

V-Mixing System

Digital Snakes

Digital Consoles

Personal Mixers

Multi-Channel Recording

REAC



V-Mixer M-400 Live Mixing Console **Ver.2.0**
M-380 Mixing Console



Digital Snake

Multi Channel
Digital Audio
Transfer System

The Breakthrough Digital Mixing Solution

**A simple Cat5e REAC cable from stage
to mixing console.**

A breakthrough digital mixing and recording solution for
live sound events and installations.

REAC

Roland is known as one of the world's
foremost audio innovators. From the VS series,
the world's first stand alone Digital Studio

Workstation released in 1996, to Roland's breakthrough 1999 V-Mixing System
incorporating high-quality stage-based preamps and a digital snake, Roland has
always had a reputation for innovation, high quality audio and reliability. Following
these leading edge products comes a total mixing solution based on Roland's
powerful REAC technology. From digital snakes on stage, to Cat5e audio
distribution, to the intuitive M-400 control surface and mixing processor with built
in linear recording, to digital splits for direct multi-channel PC recording; the next
generation V-Mixing system establishes a new era in high-quality digital mixing.

EDIROL
by Roland
V-440HD
Multi Format Video Mixer

REAC
CAT5e Cable



Ver.2.0
V-Mixer
Live Mixing Console M-400

- 48 CHANNELS/18 BUSES
8 MATRICES
with GEQs/PEQs & Effects
- 56-bit internal processing
- Touch Sensitive Motorized Faders
- USB Memory Player/Recorder
- DCA Groups/Mute Groups
- Scene Recall with Head Amp Gain

The Perfect Digital Solution for Live Audio Distribution and Mixing

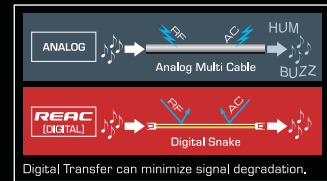
V-Mixing System

Digital Audio Transfer & Mixing System

The REAC digital transfer technology used on the 48-channel M-400 V-Mixer establishes a new era in live audio mixing.

Superb Sound Quality

The V-Mixing system uses Cat5e-based REAC technology to convert audio to a digital stream on stage using high quality 24-bit remote-controlled mic pre-amps. Because the V-Mixing System is all digital, the integrity and sound quality of the audio signal is maintained from the stage units to the M-400 V-Mixer and back to the outputs for connection to amps and speakers without the high frequency and intelligibility losses found in analog cabling.



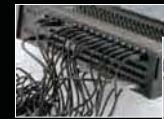
Intuitive and Easy Operation

The M-400 V-Mixer features 25 x 100mm motorized, touch sensitive faders; a large, bright 800 x 480 color screen; dedicated knobs for EQ, Pan, and Gain; and Scenes for total recall of all console settings. Designed for all operator levels, the intuitive interface is quick to navigate and easy to learn and even has an onboard Help system. The V-Mixing System is the answer for high quality, cost-effective live digital audio mixing and control.



Quick and Easy Installation and Setup

The V-Mixing System uses the REAC protocol between the stage units and console using a simple Cat5e cable connection instead of bulky, heavy multi-core analog snakes. The Cat5e connection is also immune from the hums buzzes and cross talk associated with analog snakes. With no configuration required, simply plug the Cat5e cable from the stage units to the REAC A & B ports located on the rear of the M-400 V-Mixer and the system is ready to go.



Example of analog connection



REAC connection

Supports advanced integrated applications

Use the optional S-OPT Optical converter to send signals up to 2 kilometers using fiber cable. Using REAC, up to 40 channels of audio can be recorded by simply connecting a Cat5e cable from the REAC Split port on the M-400 V-Mixer to a gigabit network port on your PC running Cakewalk's SONAR software. By using Roland's V-LINK protocol you can connect the V-Mixing System to the Edirol V-440HD Multi format Video Mixer for a completely integrated audio and video performance solution.

* The number of recording tracks may differ depending on the PC performance.



V-LINK connection with the EDIROL V-440HD Video Mixer



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 technology provides many system advantages.

Multi channel transfer with high quality audio

REAC transfers 24-bit uncompressed multi channel audio with very low latency. REAC technology eliminates the typical problems found in analog transfer such as signal quality degradation or hums and buzzes. In addition, since REAC transfer happens over light weight cable and is immune to externally induced noise, designers and integrators have more freedom for cable placement resulting in lower cost installations.

Up to 40x40 channels over lightweight Cat5e

Heavy analog multi core cable requires large, expensive conduit for installations, and suffers from high frequency losses and potential for induced

hums and buzzes. REAC's transfer protocol provides pristine digital audio in a very light weight, inexpensive and easy to install cable format.



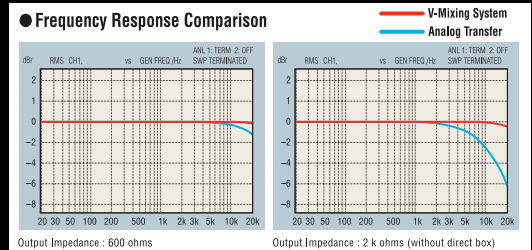
Preamps on stage boost the input gain before the long journey

In analog transfer systems, low level mic signals must go long distances before they are amplified. With the REAC system, the input signal is amplified on stage, right next to the source, and then converted to a lossless, 24-bit digital signal. This REAC audio signal can then be transferred without degradation. So direct boxes are not required.

