Roland Systems Group

RSS by Roland

Live Mixing Console

V-Mixer M-400

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

Mixing Console

V-Mixer M-380

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

V-STUDIO 700

Ultimate recording solution for use with REAC systems.

V-Mixer M-300
LIVE MIXING CONSOLE

Powerful and Compact Digital Mixing System

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.

V-LINK is a technology designed for realtime audio and video integration. Using V-LINK, musicians can "play" video from their electronic instrument. Roland provides an integrated Audio and Visual solution.

Roland
WE DESIGN THE FUTURE

www.rolandsystemsgroup.net

V-Mixing System
Digital Audio Transfer & Mixing System

Powerful, Compact Mixing

An innovative console that fits anywhere.
Easy to operate. Incredible sound.

Roland introduced the modern V-Mixing System to the world in 2007. The V-Mixing System incorporates several models of V-Mixer Live Mixing Consoles, Digital Snakes for advanced digital audio transmission, the M-48 Personal Mixing System and the SONAR REAC Recording System for multi-channel recording. The V-Mixing System has been embraced the world over because of its high-quality sound, powerful features, extensibility and ease of operation. V-Mixing Systems are currently in use in live venues, touring and production, television and radio broadcasting/recording, as well as concert halls, educational institutions and houses of worship.

The M-300 V-Mixer expands the number of V-Mixing System applications with a compact, highly portable chassis useable in any type of situation. The M-300 builds on the core V-Mixer feature set to represent the highest levels of performance at a breakthrough price.

Introducing the M-300 V-Mixer.

V-Mixer LIVE MIXING CONSOLE **M-300**

- 32 mixing channels, L/C/R outputs, 8 AUX buses, 4 Matrices
- 4-band PEQ and dynamics on all channels
- 11 different built-in multi-effects/ PEQ and delay on all outputs
- 24bit AD/DA for high-quality sound
- Remotely controllable from a PC
- Record to /playback from USB flash memory
- Perfectly integrates with the Digital Snake for simple and high-quality audio transmission, distribution, splits and merging
- Construct a flexible and powerful system by adding the Personal Mixing System, multi-channel recording and other REAC components.
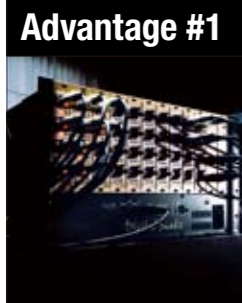
REAC
Roland Ethernet
Audio Communication

Live Events

Mobile

Broadcast

Installation

2   3

The V-Mixing System Advantage

Active in a wide range of venues

There are reasons why sound professionals and venues
around the globe have chosen the V-Mixing System.

Advantage #1 — Superior Sound Quality — *Digital Snake*

To achieve superior sound quality, the I/O unit(s) (Digital Snake) and the mixer (V-Mixer) are separate. Before A/D conversion, the input enters the discreetly designed, high-quality preamp, which is then digitally transmitted to the mixer over REAC protocol. By having the mic preamps closer to their source and by avoiding the transmission losses of long runs of analog cables, audio has a chance to sound its best throughout the whole system. The system provides superior clear sound, great intelligibility and with the wide range of Digital Snakes and REAC Merge Technology there is incredible flexibility for placement of audio inputs and outputs on-stage, off-stage, at FOH or in amplifier rooms.

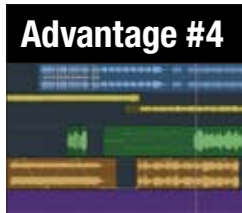### Advantage #2 — Intuitive User Interface — *V-Mixer*

Knobs and buttons for Preamp, EQ, and PAN are located on the front panel of the V-Mixer for intuitive, analog-like operation. Dedicated buttons for direct access to the patchbay and effects are also located on the front panel. With the on-board HELP system it's easy to learn and operate the V-Mixer.

Advantage #3 — The Musician's Choice for Personal Mixing — M-48

Stage monitoring is crucial in getting the best performance from any artist. The V-Mixing System seamlessly integrates with the M-48 Live Personal Mixer allowing full control of set-up and mixing of any musician's M-48 directly from the V-Mixer interface. Musician's around the world have chosen the M-48 as their personal mixing system of choice because of the unprecedented level of control and amazing sound quality.

