter&Power Distributor or a switching hub is used in-line with REAC cables, the network latency will increase by the amount of processing delay introduced by the splitting device itself. The actual delay is dependant upon the specifications of the splitting device, though the maximum delay amount for a single splitting device should be about 200 microseconds. \* EtherCon is the registered trade mark of Neutric®

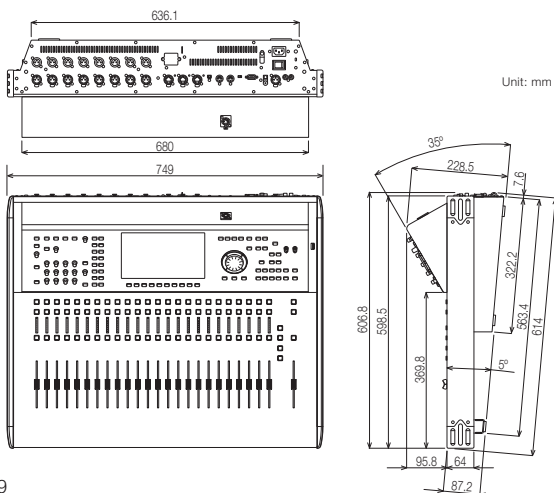
## Digital Snake S-1608/0816 Specifications

Number of Channels	S-1608 : 16 in 8 out S-0816 : 8 in 16 out
AD and DA Conversion	24 bit / 96 kHz
Frequency Response	-2 dB / +0 dB (@ +4 dBu, 20 Hz to 20 kHz)
Total Harmonic Distortion + Noise	0.05 % or less (Pad: On, Input Gain: +4 dBu, 22Hz to 20 kHz)
Dynamic Range	110 dB
Cross Talk	-80 dB or less (Input Gain: +4 dBu, typ.)
Nominal Input Level	-65 to -10 dBu (PAD: Off), -45 to +10 dBu (PAD: On) (1 dB step, Max. +28 dBu)
PAD	20 dB On/Off
Input Impedance	14 k ohms
Nominal Output Level	+4 dBu, Max. +22 dBu
Output Impedance	600 ohms
Recommended Load Impedance	10 k ohms or greater
Residual Noise Level (IHF-A, typ.)	-80 dBu or less

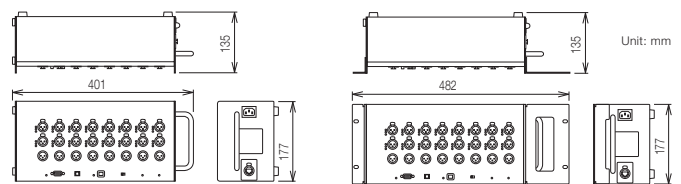
Equivalent Input Noise Level	-128 dB
Network Latency	375 microseconds when using REAC cable only (*1) (AD > REAC > DA Latency: approx 1.2 ms)
Nominal Input Level	XLR Input (XLR-3-31 type, balanced, phantom power): 16 (S-1608), 8 (S-0816) XLR Output (XLR-3-32 type, balanced): 8 (S-1608), 16 (S-0816) Digital Output connector x 1 (Optical type) REAC Connector x 1 (RJ-45 EtherCon type) Remote Connector x 1 (RS-232C, DB-9 type)
Power Supply	AC 115 V, AC 117 V, AC 220 V, AC 230 V, AC 240 V (50/60 Hz)
Power Consumption	45W
Dimensions	401(W) x 135(D) x 177(H) mm 15-13/16(W) x 5-3/8(D) x 7(H) inches
Weight	5.5 kg, 12 lbs. 3 oz. (Including rack-mount adaptor)

\* Phantom power: DC +48 V(unloaded maximum), 14 mA(maximum load) (All XLR type inputs)  
\* When a S-4000D REAC Splitter&Power Distributor or a switching hub is used in-line with REAC cables, the network latency will increase by the amount of processing delay introduced by the splitting device itself. The actual delay is dependant upon the specifications of the splitting device, though the maximum delay amount for a single splitting device should be about 200 microseconds.  
\* EtherCon is the registered trade mark of Neutric®