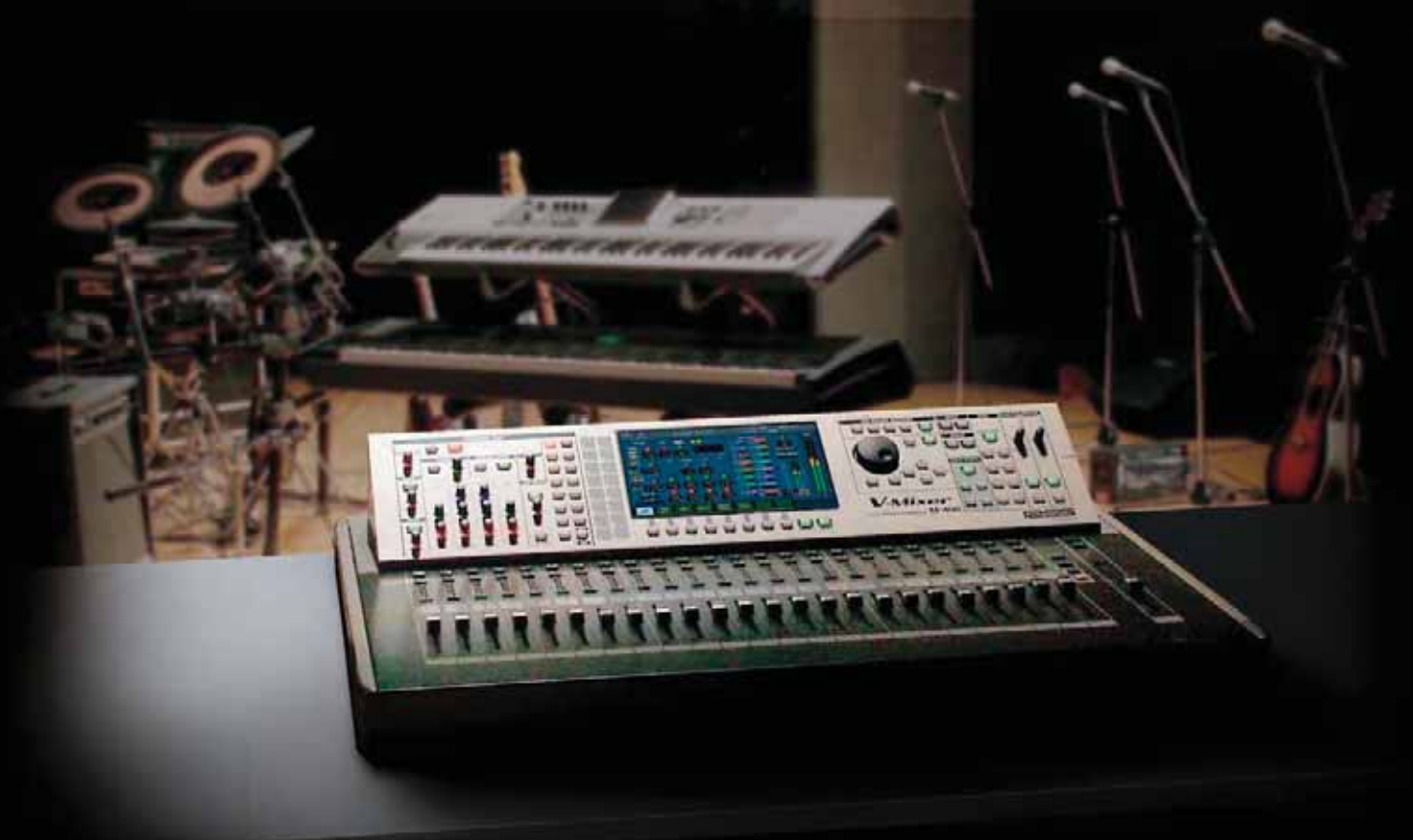
24-bit multi-channel recording to PC via REAC

Using a Cat5e cable, simply connect a PC to the REAC split port on the back of the M-400 V-Mixer. Take inputs and buses from/to stage in their original digital form for up to 40 channels of recording. Integrate a high quality recording system with unprecedented ease at an affordable price.

* REAC driver must be installed on PC for multi-channel recording.
* The number of recording tracks may differ depending on the PC performance.



cakewalk SONAR



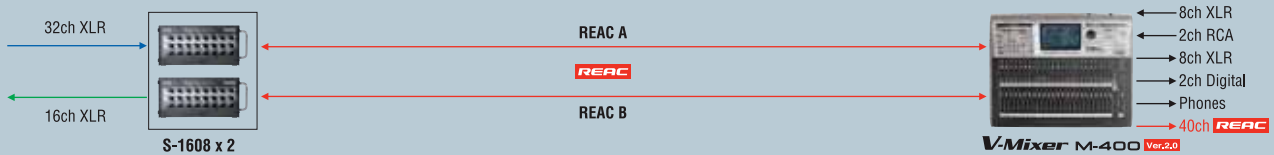
In addition to improving overall audio quality, the V-Mixing system is very cost effective to install. The system's digital advantages of total recall, built-in effects and recording bring many benefits to any mixing installation.

V-Mixing System

Digital Audio Transfer & Mixing System

Standard System

Standard system consists of 2 S-1608 Digital Snakes on stage



Basic System

A simple and affordable system to use one S-1608 Digital Snake on stage



Expanded System*

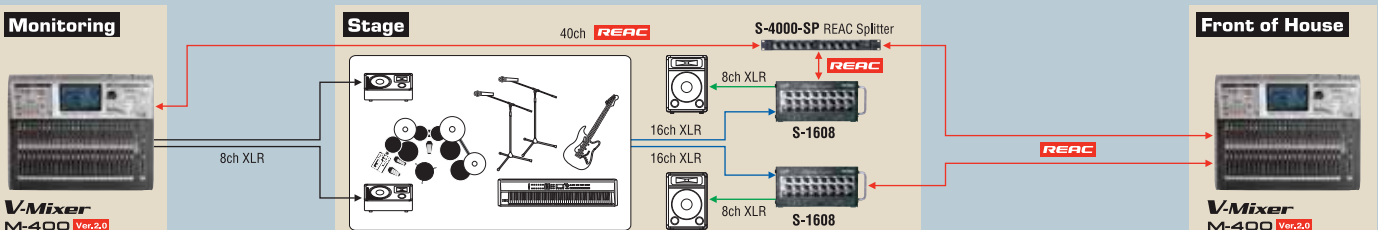
One S-1608 and one S-4000S-3208 Digital Snake on stage side provide more physical inputs



* 48 input channels must be selected from 58 physical inputs via the M-400 patchbay.