Advantage #4 — Live Recording of Up to 40 Channels — SONAR

The demand for live recording has increased as live sound mixing has become digital. Connecting a PC for recording to the V-Mixing System is a simple Cat5e connection. Live recording of up to 40 channels is easily captured with SONAR DAW software from Cakewalk. Additionally, you can record a master mix directly from the V-Mixer to a USB flash drive.

Pope Benedict XVI in Fátima, Portugal

Pope Benedict XVI made a pilgrimage to this sanctuary in Fátima. Several ceremonies were held, which were followed by more than 450,000 attendees as well as millions of people around the world through television, radio and internet. All these events were mixed and split via 5 M-400 V-Mixers, and audio signals were distributed using Digital Snake systems via cable CAT5e to different split points such as television, radio and internet. Choosing this system was based on a previously successful experience during a 2007 visit of Pope Benedict XVI to Valencia (Spain) where a large number of Digital Snakes were installed. Fátima Sanctuary has two V-Mixing Systems: one in the control room of the sanctuary as a central point for audio monitoring and a second unit in the new Church of the Holy Trinity with a capacity of 9000.

Covenant Family Worship Center, USA

At Covenant Family Worship Center (a multi-cultural, non-denominational church in Fredericksburg, Virginia), technology and media department head Stephen W. Stafford uses the V-Mixing System including the Live Personal Mixing system for regular Sunday services and other events. He finds that the V-Mixing System has "allowed us to utilize volunteers with little or no previous audio engineering experience to effectively control the audio system". He reflects that the benefits of the personal monitoring system are twofold. "First, it relieves the audio volunteers from the additional responsibility and concern for the monitor mix. Second, it allows each musician to tailor their stage mix as needed on an individual basis." Stafford acknowledges he enjoys the "store and recall of settings, and signal integrity over Cat5. In total, I've experienced state-of-the-art audio production on an unrivaled affordability scale."

Trent FM Arena Nottingham, UK

The arena, which is based inside the National Ice Centre, holds many concerts/events for major acts with a capacity of 10,000. Adam Timson facilities manager says "The brief we were working to was the seamless replacement of our large 32 channel analog mixing desk ensuring there would be no loss of quality, features or usability. We looked at quite a few different options but after consultation with Simon Taylor of One Big Star and Andy Hague, our tame sound engineer, we decided the M-380 V-Mixer with Digital Snake best suited our needs and budget. It has a 19" footprint which allows us to move it easily and the Digital Snake means we can plug it in using just a single mains lead and single Cat5 cable. Since the M-380 was installed we have been happy with its performance and find the menus easy to navigate. We are able to save specific set ups and still adjust on the fly when we need to. The desk is as flexible as we are."
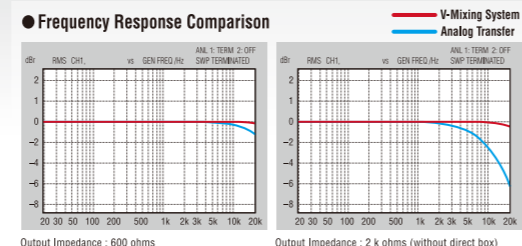
REAC — Simple and Flexible High-Quality Sound - REAC: Next Generation Audio Transmission Technology

The foundation of the V-Mixing System is "REAC" (Roland Ethernet Audio Communication), the digital audio transmission technology developed by Roland. As a result of this technology, a flexible V-Mixing System can be constructed to match any venue using the Digital Snake and other REAC components. REAC is an Ethernet based technology, allowing devices to be connected easily with a standard CAT5e LAN cable. REAC can transmit up to 40x40 channels of uncompressed 24bit digital audio data, volume level information, and various control data using a single cable.

By placing the preamps as close to the source as possible, sound quality deterioration during transmission is minimized to the lowest possible level.

In the past, 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, those problems have been eliminated since the pre-amp gain is set before the data is transmitted digitally. REAC technology not only provides superb sound quality, but also enables easy setup and installation.

