Architects & Engineers Specification

M-380 Digital V-Mixing System



The digital mixer shall be designed as an integrated system including Ethernet audio transmission, digital audio processing, integrated digital recording using an optional USB memory key, and digital mixing. The system shall have the ability to be expanded to a maximum of 90 physical inputs and 90 physical outputs using up to 2 input and output modules. The system shall have two Ethernet transmission ports that can each be connected to an input module comprising an 8-input stage box, a 16-input stage box or a modular 40-channel input box. The inputs shall be of very high quality and accept both line and microphone level inputs with individually selectable phantom power. The input gains or trims shall be controllable in 1 dB increments and these settings, as well as their phantom power settings, shall be remotely controllable from the mixing control surface. The gain and phantom power parameters shall be stored with the channel settings for recall later.

The mixing system shall include a mixing control surface that includes 13 touch-sensitive moving faders. It shall also include 13 Mute buttons, 13 Solo buttons and 13 Select buttons. Pressing the Select button shall return the display to the selected channel or bus's Edit screen. There shall be 4 buttons that assign 12 of the faders to control channels 1-12, channels 13-24, channels 25-36, channels 37-48 or the buses. A fourth button shall assign the faders to control the individual User Fader settings for the selected User. It shall also have a dedicated Touch Sense button for turning the touch sensitive fader function on and off. It shall also have a dedicated Sends on Fader button allowing fader control of each channel's send level to the selected bus. It shall also have 10 knobs dedicated to adjusting the channel and bus EQ parameters. It shall also have 16 buttons dedicated to choosing any of the 16 Aux buses. It shall also have a Help button. This button shall be used to access built-in educational and instructional data for the system's main features. This button shall be context sensitive, allowing direct access to instructional text for most parameters using that parameter's button.

The mixing control surface shall have 3 Ethernet ports. Two of the Ethernet ports, A and B, can be connected, using Cat5e or Cat6 cables, to stage units supporting 16 inputs and 8 outputs, 8 inputs and 16 outputs, or up to 40 inputs each. Using a gigabit switch, both of the cables can be split to support up to 40 output audio paths. The A port shall support 8 user output choices from any channel, bus or matrix plus up to 32 stage inputs. The third Ethernet port on the control surface shall also provide 8 user output choices from any channel, bus or matrix; plus up to 32 stage inputs. The B port shall support up to 40 output choices from any channel, bus or matrix.

The mixing control surface shall be able to mix up to 48 channels of audio to 16 Aux buses or a stereo Main bus. The audio path from each channel shall be selectable from the pre EQ, pre fader and post fader positions. It shall also provide 8 Matrices that accept inputs from all buses and up to 2 unique channels each. The sends to the Matrices shall be selectable from pre EQ, prefader and post fader positions.

The mixing control surface shall have 8 XLR mic/line inputs, 8 XLR line level outputs and stereo inputs and stereo digital outputs. The control surface shall provide up to 8 external insert paths, available from any channel, bus or matrix; using the surface's XLR inputs and outputs. The mixing control surface shall provide 5 bands of adjustable equalization on each of the 48 channels along with 24 assignable gates and 24 assignable compressors. It shall also provide 4 bands of equalization and a limiter on each of the 16 Aux buses and the Main LR bus. The mixing control surface shall include libraries for storing various channel, bus and system parameters. These libraries shall include a Channel library, Patchbay library, EQ library, and Gate and Compressor libraries. Each of these shall have at least 100 user storage patches. The mixing control surface shall provide 4 stereo digital effects processors each of which can also be configured as a dual mono processor. These processors shall be assignable to any channel, bus or matrix as an insert or as loop effects using an Aux bus. In addition it shall provide four 31-band graphic equalizers assignable to any of the buses or matrices.

The mixing control surface shall include 300 scenes that store all of the channel, bus and processing parameters. It shall also provide 16 user buttons that can be assigned to direct scene recall, the tempo parameter for a processor configured as a digital delay, and other parameters. The mixing control surface shall also include an XLR input with phantom power to be used for a talkback microphone. The talkback microphone input shall be assignable to any or all Buses or Matrices. There shall also be an onboard tunable Oscillator and Noise Generator assignable to any Buses or Matrices. It shall also have a large, color, dimmable backlit 480x800 TFT screen. It shall also provide a connector designed for an optional console light.