Split Setup

The V-Mixing system's REAC protocol makes it easy to split the source audio signals. These splits can be used to connect to another M-400 acting as a monitor console, M-48 Personal Mixing system, or output for analog monitoring or recording requirements.



The M-400 Mixer provides intuitive and easy operation for all V-Mixing system functions.

Compact



Local Inputs and External Insert Effects

The M-400 Console can be used to host additional inputs such as wireless mic modules, video decks or even additional phantom-powered microphones. Using the system's External Insert paths, they can also serve as paths to external processors from channels or buses.



Even more console inputs

The console also hosts an RCA stereo pair for direct connection of a CD player, DVD player or VCR. Along with the onboard USB Memory recording, they provide additional means of playing back pre-show audio, sound effects or video/DVD audio.



Record and Playback audio to/from USB memory drive

The M-400's USB Memory Recorder facilitates the playback of linear audio files using standard USB memory drives. It can also be used to record high quality stereo mixes of the live event. The USB drive is also used for saving/loading console user setup data, setting up unique User Passwords and for system updates.



The compact/lightweight M-400 provides 48 channels and 16 AUX buses plus Main L/R outputs. This is an all-in-one design featuring Digital Effects processors, channel and bus DSP and stereo linear file recording/playback function using a USB Memory Drive. The M-400 provides extremely easy, intuitive operation.

V-Mixer
Live Mixing Console M-400 Ver.2.0

Size 749mm



Direct Connection with PC for multi-channel recording

The M-400's REAC Split port enables direct connection with a PC's gigabit Ethernet port using only a Cat5e cable. This allows recording of up to 40 channels using Cakewalk's SONAR software without the need for any external audio interfaces.

* REAC driver must be installed on PC for multi-channel recording.

* The number of recording tracks may differ depending on the PC performance.



Remote control and offline setup using a PC

The M-400's second USB port provides direct PC connection for remote control and saving/loading presets from a PC. When a PC is on a wireless local network and connected to the M-400, a wireless tablet PC or other computer could be used on stage or in the house for any real time mixing or setup functions (using Microsoft's Remote Desktop function).

The free M-400 RCS Ver.2 software can be downloaded from www.rolandsystemsgroup.net



The cornerstone of Roland's Audio & Visual Solution

Employing visual entertainment at concerts or musical events is now very common. Roland provides an integrated, Audio & Visual solution. Connecting the M-400 with an EDIROL V-440HD Multi-format Video Mixer using V-LINK provides an automatic Audio Follow Video mix.

V-LINK

The large, bright 800 x 480 color LCD gives a very clear view of all the M-400's parameters.

Channel Edit



Gate/Expander Display
Large Gate and Expander screen enables intuitive, graphical operation.



Gate/Expander Library
Use libraries for storing frequently used settings. Presets provide easy way to get started with most common sources.



Channel Display
Channel Editing Display is a familiar and easy-to-use analog-style layout of channel parameters. Change values fast using the M-400's dedicated knobs and buttons.



EQ Display
Large graphical display of all EQ parameters for intuitive application of EQ. Use dedicated knobs to rapidly change Gain, Freq and Q values.



EQ Library
Use libraries for storing frequently used EQ settings. Presets provide easy way to get started with most common sources.



Comp Display
Large Compressor screen enables intuitive, graphical operation.



Comp Library
Use libraries for storing frequently used settings. Presets provide easy way to get started with most common sources.



Limiter Display
Large graphical screen provides easy, intuitive editing of Limiter parameters for Main L/R and AUX 1-16 buses.



AUX Sends Display
Overview screen for a Channel's AUX sends provides easy way to link buses for stereo operation and to set On/Off and the Pre EQ, Pre or Post send position for each bus.



Meter



Meter
Large overview screen provides quick view of all channel meters and fader positions.



Layer View
View and edit many of the parameters for all channels in the current fader layer.

Effect



EFFECTS
View and edit the 4 stereo, high-quality FX for channel/bus inserts such as the advanced channel strip; or for loop effects.



EFFECT EDIT (Reverb)
Various parameters allow precise and graphical setup of effects. User Setup can be stored to internal Memory.



FX Library
Use effects libraries for storing frequently used settings. Presets provide easy way to get started with each effect algorithm.



External Effect Insert
Configure up to 8 External Inserts for channels or buses using the Console's XLR inputs and outputs.



GEQ/PEQ Rack
Setup screen for the M-400's four dedicated 31-band Graphic EQs or 8-band PEQs. You can even use the console's faders for fast editing.

The high contrast color LCD makes it easy to make precise edits and change parameters for all of the M-400's functions. Dedicated, accessible buttons call up large displays for editing all important console processing, routing and other functions. All of the buttons and knobs and their logical layout are designed for fast and intuitive operation.

System & Utility



■ USB Memory Display
Assign sources and destinations and manage playlists for the USB Memory linear .Wav recorder.



■ Help Display
Onboard Help provides detailed "how-to" information on M-400 operation. No need to bring the manual to the show!



■ DCA Group
Assign channels or buses to a DCA so that their levels can be controlled with one Master DCA Fader.



■ Patchbay
Large, intuitive screen for routing any stage or console input to M-400 channels and assigning buses to outputs.



■ System
Setup screen for all basic system parameters.



■ User Display
Set up multiple Users each with their own level of parameter access, passwords etc.



■ Mute Group
Assign channels and buses to the 8 Mute Groups. Use this screen to turn groups On/Off.