● Frequency Response Comparison
— V-Mixing System
— Analog Transfer

Output Impedance : 600 ohms
Output Impedance : 2 k ohms (without direct box)

From Analog Console to V-Mixing System — Large Analog SR Console + Outboard Effects Racks

Much more than just a console replacement.

Unlike other digital consoles, the V-Mixing System is not just a simple digital version of an analog console. The V-Mixing System offers a total solution for audio input and output transmission/splitting, personal mixing and multi-channel recording in a totally integrated system. As the centerpiece of the system, the V-Mixer includes a built-in recording/playback function and effects, digital scene recall and user customizations and level management. To replicate all the functions of the M-300 with an analog console system, a vast array of equipment would be required. A 32ch analog console, 32 separate compressors, 32 separate gates, 4 separate stereo multi-effect units, 15 separate 8-band parametric EQs and delays, and a digital recorder. All that is built into the M-300 with the added ability for every setup to be easily saved and recalled. More than a console - it's a complete system.

IN

M-300

Compact, Uncompromising Sound and Features
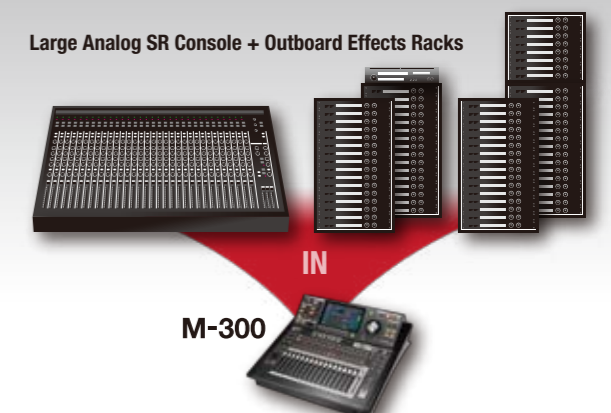
Compact Size: 749 (W) × 626 (D) × 229 (H) mm   Light Weight: 9.8kg
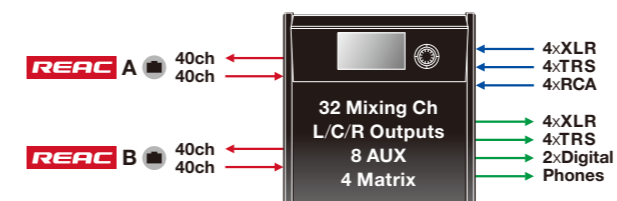
Impressive mixing capacity in a small package

The M-300 V-Mixer is the ultimate solution for a variety of venues and applications. It provides a substantial mixing capacity of 32 mixing channels, 8 aux buses, 4 matrices, which represent the highest level in its class. The M-300 V-Mixer seamlessly integrates with other REAC devices. The user can directly operate the Digital Snake preamp, control an M-48 Personal Mixer, and set up the I/O for the S-4000M REAC Merge Unit. All of these features are contained in a very compact size of 749mm width x 626mm depth x 229mm height, and at a weight of 9.8kg (21 lbs 10 oz). The M-300 is the perfect choice for any venue with a limited set-up area, as well as for mobile sound reinforcement. Optional rack rails are also available.

■ Built-in 2 REAC ports allows flexible system configuration

REAC A — 40ch / 40ch → 32 Mixing Ch L/C/R Outputs 8 AUX 4 Matrix — 4×XLR / 4×TRS / 4×RCA

REAC B — 40ch / 40ch → 4×XLR / 4×TRS / 2×Digital Phones

Advanced Control Surface Design

The M-380 and M-400 V-Mixers are highly regarded for their ease of use and the M-300 continues this tradition starting with 17 x 100mm motorized faders. Central to the M-300's operation is a high-resolution 800x480 pixel color display. Channel Parameters such as Gain, Pan, EQ and Dynamics can be comfortably operated from the Channel Edit section located on the left side of the display. All parameters can be instantly saved and recalled from Scene Memory. The layers of faders can be easily switched with the LAYER button. Faders can be accessed and arranged freely, and saved as a User Layer.

