Roland

O·H·R·C·A

Open
High
Resolution
Configurable
Architecture

M-5000 LIVE MIXING CONSOLE

Announcing a new era in live mixing consoles: O·H·R·C·A

In a rapidly changing world, the ability to adapt is needed to excel.

OHRCA brings the power of adaptability to the world of live audio mixing. It conforms to the needs of both the application and the operator
by delivering 128 freely definable audio paths, flexible user interface and workflow, expandable protocols, and multi-format I/O choices
— all delivered at a pristine 24-bit / 96kHz sound quality.

This achievement in an ideal frame size opens a new generation in live sound solutions.

REAC   Dante™   MADI   WSG

O·H·R·C·A

Open
High
Resolution
Configurable
Architecture

Configurable Architecture

· 128 audio paths assignable as channels, auxes, groups, matrices, etc
· Easily adaptable to many applications including front-of-house, monitor position, or broadcast.

Extensibility

· Unrestricted patching for up to 300/460 inputs and 296/456 outputs(96kHz/48kHz)
· Support for a wide range of protocols and formats including REAC, Dante, MADI, and Waves SoundGrid
· Full compatibility with the family of Roland Professional Audio snakes, personal mixing, and multi-channel playback/recording

High Resolution

· Outstanding 24-bit, 96kHz sound quality
· High-precision 72-bit linear summing circuitry
· High-end discrete preamps onboard and available in remote snake options

Flexible Workflow

· 12" touch screen with "touch and turn" operation
· 28 freely scrollable, isolatable, or assignable faders
· Numerous knobs and buttons, both contextual and assignable, to support rapid response
· Dedicated, freely assignable user section

128 freely definable audio paths unlock a completely new realm of flexibility
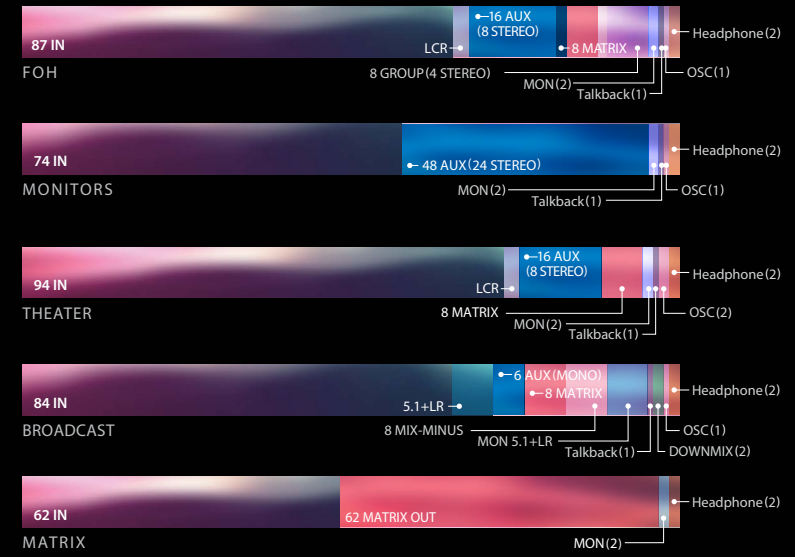
A primary feature of OHRCA is its configurable architecture.

The console's internal mix architecture is not fixed and can be freely defined within a range of up to 128 input/output channels/busses.

This allows the user to essentially "build" a console structure based on the immediate needs of the application.

This not only makes for a console that can accommodate a diverse range of applications, but also one that accommodates high levels of flexibility

for precise response to dynamically changing conditions venue to venue.

MIXER CONFIGURATION Setup Screen

Examples of Configurable Architecture

Create the mixer you need.

Roland has achieved a revolutionary new internal architecture that gives the operator free rein to define their own mixer structure. With 128 audio paths on standby, mixing channels, AUXs, Matrices, subgroup buses, MIX-MINUS buses, or other input output needs can be allocated to match the need at hand. This enables OHRCA to accommodate a diverse array of uses, including FOH console operations, monitor position, theaters, broadcasting, and more. The versatile internal capability of having a configurable architecture delivers the ability to adapt to ever-changing needs and functions.

Channels and buses settable in Mixer Configuration

· INPUT CHANNEL (MONO/STEREO) · MAIN (5.1/LCR/LR/MONO + DOWNMIX)
· SUB GROUP (MONO/STEREO) · AUX (MONO/STEREO)
· MIX MINUS (MONO/STEREO) · MATRIX· MONITOR (5.1/LCR/LR)
· TALKBACK, TALKBACK RTN, OSCILLATOR, HEADPHONES