■ Scene Memory Display
Total system recall is available using up to 300 scenes per project. Recall all M-400 settings or filter parameters on a scene-by-scene or global basis.



■ Talkback/Oscillator Display
Set up the Talkback bus destinations and edit Oscillator settings when doing room analysis.



■ Monitor Display
Assign sources to the Monitor bus and set up the Solo mode.

Upgrade Features

Ver. 2.0



■ Support for LCR Sound System
The LCR (Left-Center-Right) mode is supported as a direct response to customer requests. Simply enable the LCR mode in the system configuration to activate this feature.



■ Support for M-48 Personal Mixing System
The M-400 can be used to setup, configure and control multiple REAC-enabled M-48 Live Personal Mixers. The M-48 represents a breakthrough in professional personal monitoring and mixing.



■ Six Newly Added Vintage Effects
Access some of Roland's legendary vintage effects within the M-400. Original sounds used by engineers the world-over extends the range of live expression.

RE-201 / SDD-320 / SDE-3000 / SRV-2000 / SBF-325 / SPH-323



■ 8-band PEQ and RTA
Any existing 31-band Graphic EQ can be switched to an 8-band Parametric EQ. The Real Time Analyzer enables a quick look and instant adjustment of the acoustic characteristics of a venue.

Gate/Compressor Assignability - Up to 24 Gates and 24 Compressors can be assigned to any channel. Gates independent from Compressors.

Addition of 8 Matrices - Mix audio from AUX1 to AUX16, Main L/R and any two direct channels.

Output Assignability - Assign any channel, bus or matrix to any output port.

Delay and Tap Tempo - Delay Units parameter in msec, meters, feet and note. Tap tempo parameter for note timing.

ATT Control - ATT level can be controlled by preamp knob.

And More User Buttons, User Settings and Preferences, Additional Shortcuts and Workflow Improvements.

The Most Powerful Rack-Mountable Digital Mixing Console

V-Mixer
Mixing Console M-380

M-380 Mixing Console **New**

The M-380 is a compact and rack-mountable console with the same mixing engine as the M-400 and with REAC digital audio transfer technology. It enables a powerful and configurable mixing environment with high sound quality, intuitive operation and easy set-up for mobile applications or space-restricted installations.



Rack Mountable Size

Equipped with the M-400 mixing engine but rack mountable (12U)

Powerful Mixing Engine

48 Ch Digital Audio Mixer powered by REAC technology.
18 buses/ 8 matrices can be fully assigned from the patch bay.

Effects

4 dual-mono effects processors, and four 31-band GEQs/ 8-band PEQs.

Support for M-48 Personal Mixing System

The M-380 can be used to setup configure and control multiple M-48 Live Personal Mixer.

USB Memory Recorder

USB Recorder/ Player enables live recording and a music playback

USB Remote Control

Dedicated USB port for live or offline PC control using free M-380 RCS [remote control software] available from www.rolandsystemsgroup.net

MIDI/ RS-232C Remote Control

Full System Recall and User Administration

The M-380 allows setup flexibility and Portability



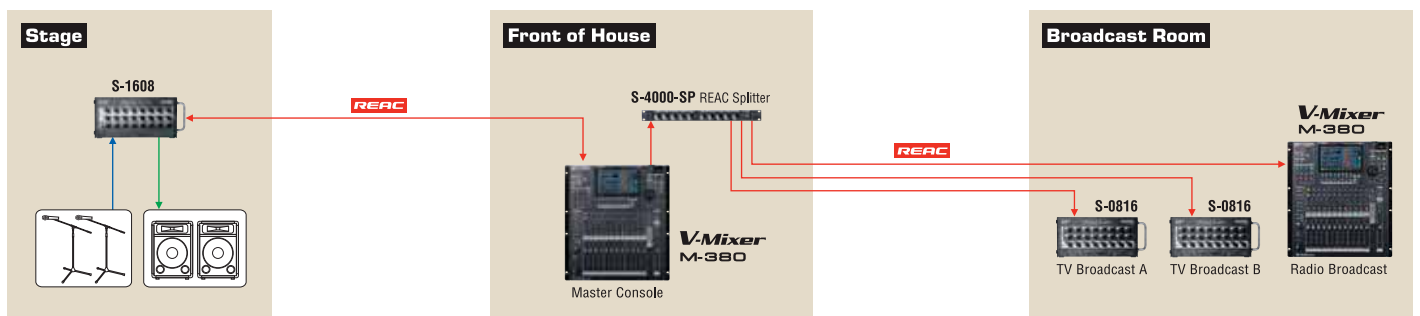
Desktop Size
[Dimensions] 482.0 (W) x 581.3 (D) x 220.6 (H) mm
19(W) x 22-15/16(D) x 8-11/16(H) inches



Rack mount Size
[Dimensions] 482.0 (W) x 231.3 (D) x 550.9 (H) mm
19(W) x 9-1/8(D) x 21-11/16(H) inches

Broadcast Setup

Here's an example of the advantages of REAC's ability to create digital signal splits. Using an M-380 for mixing and a split to an S-0816 Digital Snake and/or M-380 provides a variety of options in a broadcast suite.



Live Personal Mixing and Monitoring System

Personal Mixer

M-48 Live Personal Mixer **New**

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.

- **Memory**
- **Ambient Mic Volume**
- **Reverb SW, EQ (Treble, Bass), Limiter, Phones Volume**
Limiter protects your ears from sudden volume spikes.

- **Aux Volume**
- **Line OUT Volume**



- **Phones**
2 phones output and volume attenuator.

- **REAC Embedded Power Terminal**

- **Line OUT**
L/R balanced output and Recording out.

- **LED Dimmer**

- **AUX Input**

- **8 control knobs with LED indicator**
Enables control of up to 40 audio sources via 16 stereo groups.

- **Volume, PAN, 3-band EQ and Reverb send**

- **Ambient Mic**
Built-in ambient microphone delivers stage and audience sound to musician.