The mixing control surface shall also have a USB slot that will support a USB storage key. The system shall support direct 16-bit, .linear wav file recording or playback via this USB key connected to this port. The USB key shall also be used as storage for console parameters including all libraries and scenes. The mixing control surface shall also support the creation of an Administrator password and an unlimited number of individual user profiles which shall be stored to, and require the use of, a USB key for access. The Administrator shall be able to restrict any user from accessing certain or all faders, and a range of mixing system parameters. Each user shall also have their own assignment for the 16 User buttons and the 12 User faders. These faders shall be accessible from a User Fader bank button.

The mixing control surface shall provide 8 mute groups and 8 DCA groups. The DCA groups shall provide level control from one DCA master fader of a user-assignable collection of channels and buses. The mixing control system shall provide a balanced headphone output. This output shall be assigned to the Monitor bus, which shall also be available as an output to any physical outputs in the system. The headphone output shall have an individually adjustable output level control. The mixing control surface shall also provide meter screens showing channel and bus levels. The channel levels shall be selectable with choices including post preamp, pre fader and post fader. Each fader shall also have a companion LED meter ladder that displays that channel's levels.

The mixing control surface shall have a USB port that, when connected to a PC computer loaded with control software, can be used to control the channel, bus, effects and other parameters of the whole mixing system.

The mixer shall be mountable in a 19" rack.

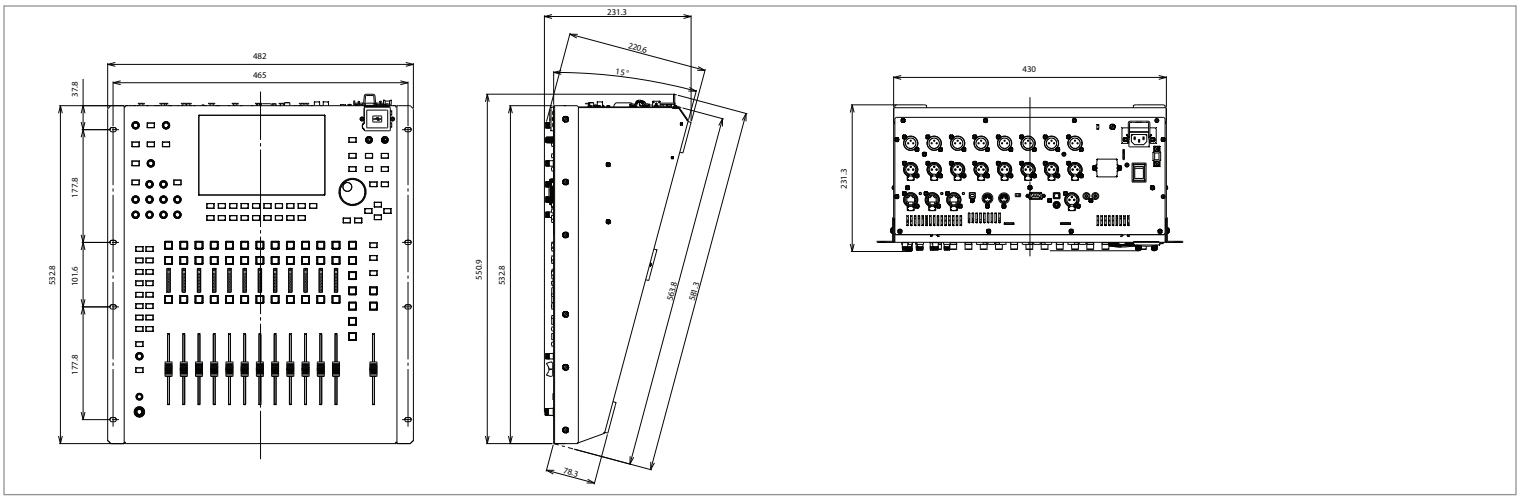
The system shall be a Roland V-Mixing System including an M-380 mixing control surface and the appropriate input and output modules.