Configurable Architecture

Extensibility

Adaptable to numerous audio networks and I/O requirements

Expansion options including Dante, MADI, Waves SoundGrid, and additional REAC open the door to endless configurations and applications.
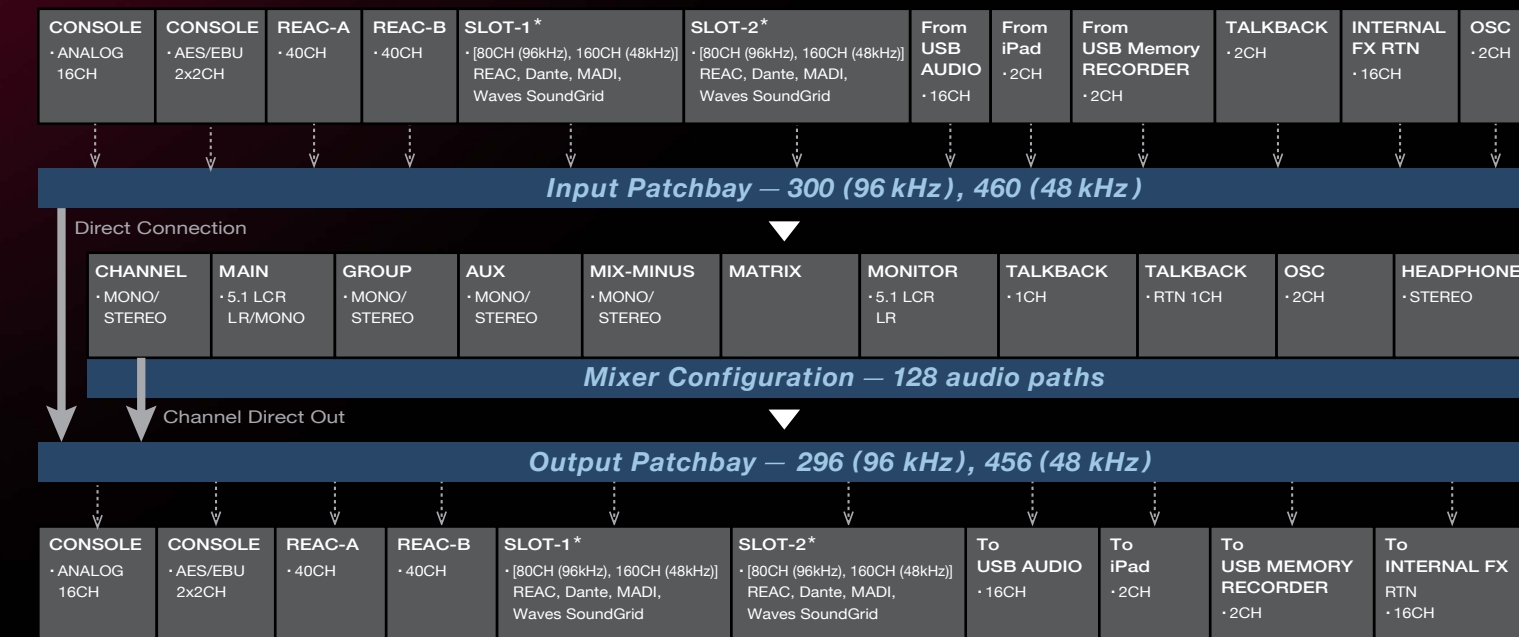
Expansion slots also future proof the console by being ready to adapt to emerging standards.

Up to 300 inputs and 296 outputs (460 inputs and 456 outputs at 48kHz) are managed in separate patchbays and can be used independently of the mixer.

Any input can be patched to any or multiple outputs, including control[+] of the gain and phantom power, without having to be patched through a mixing channel.

OHRCA makes it possible to control an enormous number of input and output channels across multiple protocols and formats.

+ Only REAC connection

CONSOLE	CONSOLE	REAC-A	REAC-B	SLOT-1*	SLOT-2*	From USB AUDIO	From iPad	From USB Memory RECORDER	TALKBACK	INTERNAL FX RTN	OSC
·ANALOG 16CH	·AES/EBU 2x2CH	·40CH	·40CH	·[80CH (96kHz), 160CH (48kHz)] REAC, Dante, MADI, Waves SoundGrid	·[80CH (96kHz), 160CH (48kHz)] REAC, Dante, MADI, Waves SoundGrid	·16CH	·2CH	·2CH	·2CH	·16CH	·2CH

Input Patchbay — 300 (96 kHz), 460 (48 kHz)

Direct Connection

CHANNEL	MAIN	GROUP	AUX	MIX-MINUS	MATRIX	MONITOR	TALKBACK	TALKBACK	OSC	HEADPHONE
·MONO/ STEREO	·5.1 LCR LR/MONO	·MONO/ STEREO	·MONO/ STEREO	·MONO/ STEREO		·5.1 LCR LR	·1CH	·RTN 1CH	·2CH	·STEREO

Mixer Configuration — 128 audio paths

Channel Direct Out

Output Patchbay — 296 (96 kHz), 456 (48 kHz)

CONSOLE	CONSOLE	REAC-A	REAC-B	SLOT-1*	SLOT-2*	To USB AUDIO	To iPad	To USB MEMORY RECORDER	To INTERNAL FX
·ANALOG 16CH	·AES/EBU 2x2CH	·40CH	·40CH	·[80CH (96kHz), 160CH (48kHz)] REAC, Dante, MADI, Waves SoundGrid	·[80CH (96kHz), 160CH (48kHz)] REAC, Dante, MADI, Waves SoundGrid	·16CH	·2CH	·2CH	RTN ·16CH

*Expansion slot architecture is capable of 160×160 channels at 48kHz.