REAC 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.

S-4000D Splitter and Power Distributor **New**

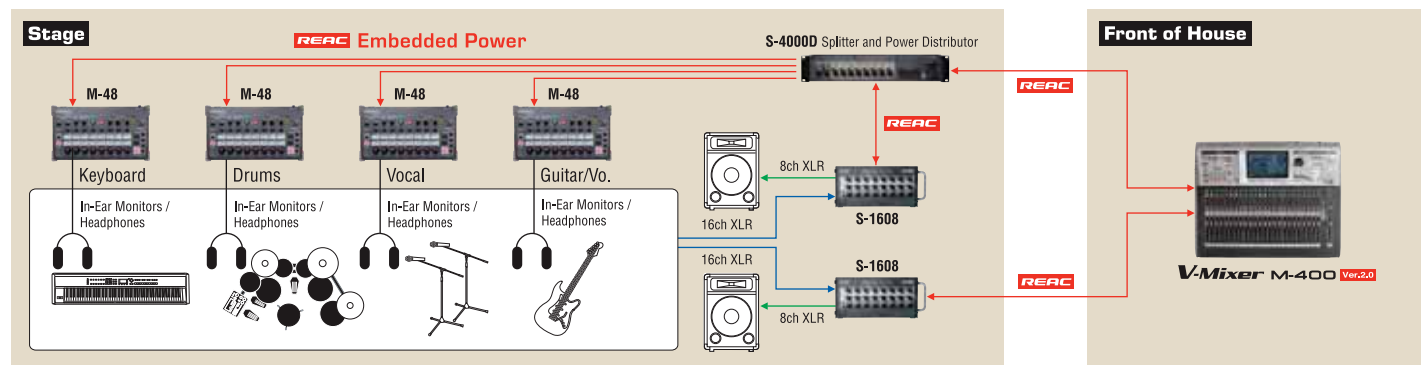


- Equipped with 10 REAC ports including 8 ports of REAC Embedded Power.
- Automatic detection of a REAC products. Power is not supplied if the device is not compatible with REAC Embedded Power.

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

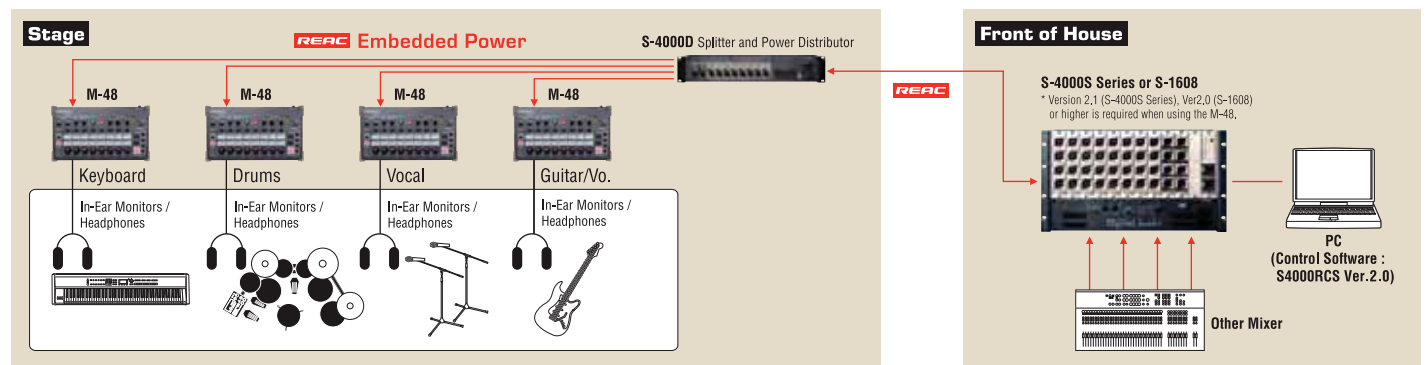
Personal Monitoring Setup

The M-48 enables control of up to 40 audio sources that can be managed via 16 stereo groups-assignable and unique per musician. The M-400 and M-380 can setup and control multiple M-48 via the S-4000D.



Personal Monitoring Setup with Other Mixers

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.



Simple and flexible digital snake stage units provide Superb Sound Quality.

Digital Snake

RSS Digital Snakes are an integral part of the V-Mixing System. Compact and portable, they offer many flexible configurations for any installation. The high quality 24-bit remote-controlled mic pre-amps enable digital conversion of the audio signal very close to the sources, providing the highest possible audio quality.

Digital Snake S-1608

The standard I/O unit for V-Mixing System with 16 inputs and 8 outputs

Analog Inputs

Discrete circuit design with high quality components and 24-bit AD conversion. The indicators show signal in, clip and +48V on/off.



Analog Outputs

24-bit DA conversion for main and monitor outputs

REAC Terminal

Input and Output terminal for REAC's Cat5e digital transfer. Tough and Durable Ethercon connectors by Neutrik® provide the highest possible system reliability.



Remote Terminal*

RS-232 terminal connects to the dedicated S-4000R remote controller or a computer installed with the free S-4000 RCS remote control software.

* Not required when using an M-400 or M-380 V-Mixer.

Mute All Outputs Button

When this button is pressed and held, all outputs will be muted for an easy way to connect or disconnect microphones or other sources.

REAC mode selection switch

Master	Outputs source audio to the Slave and Split devices. It receives Input from the Slave device.
Slave	Receives Input from and sends output to the Master device.
Split	Receives Input from all of the Master device's sources.

Digital Output (Optical)

Digital output for the source signals coming into Ch1 and Ch2.

Digital Snake S-0816

The I/O unit with 8 inputs and 16 outputs for expansion of output channels in V-Mixing System.



Digital Snake S-4000 S-3208

The I/O unit with 32 inputs and 8 outputs for applications requiring more physical inputs

Analog Inputs

Discrete circuit design with high quality components and 24-bit AD conversion.