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M-380 Digital V-Mixing System

V-Mixer M-380 Dimensions



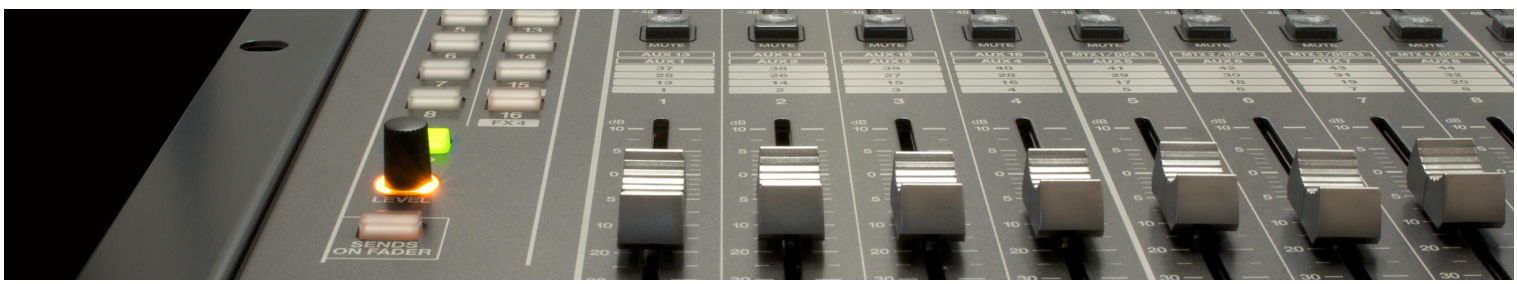
V-Mixer M-380 Main Specifications

PROCESSING	
Number of Channels	48 inputs / 18 buses / 8 matrices
Signal Processing	56-bit
AD/DA Conversion	24-bit / 44.1kHz or 24-bit / 48kHz
Network Latency	2.8 ms (typical) * Total System Latency of audio signal from S-1608 inputs to outputs via M-400's REAC ports (A or B). * Sample Rate: 48.0 kHz * Effects : No insert effects
CONNECTORS	
XLR Inputs (1 to 8)	XLR-3-31 type (balanced with phantom power)
Talkback Mic Input	XLR-3-31 type (balanced with phantom power)
RCA Inputs (L/R)	RCA Pin Type
XLR Outputs (1 to 8)	XLR-3-32 type (balanced)
Phone Output	Stereo 1/4 inch phone type
Digital Outputs	Optical type x 1 and Coaxial type x 1
REAC Ports	RJ-45 EtherCon type x 3
USB Ports	A type x 1 and B type x 1
Remote Connectors	RS-232C (D-Sub 9 pin type) x 1* MIDI (5 pin DIN type) x 2 (Out/Thru & In) * Serial remote control is not available on version 1 firmware
Other Connectors	LAMP (XLR-4-31 type) x 1, Grounding terminal, AC Input
INPUT / OUTPUT CHARCTERISTICS	
Frequency Response	XLR 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	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)
Cross Talk@1kHz	XLR input jacks (1 to 8): -80dB (Pad: ON, Input gain: +10 dBu, typical) XLR output jacks (1 to 8): -100 dB (typical)
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
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
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
Nominal Output Level	XLR output jacks (1 to 8): +4 dBu (Load impedance: 10 k ohms)
Output Impedance	XLR output jacks (1 to 8): 600 ohms, Phones jack: 100 ohms
Recommended Load Impedance	XLR output jacks (1 to 8): 10 k ohms or greater, Phones jack: 8 ohms or greater
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)
Residual Noise Level (IHF-A, typical)	-88 dBu (All faders : Min)
Equivalent Input Noise Level (E.I.N.)	-126 dBu
OTHERS	
Display	800 x 480 dots Wide VGA backlit TFT full color
Power Supply	AC 115 V, AC 117 V, AC 220 V, AC 230 V, AC 240 V (50/60 Hz)
Power Consumption	75 W
Dimensions	482.0 (W) x 231.0 (D) x 551.0 (H) mm, 19 (W) x 9-1/8 (D) x 21-11/16 (H) inches
Weight	14.0 kg, 30 lbs 14 oz

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

(0dBu=0.775Vrms)



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