Powerful Built-in Channel Effects

Equalization of channels and dynamics are the foundation of any great mix. The enhanced sound shaping abilities of the M-300 input channels include 4-band fully parametric EQ as well as gate and compression. A Key-In filter can be used for the Gate/Compressor to enable more expressive mixing. The 4 multi-effects processors can be set to use any of 11 different effects types. In addition to Reverb and Delay, modulation effects such as Chorus and Phaser are also available. The M-300's busses are also equipped with 8 bands of fully Parametric EQ and Signal Delay on each Aux, Matrix and Main output. The M-300 is fully equipped with all of the sound adjustment tools built-in and ready to go.

USB memory recorder/player

Record the output of the M-300 Main, assigned AUX bus or MATRIX bus directly to a USB memory drive connected to the built-in USB port. A mix produced with the M-300 can be saved as an uncompressed WAV file, without the need for an external recorder. WAV files on the USB memory drive can also be played back on the M-300 and used for background music/tracks. User settings and mixer data can also be saved to a USB memory drive.

Cutting Edge Features   The M-300 interfaces with a variety of devices

■ Control remotely from a PC

The M-300 can be controlled remotely in real-time from a PC (Windows) connected via the USB port. Mixing functions on the M-300 can be operated directly from a PC by using the M-300RCS dedicated control software which has the same GUI as the M-300 color display. (The M-300RCS can be downloaded from the Roland Systems Group website.) The M-300RCS can also be operated in offline mode, allowing data for various settings to be created in advance and saved to a USB memory drive. When you get to the venue, load the settings and jump right into sound check and rehearsal.

■ Control remotely using a wireless LAN

By enabling Remote Desktop Connection on a local PC directly connected to the M-300 via the USB, the M-300 can be controlled remotely from another PC using a wireless LAN. A tablet PC can be used to control the M-300 from a remote location. For example, you can be seated in the audience to adjust the house mix during the rehearsal, or stand onstage to adjust the monitor mix while consulting the stage performer. The M-300 enables new mixing possibilities that you could never achieve with an analog console.

■ Multi-channel recording to a DAW

Forty channels of 24-bit audio can be recorded directly to a PC (Windows) by connecting a REAC port to the gigabit Ethernet port on the PC via a single Cat5e cable. Audio is recorded as individual WAV files using Cakewalk SONAR and can be mixed after recording using the powerful digital audio tools and effects in SONAR.

* To use this feature, the CW-RDK REAC driver kit is required in addition to SONAR.

■ V-LINK - Audio and Visual Solution

By connecting the MIDI input/output to the video switcher such as the V-1600HD, V-LINK automatically synchronizes the audio of the M-300 with the visual images allowing "audio follows video".

The variety of REAC products open a world of possibilities.

Expandability and flexibility bring many advantages

STAGE UNIT
S-1608
● 16in/8out I/O unit ● High quality preamp inputs ● Optical digital output ● Rackmountable

FOH UNIT
S-0816
● 8in/16out I/O unit ● High quality preamp inputs ● Optical digital output ● Rackmountable

8x8 I/O UNIT
S-0808
● 8in/8out compact digital snake ● High quality preamp inputs - Also equipped with two TRS and two Hi-Z inputs ● Supports REAC embedded power and external battery operation

S-0808
S-1608
S-0816

40CH I/O MODULAR RACK
S-4000S-3208
● 32in/8out flagship I/O unit. ● High quality preamp inputs ● I/O configuration can be customized with different I/O (analog or digital) cards ● Redundant REAC ports

40CH I/O MODULAR RACK
S-4000S-0832
● 8in/32out flagship I/O unit. ● High quality preamp inputs ● I/O configuration can be customized with different I/O (analog or digital) cards ● Redundant REAC ports

4-channel Analog Input Module	**SI-AD4**
4-channel Analog Output Module	**SO-DA4**
4-channel Digital Input Module	**SI-AES4**
4-channel Digital Output Module	**SO-AES4**

SI-AD4   SO-DA4   SI-AES4   SO-AES4

S-4000S-3208

REAC MERGE UNIT
S-4000M
● Merge up to four REAC devices ● Power REAC devices supporting "REAC Embedded Power" (S-0808, M-48)

REAC OPTICAL CONVERTER
S-OPT
● Converts multi-channel REAC signal to a digital optical signal

REAC MADI BRIDGE
S-MADI NEW
● Bi-directional conversion between REAC and MADI

REAC SPLITTER & POWER DISTRIBUTOR
S-4000D
● Equipped with 10 REAC ports including 8 ports of REAC Embedded Power.