Signal Indicator

Indicators for signal in, clip and +48V on/off.



Analog Outputs

24-bit DA conversion for main and monitor outputs

REAC Terminals

Redundant Input and Output terminal for REAC's Cat5e digital transfer. Tough and Durable Ethercon connectors by Neutrik® provide the highest possible system reliability.

REAC mode selection switch

Master	Outputs source audio to the Slave and Split devices. It receives Input from the Slave device.
Slave	Receives Input from and sends output to the Master device.
Split	Receives Input from all of the Master device's sources.

MIDI Terminals

Enables the remote control of musical instruments from external MIDI devices.

Remote Terminal*

RS-232 terminal connects to the dedicated S-4000R remote controller or a computer installed with the free S-4000 RCS remote control software.

* Not required when using an M-400 or M-380 V-Mixer.

Mute All Outputs Button

When this button is pressed and held, all outputs will be muted for an easy way to connect or disconnect microphones or other sources.

Multi-Channel Recording

One REAC cable enables full digital multi-channel recording of up to 40 channels.

The SONAR REAC Recording System provides the a comprehensive live recording, mixing, editing, mastering and delivery solution. The REAC driver enables users to record 40 channels from their Digital Snake/V-Mixer System directly into SONAR.

REAC Recording System

cakewalk
by Roland

SONAR V-STUDIO 700

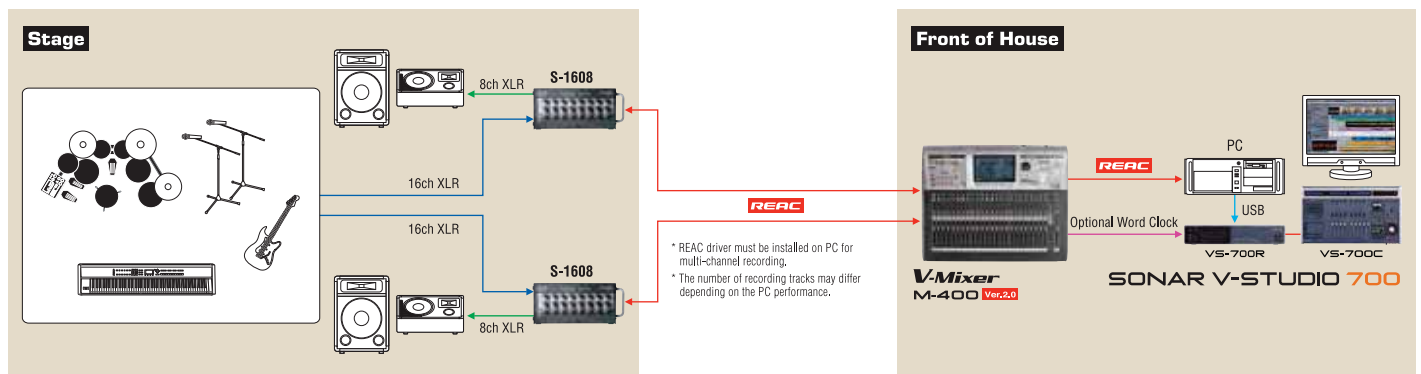


The SONAR V-Studio 700 is the ultimate recording solution for use with REAC systems. It includes the VS-700C V-STUDIO Console multifunction control surface, VS-700R V-STUDIO I/O audio interface and SONAR Producer software. The system represents the best that software and hardware have to offer with amazing control, integration, and sound quality. Striving to create the ideal music production environment, Cakewalk and Roland have built the ultimate DAW Digital Audio Workstation integrated with high-end tools. Used in conjunction with the RSS V-Mixing System or RSS Digital Snakes the REAC Edition of the SONAR V-Studio 700 provides the most comprehensive live recording, editing, mixing, mastering and delivery solution available. REAC driver technology enables users to record up to 40 channels of audio from an RSS V-Mixing System or RSS Digital Snake directly into a PC using a single Ethernet cable.



Recording Setup

Using the REAC Split port, a direct Cat5e connection can be made to a PC's Gigabit Ethernet port. Using Cakewalk's Sonar software up to 40 channels of audio can be recorded.



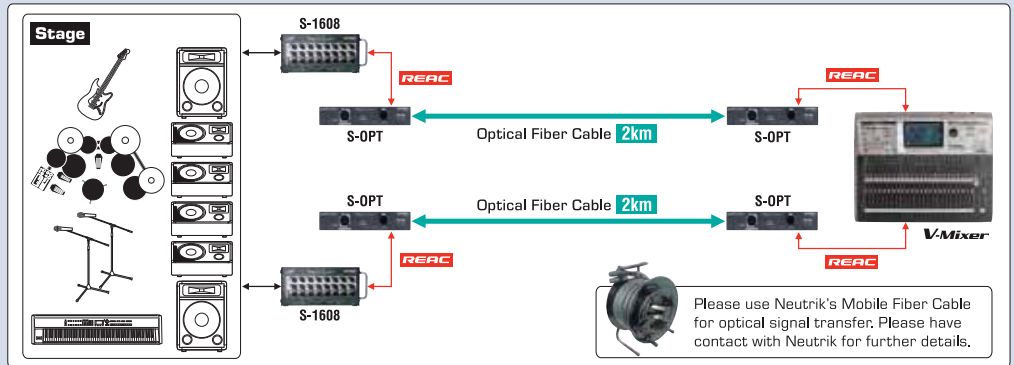
OPTIONS

■ S-OPT Optical converter offers long distance REAC audio transfer.

The optical converter converts multi-channel REAC signal to a digital optical signal and makes long distance transfer of up to 2km possible. Rugged, Neutrik® OpticalCon connectors provide highest possible system reliability.



S-OPT
REAC Optical Converter



■ S-4000-SP REAC Splitter enables splitting and extension of REAC signals.