REAC

REAC—Powerful audio transfer and control technology

REAC (Roland Ethernet Audio Communication) is Roland's original technology for low latency, high quality digital audio transfer and control - 40 inputs by 40 outputs (80 total) at 24-bit 96kHz uncompressed quality. REAC is an Ethernet based technology that enables multiple components to be easily integrated using lightweight and inexpensive Cat5e/6 cable.
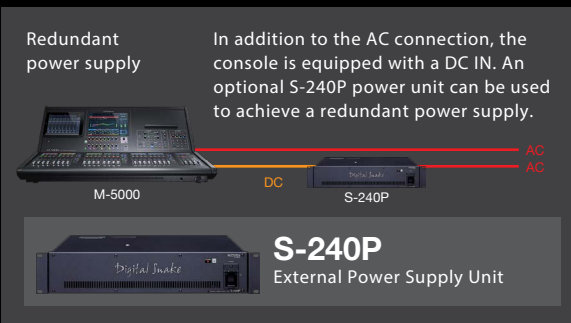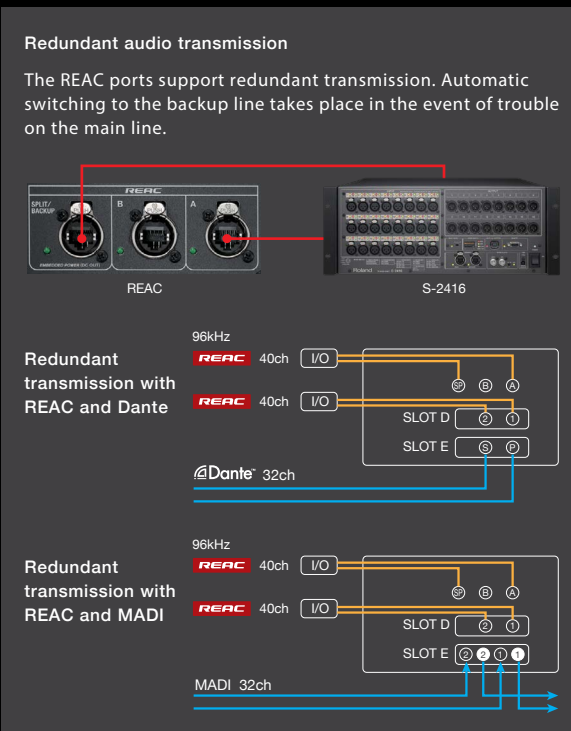
Extensibility

Expandable support for REAC, MADI, Dante, Waves SoundGrid, and other future formats and solutions.

In addition to two AES/EBU input/outputs plus 16 local I/O ports on the rear panel, the console provides two slots for optional expansion cards. Installing REAC, Dante, MADI, Waves SoundGrid, and other expansion cards makes a diverse range of systems possible. Installing one REAC board enables input and output on an additional 80 channels at sampling rates of 44.1kHz, 48kHz, and 96kHz, with a second REAC card boosting the number of additional channels to 160×160. Adding a Dante card enables full-duplex two-way communication on a maximum of 64 channels at 48kHz (32 channels at 96kHz). What's more, adding an XI-WSG module and connecting to a SoundGrid server makes it possible to use the powerful family of Waves plug-ins.

Redundant REAC lines can be created by connecting both a main and backup line. If the main line experiences a problem, switchover to the backup line takes place with no interruption in audio. Similar audio redundancy is also possible for REAC, MADI, or Dante cards installed in the expansion slots. In addition, redundant power is made possible by connecting an optional S-240P power unit to the DC input connector.

Expansion Cards (Optional)

REAC   @Dante   MADI   SOUNDGRID

Redundant audio transmission

The REAC ports support redundant transmission. Automatic switching to the backup line takes place in the event of trouble on the main line.

REAC   S-2416

Redundant transmission with REAC and Dante

96kHz
REAC 40ch I/O
REAC 40ch I/O
SLOT D
SLOT E
@Dante 32ch

Redundant transmission with REAC and MADI

96kHz
REAC 40ch I/O
REAC 40ch I/O
SLOT D
SLOT E
MADI 32ch

Redundant power supply

In addition to the AC connection, the console is equipped with a DC IN. An optional S-240P power unit can be used to achieve a redundant power supply.

M-5000   DC   S-240P   AC / AC

S-240P
External Power Supply Unit


High Resolution

Meticulous attention to processing detail, maintaining smooth fidelity with all the warmth and sparkle of the original sound.

An uncompromising commitment to the purity and clarity of sound extends to every aspect of the internal architecture and processing.
As befits this flagship model, it starts with a high sampling rate of 96kHz. The discrete circuitry was precisely designed with careful component selection and circuit architecture, separation of analog and digital sound modules, 72-bit linear summing circuit, and more.
We aimed for and have achieved unprecedented high sound quality through a rigorously uncompromising commitment to getting every detail right.
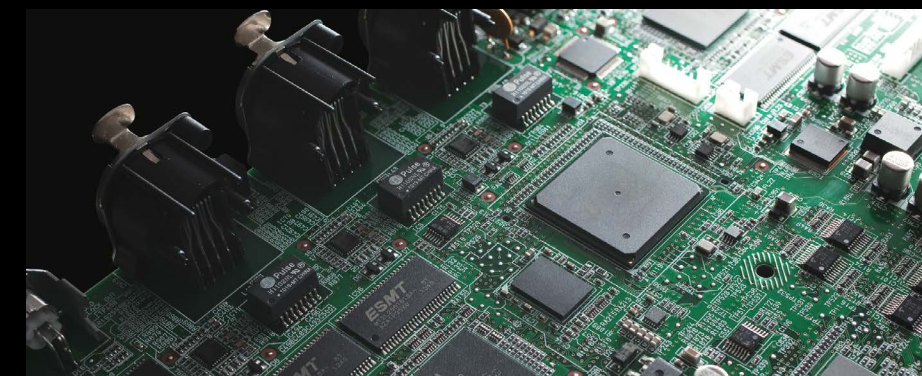
Optimized internal processing achieved through FPGAs and custom DSPs.