S-4000M   S-OPT

NEW S-MADI

S-4000D

Live Personal Mixer
M-48
● 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.

M-48

REAC CABLE
W100S-R
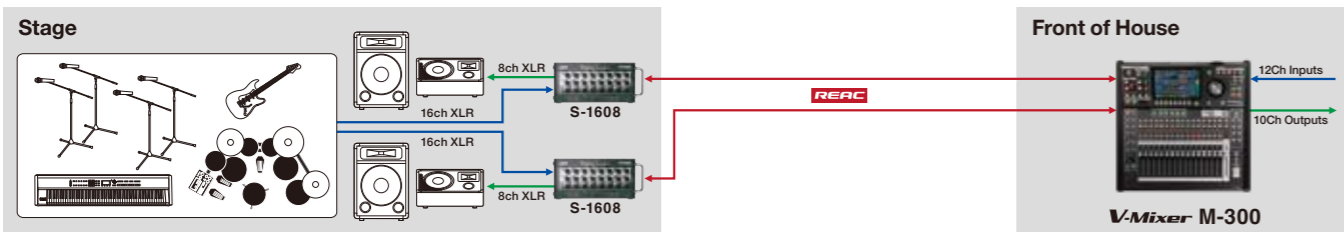● 100 meter Cat5e cable on reel for REAC signal transmission ● Crossover Ethernet cable with Neutrik® Ethercon connectors on both ends
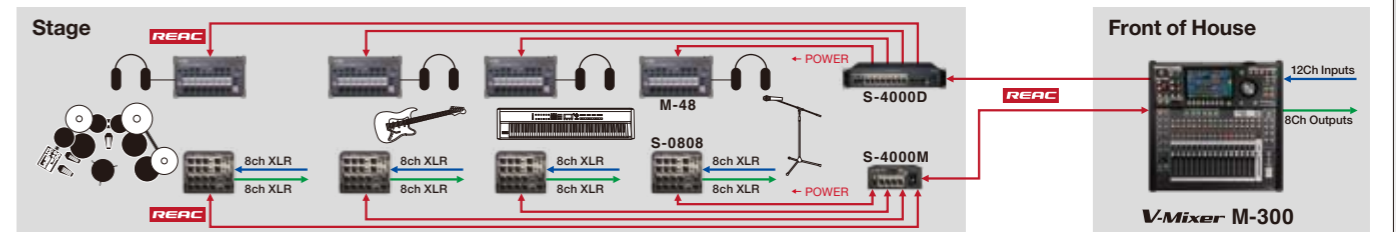
W100S-R

Basic System
Basic system supports various applications. 2x S-1608s are used for I/O unit. 32 inputs can be selected for mixing from all inputs, and 26 channels can be output.

Stage

16ch XLR
16ch XLR
8ch XLR
S-1608
8ch XLR
S-1608

REAC

Front of House

12Ch Inputs
10Ch Outputs

V-Mixer M-300

* 32 input channels must be selected from 44 physical inputs via the M-300 patchbay.
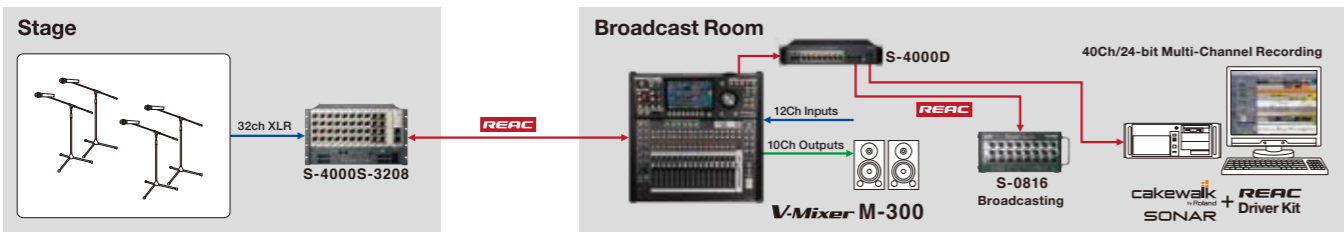
Expanded System
This expanded system has many advantages. 4x S-0808 are connected via the S-4000M Merge Unit allowing very flexible and distributable setup. Each of the musician's M-48 Personal Mixers can also be managed from the M-300.