Dual 5-port dedicated splitter for V-Mixing System provides highest possible reliability using Neutrik® Ethercon connectors and a dual power supply.



S-4000-SP
REAC Splitter

■ Crossover Ethernet cable with Neutrik® Ethercon connectors on both ends.



SC-W20F
20 meter Premium Cat5e Cable
SC-W100S
100 meter Cat5e Cable

■ 100m Cat5e cable on reel

100m Cat5e cable on reel designed for light weight, portable V-Mixing System. Compact and lightweight cable reel with SC-W100S cable pre-rolled.



W100S-R
100 meter Cat5e Cable

* Ethercon and OpticalCon are the registered trademarks of Neutrik®

SPECIFICATIONS

■ V-Mixer M-400/M-380

PROCESSING		OTHERS	
Number of Channels	48 inputs / 18 buses / 8 MATRIX	Display	800 x 480 dots Wide VGA backlit TFT color
Signal Processing	56-bit	Power Supply	AC 115 V, AC 117 V, AC 220 V, AC 230 V, AC 240 V (50/60 Hz)
AD/DA Conversion	24-bit / 44.1 kHz or 24-bit / 48 kHz	Power Consumption	M-400: 95 W, M-380: 75 W
Network Latency	2.8 ms (typical) * Total System Latency of audio signal from S-1608 inputs to outputs via M-400 / M-380's REAC ports (A or B). * Sample Rate: 48.0 kHz * Effects : No insert effects	Dimensions	M-400: 749.0 (W) x 626.0 (D) x 229.0 (H) mm, 29-1/2 (W) x 24-11/16 (D) x 9-1/16 (H) inches M-380: [Desktop] 482.0 (W) x 581.3 (D) x 220.6 (H) mm 19 (W) x 22-15/16 (D) x 8-11/16 (H) inches [Rack mount] 482.0 (W) x 231.3 (D) x 550.9 (H) mm 19 (W) x 9-1/8 (D) x 21-11/16 (H) inches
CONNECTORS		Weight	M-400: 19.8 kg, 43 lbs 11 oz, M-380: 14.0 kg, 30 lbs 14 oz
XLR Inputs (1 to 8)	XLR-3-31 type (balanced with phantom power)	Cross Talk @ 1kHz	XLR input jacks (1 to 8): -80 dB (PAD: On, Input gain: +10 dBu, typical) XLR output jacks (1 to 8): -100 dB (typical)
Talkback Mic Input	XLR-3-31 type (balanced with phantom power)	Nominal Input Level (Variable)	XLR input jacks (1 to 8): -65 to -10 dBu (PAD: Off) or -45 to +10 dBu (PAD: On) RCA input jacks (L/R): -18 to 0 dBu Talkback input jack: -50 to -10 dBu
RCA Inputs (L/R)	RCA Pin Type	Input Impedance	XLR input jacks (1 to 8): 14 k ohms, RCA input jacks (L/R): 10 k ohms, Talkback input jack: 41 K ohms
XLR Outputs (1 to 8)	XLR-3-32 type (balanced)	Non Clip Maximum Input level	XLR input jacks (1 to 8): +8 dBu (PAD: Off) or +28 dBu (PAD: On), RCA input jacks (L/R): +18 dBu, Talkback input jack: +8 dBu
Phone Output	Stereo 1/4 inch phone type	Nominal Output Level	XLR output jacks (1 to 8): +4 dBu (Load impedance: 10 k ohms)
Digital Outputs	Optical type x 1 and Coaxial type x 1	Output Impedance	XLR output jacks (1 to 8): 600 ohms, PHONES jack: 100 ohms
REAC Ports	RJ-45 EtherCon type x 3	Recommended Load Impedance	XLR output jacks (1 to 8): 10 k ohms or greater, PHONES jack: 8 ohms or greater
USB Ports	A type x 1 and B type x 1	Non Clip Maximum Output level	XLR output jacks (1 to 8): +22 dBu (1 kHz, 10 k ohms load) PHONES jack: 150 mW + 150 mW (1 kHz, 40 ohms load)
Remote Connectors	RS-232C (D-Sub 9 pin type) x 1 MIDI (5 pin DIN type) x 2 (Out / Thru & In)	Residual Noise Level (IHF-A, typical)	-88 dBu (All faders : Min)
Other Connectors	LAMP (XLR-4-31 type) x 1 (M-400 only), Grounding terminal, AC Input	Equivalent Input Noise Level (E.I.N.)	-126 dBu
INPUT / OUTPUT CHARACTERISTICS			
Frequency Response	XLR output jacks (1 to 8): -2 dB / +0 dB (20 k ohms load, +4 dBu) PHONES jack: -3 dB / +0 dB (40 ohms load, 130 mW)		
Total Harmonic Distortion + Noise	XLR output jacks (1 to 8): 0.05 % (typical), PHONES jack: 0.05 % (typical)		
Dynamic Range	XLR output jacks (1 to 8): 110 dB (typical)		

* When a REAC Splitter S-4000-SP 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 dependent upon the specifications of the splitting device, though the maximum delay amount for a single splitting device should be about 200 microseconds.