## V-Mixer M-480 Dimensions

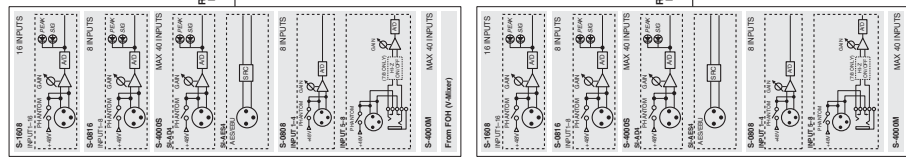
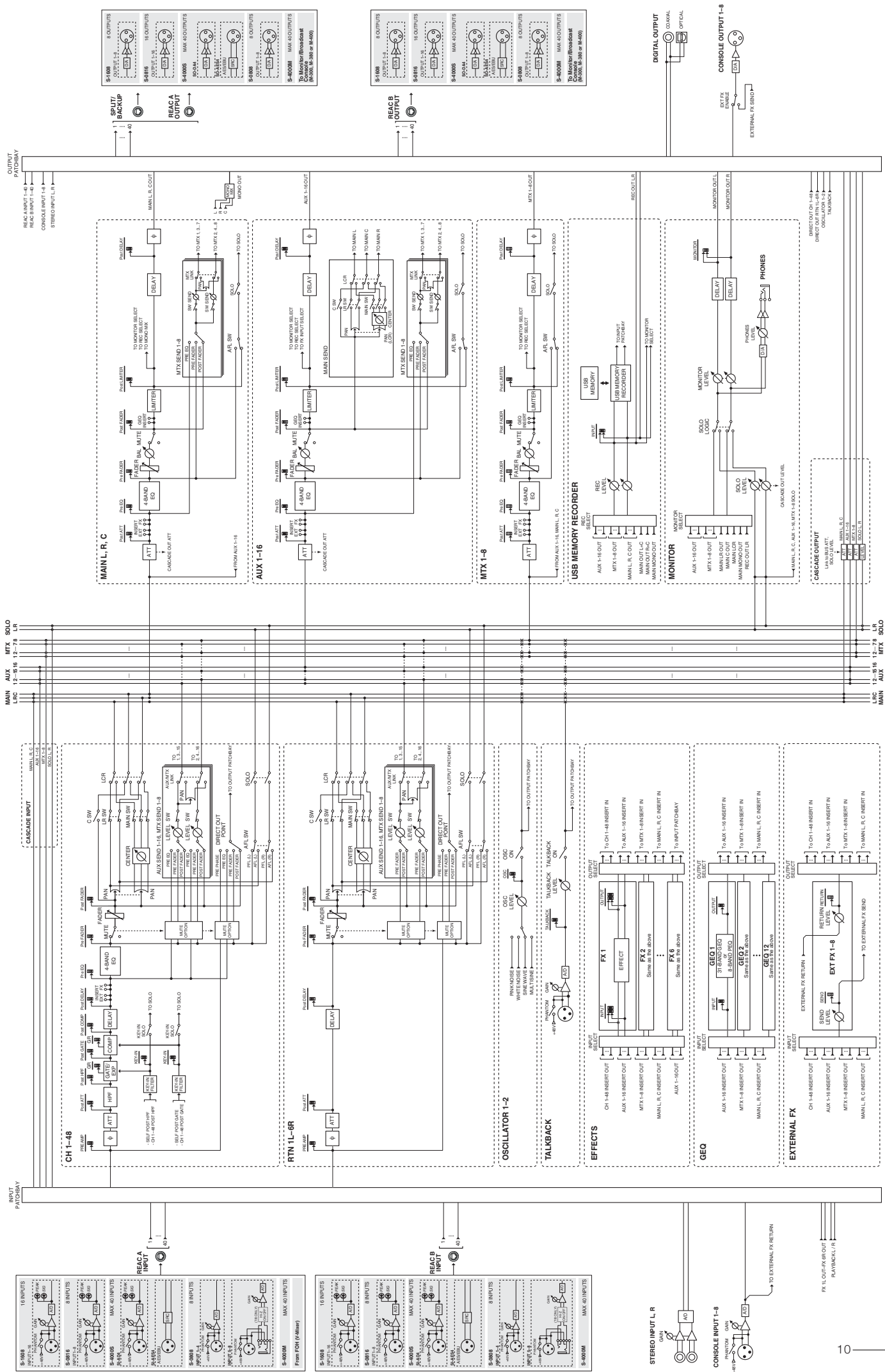