Stage

REAC
← POWER
M-48
S-0808
S-4000D
8ch XLR
8ch XLR
8ch XLR
8ch XLR
8ch XLR
8ch XLR
8ch XLR
8ch XLR
S-4000M
← POWER
REAC

Front of House

12Ch Inputs
8Ch Outputs

V-Mixer M-300

* 32 input channels must be selected from 44 physical inputs via the M-300 patchbay.
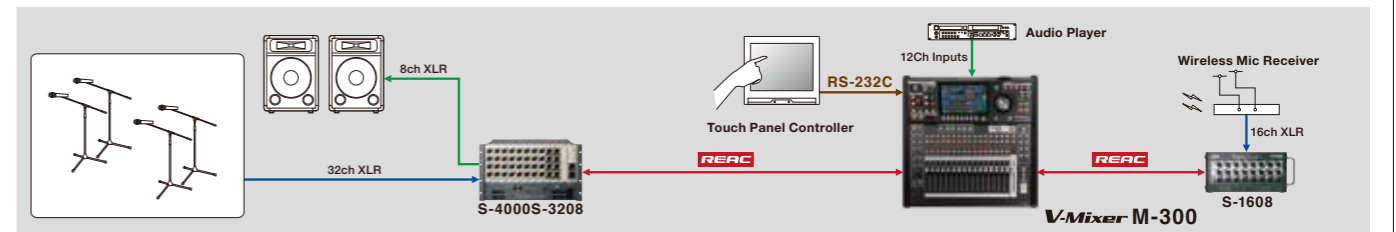
Broadcasting System
This system enables both live stage production and broadcasting. REAC signal comes from the stage to the M-300 and is then split to another two locations. Multi-channel recording is also possible by connecting a PC.

Stage

32ch XLR
S-4000S-3208

REAC

Broadcast Room

S-4000D
40Ch/24-bit Multi-Channel Recording
12Ch Inputs
10Ch Outputs
REAC
S-0816 Broadcasting

cakewalk by Roland
SONAR
+ REAC Driver Kit

V-Mixer M-300

* 32 input channels must be selected from 44 physical inputs via the M-300 patchbay.

Audio Installation
This example shows a high input count shared between the stage and front of house. With RS-232 control, the M-300 can be operated using a touch panel controller.

8ch XLR
32ch XLR
S-4000S-3208
REAC
Touch Panel Controller
RS-232C
Audio Player
12Ch Inputs
Wireless Mic Receiver
16ch XLR
REAC
S-1608
REAC

V-Mixer M-300

* 32 input channels must be selected from 60 physical inputs via the M-300 patchbay.

## V-Mixer M-300 SPECIFICATIONS

PROCESSING

Number of Channels	32 mixing channels/11 buses/4 MATRIX buses/Up to 92 inputs and 90 outputs when using REAC Devices
AD/DA Conversion	24-bit/48.0 kHz or 44.1 kHz
Network Latency	2.8 mS (typ.) *1 * Total System Latency of audio signal from S-1608 inputs to outputs via M-300's REAC ports (A or B). * Sample Rate: 48.0 kHz * Effects : No insert effects