Digital Snake S-1608

Number of Channels	16 inputs / 8 outputs	Network Latency	375 microseconds when using REAC cable only (*) (AD - REAC - DA Latency: approx 1.2 ms)
AD/DA Conversion	24-bit / 44.1 kHz, 48 kHz, 96 kHz		
Frequency Response	-2 dB / +0 dB (@ +4 dBu, 20 Hz to 20 kHz)	Connectors	Analog Input x 16 (XLR type, balanced, phantom power) Analog Output x 8 (XLR type, balanced) Digital Output connector x 1 (Optical type) REAC Connector x 1 (RJ-45 EtherCon type) Remote Connector x 1 (RS-232C, DB-9 type)
Total Harmonic Distortion + Noise	0.05 % or less (PAD: On, Input Gain: +4 dBu, 22 Hz to 20 kHz)		
Dynamic Range	110 dB		
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	Indicators	POWER Indicator x 1, REAC Indicator x 1, REMOTE Indicator x 1, MUTE ALL OUTPUTS Indicator x 1
Input Impedance	14 k ohms	Power Supply	AC 115 V, AC 117 V, AC 220 V, AC 230 V, AC 240 V (50/60 Hz)
Nominal Output Level	+4 dBu, Max.+22 dBu	Power Consumption	45 W
Output Impedance	600 ohms	Phantom Power	+48 V (each input, remote controlled)
Recommended Load Impedance	10 k ohms or greater	Dimensions	401.0 (W) x 135.0 (D) x 177.0 (H) mm 15-13/16 (W) x 5-3/8 (D) x 7 (H) inches
Residual Noise Level (IHF-A, typ.)	-80 dBu or less		
Equivalent Input Noise Level	-128 dB		
		Weight	5.5 kg, 12 lbs 3 oz

*1 When a REAC Splitter S-4000-SP 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.

Digital Snake S-4000S-3208

Number of Channels	32 inputs / 8 outputs	Network Latency	375 microseconds when using REAC cable only (*) (AD - REAC - DA Latency: about 1.2 ms)
AD/DA Conversion	24 bit / 44.1 kHz, 48 kHz, 96.0 kHz		
Frequency Response	-2 dB / +0 dB (@ +4 dBu, 20 Hz to 20 kHz)	Connectors	Input: 32 (XLR type, balanced, phantom power, 4 ch input module x 8) Output: 8 (XLR type, balanced, 4 ch output module x 2) REAC: MAIN, BACKUP (RJ-45 EtherCon type) Remote Connector: 1 (RS-232C, DB-9 type) MIDI Connectors: IN, OUT (5-pin DIN type)
Dynamic Range	110 dB		
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	20 k ohms		
Nominal Output Level	+4 dBu, Max.+22 dBu	Indicators	EXT Indicator (External Power Supply Unit), INT Indicator, REAC Indicator, CTRL Indicator, ALARM Indicator, MUTE ALL OUTPUTS Indicator
Output Impedance	150 ohms	AC Power Supply	AC 115 V, AC 117 V, AC 220 V, AC 230 V, AC 240 V (50/60 Hz)
Recommended Load Impedance	10 k ohms or greater	DC Power Supply	+24 V (from optional external power supply unit : S-240P):
Residual Noise Level (IHF-A, typ.)	-90 dBu	Power Consumption	130 W
Equivalent Input Noise Level (E.I.N.)	-128 dB	Dimensions	482.0 (W) x 336.0 (D) x 266.4 (H) mm, 19 (W) x 13-1/4 (D) x 10-1/2 (H) inches
		Weight	17.0 kg, 37 lbs 8 oz

*1 When a REAC Splitter S-4000-SP 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.

M-48

Number of Input Channels	43 (40 in, STEREO AUX in, 1 AMBIENT MIC in)	Non Clip Maximum Output level	PHONES jacks (1, 2): 250 mW + 250 mW (1 or 2, 1 kHz, 40 ohms load) LINE OUT L / R jacks: +12 dBu (1 kHz, 10 k ohms load) LINE OUT REC L / R jack: +6 dBu (1 kHz, 10 k ohms load)
Number of Output Channels	4 (STEREO LINE out, STEREO PHONES out)		
AD/DA Conversion	24 bit / 96.0 kHz, 48.0 kHz, 44.1 kHz	Connectors	REAC port: RJ-45 EtherCon type AUX IN L / R jack: Stereo miniature phone type LINE OUT L / R jacks: 1/4 inch TRS phone type LINE OUT REC L / R jack: Stereo miniature phone type PHONES jacks: Stereo miniature phone type and Stereo 1/4 inch phone type
Nominal Input Level	AUX IN L / R: -16 dBu (at max volume)		
Input Impedance	AUX IN L / R: 10 K ohms		
Non Clip Maximum Input level	AUX IN L / R: +2 dBu		
Nominal Output Level	LINE OUT L / R: -6 dBu (LINE OUT Vol: Unity, Load impedance: 10 k ohms) LINE OUT REC L / R: -12 dBu (LINE OUT Vol: Unity, Load impedance: 10 k ohms)	Power Supply	DC +48 V (It is supplied by S-4000D.)
Output Impedance	PHONES jacks (1, 2): 10 ohms LINE OUT L / R jacks: 600 ohms LINE OUT REC L / R jack: 1 k ohms	Power Consumption	13 W
Recommended Load Impedance	PHONES jacks (1, 2): 16 ohms or greater (Composition impedance of 1 and 2) LINE OUT L / R jacks: 10 k ohms or greater LINE OUT REC L / R jack: 10 k ohms or greater	Dimensions	297.0 (W) x 171.0 (D) x 67.0 (H) mm 11-3/4 (W) x 6-3/4 (D) x 2-11/16 (H) inches
		Weight	1.5 kg, 3 lbs 5

S-4000D

Connectors	REAC Connector: RJ-45 EtherCon Type x 2	Power Supply	AC 115 V, AC 117 V, AC 220 V, AC 230 V, AC 240 V (50/60 Hz)
	REAC EMBEDDED POWER Connector: RJ-45 EtherCon Type x 8	Dimensions	482.0 (W) x 285.0 (D) x 87.8 (H) mm, 19 (W) x 11-1/4 (D) x 3-1/2 (H) inches
Indicators	REAC Power: Red x 8, Link: Green x 10, ACT: Orange x 10, Power: Blue x 1	Weight	4.2 kg, 9 lbs 5 oz

The cornerstone of Roland's Audio and Visual Solution



48 channels / 18 buses / 8 matrices / 56-bit processing