Audio processing is optimized by using FPGAs that make high-speed computation for the mixing section possible and high-precision custom DSPs for the effects section. By ensuring a 72-bit linear capacity for the summing circuit that determines the sound quality of digital mixing, we have achieved internal audio processing that remains failure free from low volume levels to high. The effects section also adopts our own innovative 32-bit floating-point processing optimized for computational accuracy, enhancing both dynamic range and precision. The equalizer uses state-variable filters that have a proven track record in analog circuitry as well as high-precision computing power that generates zero noise — even when parameters are changed. For the dynamics section, a high-precision exponential circuit is used, accomplishing sophisticated level control.
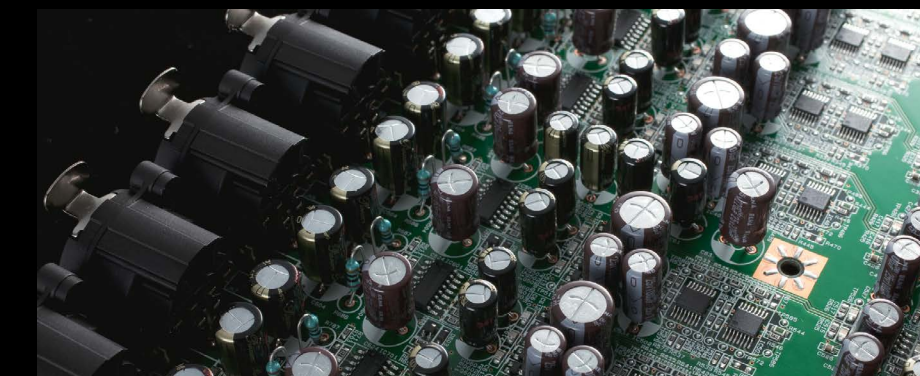
Analog input/output and internal circuitry dedicated to uncompromising sound purity.

Analog input and output features 24-bit, 96kHz AD/DA converters. The mic amplifier features a revised discrete architecture with rigorously selected components. The design considerations include separate analog and digital sound modules and audio circuitry thoroughly designed from input to output achieving a sound quality befitting a flagship console.

Phenomenal sound quality through a high sampling rate of 96kHz.

Combining the console with Roland Digital Snakes that similarly support 96kHz delivers high-quality sound transmission at an extremely high resolution. This results in sound of the highest purity across all frequencies, from input to output.

A user interface with the ability to adapt to the preferences of the engineer.

Despite its compact dimensions, the surface design is configured in a highly intuitive manner. The basic concept behind the interface is "freedom" ——accommodating the individual workflow of every engineer to the greatest extent possible.

The M-5000 is equipped with a 12" full-color touch screen, 28 channel faders in four areas, multifunction knobs and buttons, and a user-assignable section.

Fast and accurate operation is achieved by a design focused on the balance between usability and flexibility.

"Touch and turn" operation centered on a 12" touch screen.

The 12" full-color touch screen uses a flat design and vector graphics for clear and vivid display of information. The 16 encoders arranged under the screen feature rings whose colors change according to their assigned functions to match on-screen parameters. The "touch and turn" system of touching the desired parameter and turning the selected knob achieves fast, intuitive operation.

Organic EL displays.

The channel and user-assignment displays use bright, full-color organic EL displays that offer excellent visibility in any light.

28 channel faders in 4 banks.

The M-5000 features three banks of eight faders, plus one bank of four assignable faders -- 28 faders in all. A horizontally scrollable five-layer design (input channel, DCA bus, and User 1 to 3) has been adopted for the fader banks. Each of the three eight-fader banks are equipped with an Isolate function that enables scrolling and layer switching independently or in tandem with other fader banks. Different channels can be assigned to each bank, such as input channels to area A, DCAs to B, and output buses to C. What's more, an Anchor function allows presetting often-used fader scrolling positions for fast recall or "jump" points.

Four assignable faders.

The four assignable faders provided at the right edge of the surface can be freely assigned to master output, lead vocals, and other vital input channels, enabling dedicated control at any time.

User-assignable section.

The right side of the surface features a user-assignable section that permits assignment of various parameters. This section, comprising four encoders, eight buttons in 3 banks, and an organic EL display, lets the user assign key functions for quick access.

A variety of intuitive features in direct response to sound engineers requests

Set three inputs per channel with full backup support

Three inputs can be set for each input channel of the console: primary input (IN), alternate (ALT) and track input (TR). For example, assigning the main vocal mic to "IN" and a backup mic to "ALT" allows for instant switch-over on the CH EDIT screen in the event of a mic failure. "TR" assignment is also available for backup audio as well as recording or virtual rehearsal/playback from a Roland R-1000. This is convenient if running recorded rehearsal content and also being able to easily patch in a previously captured track. Along with individual settings at the CH EDIT window, the system also supports global switching via scene setups.

Dynamics, Equalizer, and signal delay for both inputs and outputs

Input channels, AUX, Matrix, Group, and Main Out are switchable between mono and stereo, The signal flow for each is provided

with high and low-pass filters, two independent Dynamics sections (with Compressor, Gate, and Expander selectable for each), a 4-band fully-parametric equalizer, and signal delay. Full-featured audio processing is performed not just at the input stage, but at the output stage as well. Effect insertion points can be set both before and after the Dynamics and EQ blocks.