CONNECTORS

CONSOLE INPUT jacks (1 to 4)	XLR-3-31 type (balanced, phantom power)
CONSOLE INPUT jacks (5 to 8)	1/4 inch Phone type (balanced)
CONSOLE INPUT jacks (9 to 12)	RCA Pin type
CONSOLE OUTPUT jacks (1 to 4)	XLR-3-32 type (balanced)
CONSOLE OUTPUT jacks (5 to 8)	1/4 inch Phone type (balanced)
PHONES jack	Stereo 1/4 inch phone type
DIGITAL OUT jack	Optical type
REAC port	RJ-45 EtherCon type x 2
USB port	Type A x 1, Type B x 1
Remote Connectors	RS-232C connector: 9-pin D-sub type MIDI connectors (OUT/THRU, IN): 5-pin DIN type
Other Connectors	Grounding terminal AC INPUT connector

INPUT/OUTPUT CHARACTERUSTUCS

Frequency Response	CONSOLE OUTPUT jacks (1 to 8): -2 dB / +0 dB (20k ohms load, +4 dBu) PHONES jack: -3 dB / +0 dB (40 ohms load, 150 mW)
Total Harmonic Distortion + Noise	CONSOLE OUTPUT jacks (1 to 8): 0.05 % (typ., +4 dBu) PHONES jack: 0.05 % (typ., 40 ohms load, 150 mW)
Dynamic Range	CONSOLE OUTPUT jacks (1 to 8): 105 dB (typ.)
Crosstalk@ 1 kHz	CONSOLE INPUT jacks (1 to 4): -80dB (Pad: ON, Input sens: +4 dBu, typ.) CONSOLE INPUT jacks (5 to 12): -80dB (Input sens: +4 dBu, typ.) CONSOLE OUTPUT jacks (1 to 8): -100 dB (typ.) * Sampling frequency is 48 kHz or 44.1 kHz.

Nominal Input Level (Variable)	CONSOLE INPUT jacks (1 to 4): -65 to -10 dBu (Pad: OFF) or -45 to +10 dBu(Pad: ON) CONSOLE INPUT jacks (5 to 12): -28 to +4 dBu
Input Impedance	CONSOLE INPUT jacks (1 to 4): 14 k ohms CONSOLE INPUT jacks (5 to 12): 10 k ohms
Non Clip Maximum Input level	CONSOLE INPUT jacks (1 to 4): +8 dBu (Pad: OFF) or +28 dBu (Pad: ON) CONSOLE INPUT jacks (5 to 12): +22 dBu
Nominal Output Level	CONSOLE OUTPUT jacks (1 to 8): +4 dBu (Load impedance: 10 k ohms)
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) PHONES jack: 150 mW + 150 mW (Typ., 1 kHz, 40 ohms load)
Residual Noise Level (IHF-A, typ.)	-88 dBu (All faders: Min)
Equivalent Input Noise Level (E.I.N.)	-126 dBu (Main Fader: Unity, Channel faders: Unity only one channel, Preamp gain: Max)

OTHERS

Display	800 x 480 dots Wide VGA TFT color screen with backlight
Power Supply	AC 115 V, 117 V, 220 V, 230 V, 240 V (50/60 Hz)
Power Consumption	50 W
Dimensions	470.0 (W) x 482.7 (D) x 194.9 (H) mm 18-1/2(W) x 19(D) x 7-1/4(H) inches
Weight	9.8 kg 21 lbs 10 oz

(0dBu=0.775Vrms)