## Digital Snake S-1608/0816 Dimensions



\* EIA-4U Size when the bundled rack-mount adaptor is attached.

# V-Mixer M-480 Block Diagram





## COMPONENTS

### DIGITAL AUDIO TRANSFER

#### S-4000S-3208 40CH I/O MODULAR RACK

- 32in/8out flagship I/O unit



#### S-4000S-0832 40CH I/O MODULAR RACK

- 8in/32out flagship I/O unit



#### S-4000S-MR 40CH I/O MODULAR RACK

- Modular rack chassis with no preinstalled In/Out modules



#### SI-AD4 4-channel Analog Input Module



#### SO-DA4 4-channel Analog Output Module

#### SI-AES4 4-channel Digital Input Module



#### SO-AES4 4-channel Digital Output Module

#### S-0808 8X8 I/O UNIT

- 8in/8out compact digital snake



#### S-1608 STAGE UNIT

- 16in/8out I/O unit



#### S-0816 FOH UNIT

- 8in/16out I/O unit



#### S-4000D REAC SPLITTER & POWER DISTRIBUTOR

- Equipped with 10 REAC ports including 8 ports of REAC Embedded Power



#### S-4000M REAC MERGE UNIT

- Merge up to four REAC devices
- Power REAC devices supporting "REAC Embedded Power" (S-0808, M-48)



#### S-OPT REAC OPTICAL CONVERTER

- Converts multi-channel REAC signal to a digital optical signal



#### W100S-R REAC CABLE (100m)

- 100 meter Cat5e cable on reel for REAC signal transmission
- Crossover Ethernet cable with Neutrik® Ethercon connectors on both ends



#### SC-W100S REAC CABLE (100m)

#### SC-W20F REAC CABLE (20m)



### PERSONAL MIXING

#### M-48 LIVE PERSONAL MIXER

- Musician controls up to 40 channels via 16 stereo groups
- Built-in ambient mic, reverb, EQ, line in, line out, etc. – many functions for the best possible stage monitoring solution



### MADI

#### S-MADI REAC MADI BRIDGE

- Bi-directional conversion between REAC and MADI
- BNC and Optical MADI ports
- Clock source can be selected from REAC, MADI or Word Clock



### MULTI-CHANNEL RECORDING

#### R-1000 48-TRACK RECORDER/PLAYER

- Dedicated recorder for recording/playback of up to 48 channels via REAC connection
- HDD and SSD media supported



### SONAR V-STUDIO 700

#### VS-700C V-STUDIO Console

#### VS-700R V-STUDIO I/O

- Ultimate recording and editing solution for use with REAC systems



## LINEUP

#### V-Mixer M-480

##### Live Mixing Console

- 48 Mixing Ch/6 Stereo Return/19 Bus/8 Matrix, flagship console of V-Mixer lineup



#### V-Mixer M-400

##### Live Mixing Console

- 48 Mixing Ch/18 Bus/8 Matrix, award-winning digital mixing console



#### V-Mixer M-380

##### Mixing Console

- Rack-mountable console with the same engine as the M-400



#### V-Mixer M-300

##### Mixing Console

- Powerful and compact, 32 Mixing Ch/11 Bus/4 Matrix digital mixing console



## Roland Systems Group

Roland Systems Group, a member of the worldwide group of Roland companies, is dedicated to the support of audio and video professionals demanding excellence in both performance and system design. Through the development and support of video and audio products, we endeavor to improve workflow and maximize creative possibilities.

### 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.)



www.rolandsystemsgroup.com/m480

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