Dynamics and EQ sections that permit reordering

The two Dynamics blocks can be used simultaneously enabling, for example, a compressor at an earlier stage and de-esser at a later stage. The sequence of the Dynamics and EQ sections can also be reordered.

A Channel Link function that allows up to 12 Group settings

The Channel Link function permits freely linking parameters for multiple channels. Channels are linked by going to the CHANNEL LINK window and selecting a LINK group, then successively registering each channel by pressing the SEL button above its fader, making it possible to change the parameters to be edited all at once. Linkable channel parameters can be registered for each Group enabling operations such as individually linking EQ, Dynamics, and other parameters or selecting ALL to sync all parameters allowing setup of parameters for multiple channels in a single operation.

Mono/stereo-settable input/output channels

Input and output channels can be set as either mono or stereo in the channel edit mode. Channels used for stereo can be made stereo pairs for input, not just adjacent channels.

Main Out supports 5.1 surround, LCR, and LR. Built-in surround panning and stereo downmix

As with the Input channel, the Main Out bus has two Dynamics and EQ blocks that can be switched in and out. Effect insertions are settable as well. In addition, 5.1 surround, LCR, and LR can be selected as output destinations and simultaneous stereo

downmix output is possible when in 5.1-channel mode. The 5.1 output also supports surround panning, and when using LCR output, LCR PAN can be used to set the output balance for left, center, and right.

Monitor output supporting 5.1-channel surround

As with Main Out, monitor output is provided on two types of buses: Monitor 1, which supports 5.1-channel surround, and stereo-compatible Monitor 2. For 5.1-channel monitoring, individual delay and an Alignment function allowing level adjustment are built in for LCR, LEF, Ls, and Rs. Moreover, Monitor 1 and 2 each have an Insert circuit. A flat monitor environment can be created by assigning graphic equalizers to monitors.

Built-in Sub-Group bus

The M-5000 is equipped with a Sub-Group bus for using POST Fader to send signals from the desired channels. As on the other output buses, Dynamics, EQ, Delay and Insert Effects can be used to adjust the sound.

Mix-Minus function

The M-5000 features a Mix-Minus (minus one) function, indispensable to recording and relay feeds. The required number of outputs from this can be set as desired.

24 DCAs

The M-5000 includes 24 DCAs. These are useful when globally controlling a large number of input channels, such as a string section or drums.

8 MUTE groups

Eight sets of MUTE groups are available. Registering these in the user-assignable area makes it easy to turn muting on and off at the single touch of a control.

8 stereo multi-effects

The M-5000 features a total of eight stereo multi effects for input and output. These can be inserted and used at any desired point in input channels, AUX's, Matrices, Groups, and Main Outputs. The multi-effects include Digital Reverb, Delay, Multi-band Compressor, and Dynamic EQ, and are modeled on leading Roland effect processors that include: the SRV-2000, SDE-3000, SDD-320, RE-201, CE-1, SPH-323 and SBF-325. In addition, Distortion and Delay (digital and analog) modeled on BOSS compact pedals are also included.

32 graphic and parametric equalizers

Graphic equalizers and parametric equalizers are independent of the multi-effects. Up to 32 graphic and parametric equalizers can be used simultaneously. As with the Channel Link function for inputs, the setting of graphic and parametric equalizers can be changed at the same time.

Two selectable Solo systems

The monitor feed is provided with two stereo solo buses. For example, Solo 1 can be used for stage monitor speakers, and Solo 2 can be used for in-ear monitors. Solo 1, Solo 2, or Solo 1+2 is selectable. The headphones bus can also select either Monitor 1 and 2 to use as the source for monitoring and features a dedicated delay as well. This allows for sound alignment with FOH or other configurations.

Solo In Place function

Pressing and holding the Solo In Place button for at least two seconds activates the function. Switching on a solo on an input channel during Solo In Place mutes the other input channels and outputs only the solo-on input channel to the routing destination.

Two audio analyzers

Two 31-band audio analyzers are provided for the console and dedicated RCS. Each can be assigned not only to the desired bus output, but to inputs as well.

External control using GP I/O

The rear panel is equipped with eight GP I/O input connectors (including TRS phone jacks) and 12 GP I/O output connectors for external control. Latch and momentary settings are possible. These can be used for beginning CD playback on fader start and preventing incorrect operation while live on the air. They also make possible a wide range of control, including setting delay times by tapping, switching monitor speakers on and off by means of an external cough switch, monitor interrupts with dimmer during talkback, and more.
*Available in Q2, 2015

System layout using the built-in REAC master/slave modes

OHRCA features a slave mode in addition to a master mode. This makes two-way transmission of audio input and output possible between two OHRCA consoles, M-480, M-300, M-200i, or other V-Mixers. Settings allow
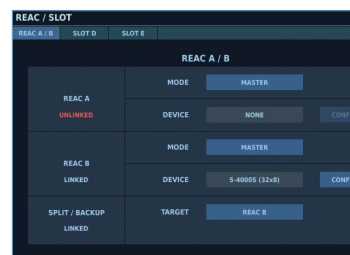
input to the master console using output from a slave deck, or vice versa.