* XLR type: 1 GND, 2 HOT, 3: COLD
* phantom power: DC+48V(unloaded maximum), 14mA(maximum load) (All XLR type inputs)
* When a REAC Splitter S-4000D 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 200microseconds.
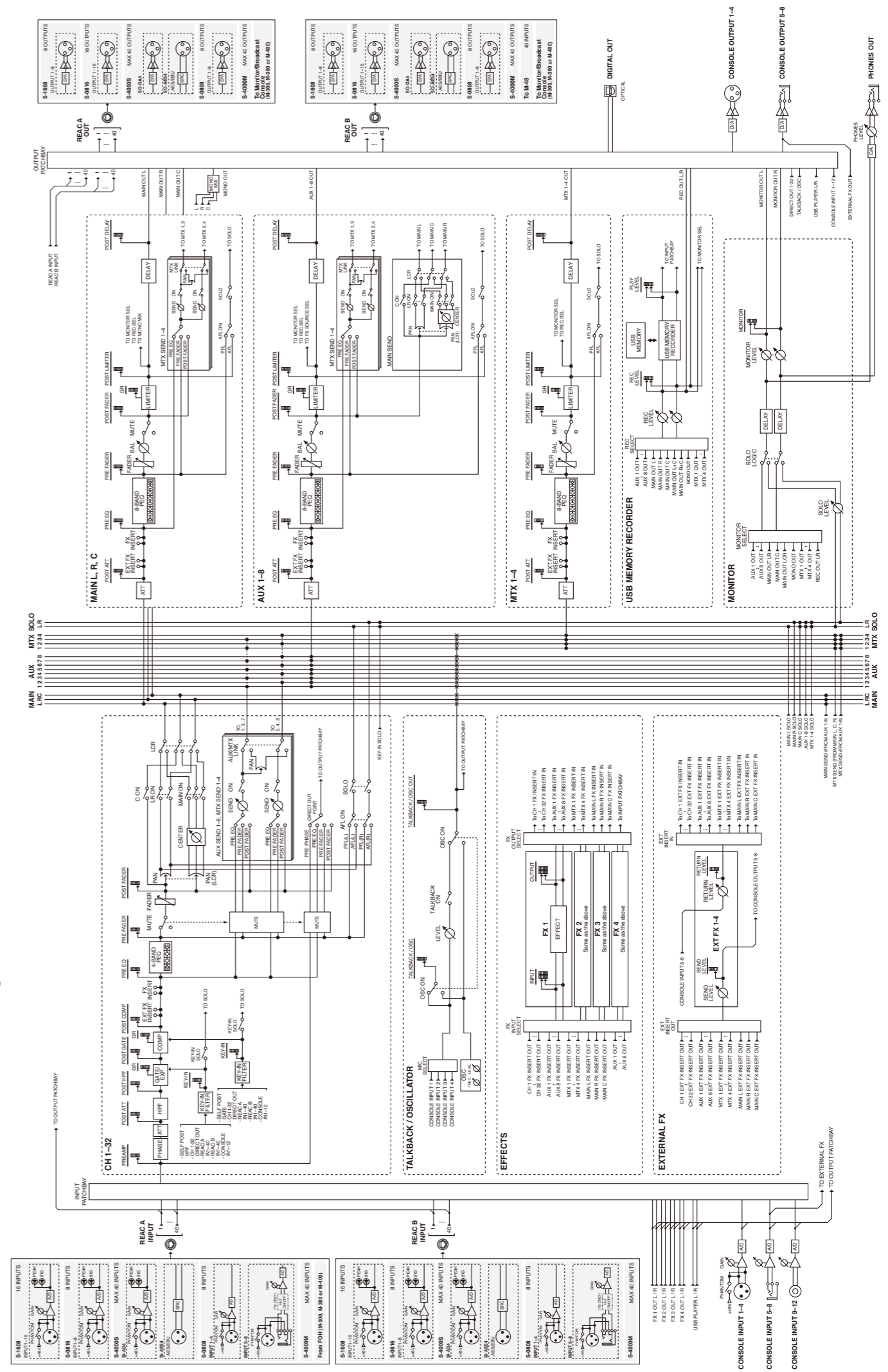
V-Mixer M-300 Dimensions

Unit: mm

470 194.9 430 20 20 475.7 482.7
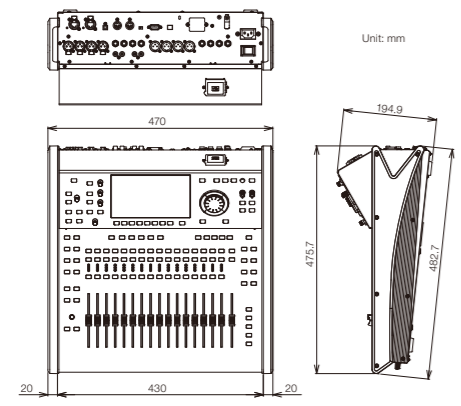
OPTION

Rackmount Angle
RA-10U

Rackmountable to 19-inch rack (EIA)

M-300 Mixer Block Diagram

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