Talkback settings for up to 3 locations

Three Talkback systems are provided as output destinations making communication possible between three locations, such as FOH and the monitor position as well as between FOH and a relay vehicle. During talkback return, the desired TALK switch can be made to flash to indicate the call source. In addition, the amount of volume reduction performed by the Monitor Dimmer function during talkback can be adjusted individually for Monitor 1 and Monitor 2.
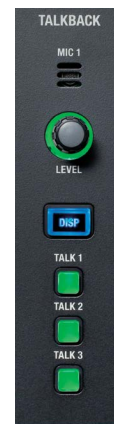
A variety of built-in control interfaces, including RS-232C, MIDI, and Remote

OHRCA offers full support for RS-232C, MIDI, and other control command systems. The Remote connector allows remote operation over a LAN connection from a Windows or Mac computer using the RCS program.

Support for word clock input and output

The console is equipped with a word clock connector, essential for system configurations using multiple digital devices.

Lamp connector

The console is equipped with an XLR-4-31 type connector for supplying power to a third-party gooseneck lamp (DC 12 V/500 mA).

Remote Control and Recording

Remote Control Software (RCS)

Use the M-5000 RCS program to operate the console from a computer (Mac/Windows). Connection can be made via USB or REMOTE connector, allowing operation over a LAN. The GUI for the M-5000 RCS allows multiple windows, and features support for high resolution displays and other optimizations. This enables use of a second display for viewing even more windows such as a large meter view of inputs and outputs.

＊The M-5000 RCS is available as a free download from Roland's website.
＊Available in Q2, 2015

Remote control using an iPad

The dedicated M-5000 Remote app supports remote control from an iPad. Any of three methods can be used for connecting the iPad: a) wired hookup using the Dock connector, b) through a router connected to the LAN port, or c) direct ad-hoc connection using the a Wireless USB LAN Adapter. Also, two-channel recording and playback using the Dock connector for iPad attachment is supported as well. The remote-control iPad can be used to perform recording and playback, and input sources and output channels can be assigned as desired. The GUI for the iPad

app features full suport of Retina displays enabling crystal clear graphics.

Built-in Engineering Monitor function

For the monitor engineer using M-48 Personal Mixers, the M-5000 offers an Engineering Monitor function that mirrors the musician's M-48 enabling the engineer to check the mix and hear exactly what the musician is hearing. The M-5000 allows selection of the REAC A or B port for the monitor feed, and an M-48 unit can be connected directly to the M-5000's backup port which is equipped with Embedded Power.   ＊Available in Q2, 2015

M-48 Personal Mixer being used an an Engineer's Monitor, powered by the Backup port

M-5000 Remote
Dedicated iPad app for remote control
Free download from Apple Store

＊Available in Q2, 2015

Configuration of personal mixing/monitoring solution

Personal mixing/monitoring for every musician can be achieved by using the M-48 personal mixer with its 40-channel mixing engine. ＊Available in Q2, 2015

A 16x16 USB audio interface

The M-5000 features a 16-in/16-out USB Audio interface function enabling 16-channel recording and 16-channel playback using a DAW.

Recording and playback using an R-1000

Connecting an R-1000 delivers playback and recording on up to 48 channels (at 48kHz; 24 channels at 96kHz). This enables the operator to put R-1000 output on standby at the SUB input (TR) on the M-5000 for virtual rehearsals, redundancy, or track playback. What's more, the M-5000 is capable of remotely operating multiple R-1000 units, enabling successive playback from song files and stacked, synchronized units for more tracks.
(e.g. 2 x R-1000 deliver 48 tracks at 96kHz).

R-1000 48 Track Recorder/Player

S-4000S-3208
32×8 Modular Stage Unit

- 32 Mic/Line Inputs and 8 +4 Line Level Outputs
- Outstanding 24-bit, 96kHz sound quality
- High quality XR-1 mic preamps provide superb sound with lots of headroom
- Redundant Ethernet ports with rugged Neutrik Ethercon connectors offer seamless switching to backup cable with no loss of audio

S-4000S-0832
8×32 Modular Stage Unit

- 8 Mic/Line Inputs and 32 +4 Line Level Outputs
- Outstanding 24-bit, 96kHz sound quality
- High quality XR-1 mic preamps provide superb sound with lots of headroom
- Redundant Ethernet ports with rugged Neutrik Ethercon connectors offer seamless switching to backup cable with no loss of audio

S-4000S-MR
Digital Snake Modular Rack Chassis

- Modular rack chassis with no preinstalled In/Out modules
- Designed for custom configurations such as 24x16 and 40x0

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

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-2416
24×16 Stage Unit

- 24 input x 16 output analog + 8 input x 8 output digital (AES/EBU)
- Outstanding 24-bit, 96kHz sound quality
- 2 REAC ports to either cascade additional snake or for redundant connection
- Word clock in & out

S-1608
16 × 8 Stage Unit

- 16 inputs x 8 outputs Outstanding 24-bit, 96kHz sound quality
- Compact, floor-based or rack-mountable design

S-0816
8 x 16 Front of House Unit

- 8 inputs x 16 outputs
- Outstanding 24-bit, 96kHz sound quality
- Compact, floor-based or rack-mountable design

S-0808
8 x 8 Input / Output Unit

- 8 inputs x 8 outputs
- Compact, light-weight, rugged
- External battery powered or embedded power over REAC (PoE)
- TRS and Hi-Z inputs

S-4000M
REAC Merge Unit

- Merge up to 4 REAC devices into a single REAC stream
- Power REAC devices supporting embedded power
- Assign channels automatically with auto map function

XI-REAC XI-DANTE
XI-MADI XI-WSG

XI-REAC
Expansion Interface

- 40 inputs x 40 outputs x 2 REAC ports

XI-MADI
Expansion Interface

- 32 inputs x 32 outputs at 96kHz x 2 sets or 64 inputs x 64 outputs at 48kHz x 2 sets
- 2 MADI sets (BNC, Optical), Video Sync In

XI-DANTE
Expansion Interface

- 32 inputs x 32 outputs at 96kHz or 64 inputs x 64 outputs at 48kHz
- Primary, Secondary, Control port

XI-WSG
Soundgrid Expansion Interface

- 3 SoundGrid ports

S-4000D
Splitter & Power Distributor

- REAC splitter equipped with embedded power
- 10 REAC ports including 8 ports of REAC Embedded Power for M-48s

M-48
Live Personal Mixer

- Enables control of up to 40 audio channels via 16 stereo groups
- Built-in ambient mic aids in communicating with other musicians as well as enabling a stage/room "presence"
- Volume, Pan, 3-band EQ and built-in Reverb per group — all instantly adjustable by convenient encoder knobs
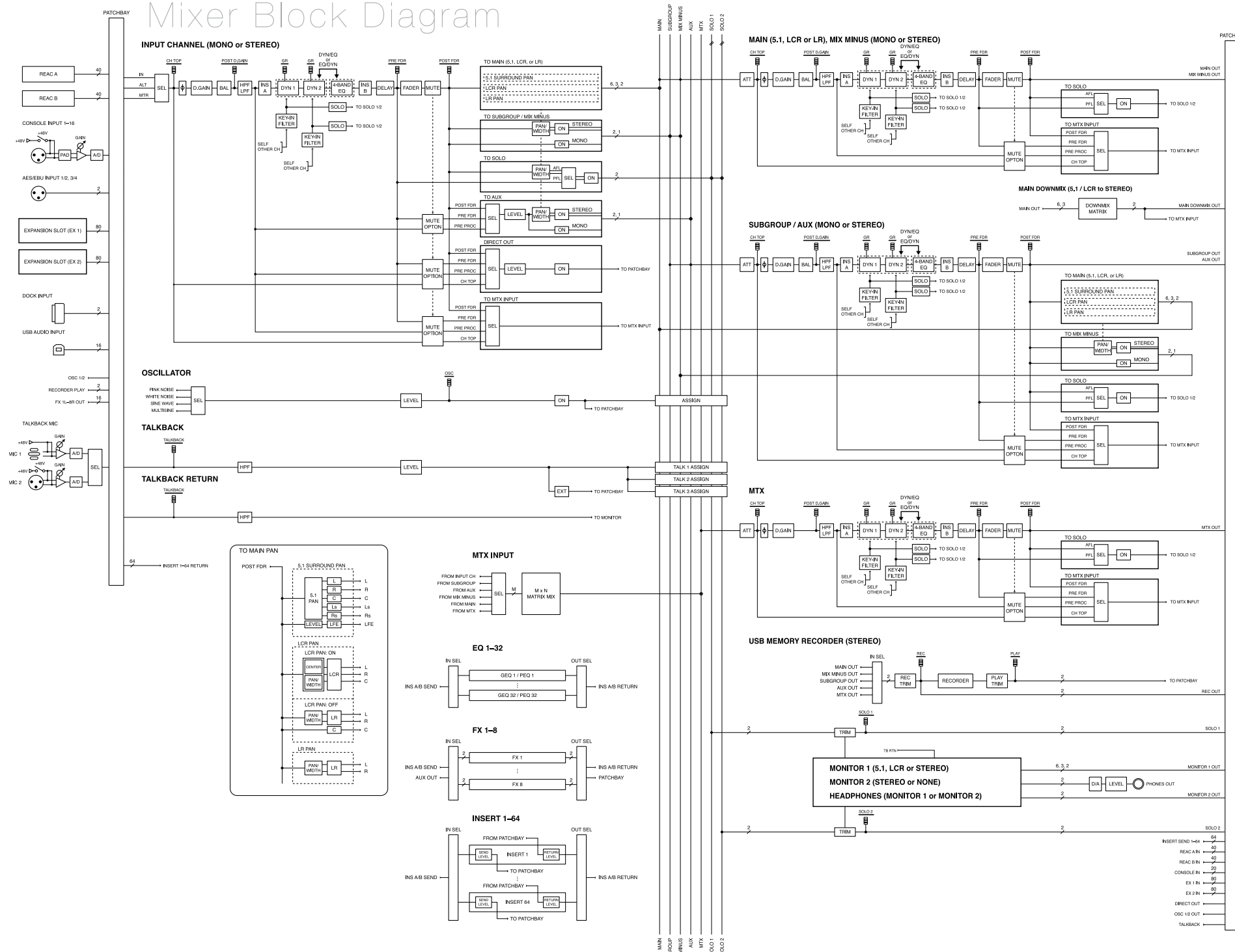
R-1000
48-Track Recorder/Player

- Records and plays up to 48/24 tracks (at 48/96kHz) of 24-bit audio in BWF format
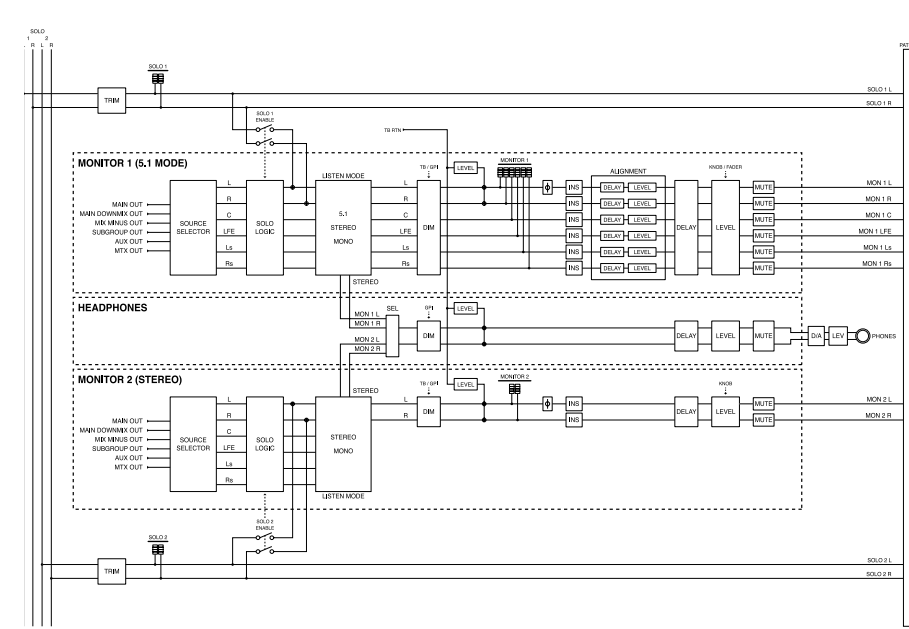- Ideal for Virtual Sound Checks, Rehearsals, Playback and Training

SSD-128G
Solid State Drive Unit
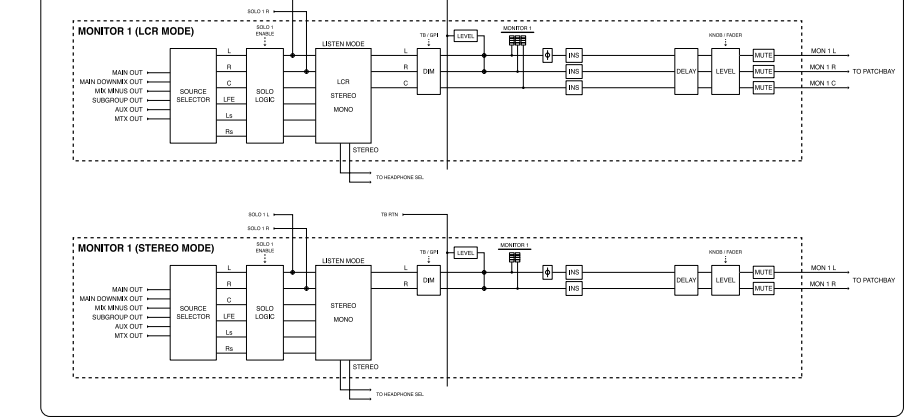### HDD-500G
Hard Disk Drive Unit

System example with O·H·R·C·A(M-5000) and S-2416×4
*Inputs: Analog 112ch, AES/EBU 36ch, Outputs: Analog 80ch, AES/EBU 36ch

Mixer Block Diagram

MONITOR SECTION

Specification

SPECIFICATIONS

PROCESSING

Mixing Channels	Up to 128 CH (combination of INPUT CHANNEL, MAIN, SUBGROUP, AUX, MIX-MINUS, MATRIX, MONITOR, COMM, OSC, HEADPHONES)
Inputs	Max 300 ports (96 kHz), Max 460 ports (48 kHz / 44.1 kHz) •CONSOLE: 16 •AES/EBU: 4 •REAC: 40 x 2 •EXPANSION SLOT: 80 x 2 (96 kHz), 160 x 2 (48 kHz / 44.1 kHz) •USB AUDIO: 16 •DOCK: 2 •USB RECORDER: 20 •FX 1L-8R: 16 •TALKBACK: 2 •OSC: 2
Outputs	Max 296 ports (96 kHz), Max 456 ports (48 kHz / 44.1 kHz) •CONSOLE: 16 •AES/EBU: 4 •REAC: 40 x 2 •EXPANSION SLOT: 80 x 2 (96 kHz), 160 x 2 (48 kHz / 44.1 kHz) •USB AUDIO: 16 •DOCK: 2 USB •RECORDER: 2 •FX 1L-8R: 16
Internal Processing	72 bits (fixed point, bus summing)
Signal Processing	AD/DA Conversion: 24 bit Sampling Rate: 96 kHz, 48 kHz, 44.1 kHz

INPUT/OUTPUT CHARACTERISTICS

Input Impedance	INPUT jacks (1 - 16): 7 k ohms TALKBACK MIC 2 jack: 4 k ohms (Phantom: ON)
Nominal Input Level (Variable, typ.)	INPUT jacks (1 - 16): -65 to -10 dBu (Pad: OFF), -45 to +10 dBu (Pad: ON) TALKBACK MIC 2 jack: -50 to -10 dBu
Non Clip Maximum Input level (1kHz, typ.)	INPUT jacks (1 - 16): +8 dBu (Pad: OFF), +28 dBu (Pad: ON) TALKBACK MIC 2 jack: +8 dBu
Output Impedance (typ.)	OUTPUT jacks (1 - 16): 600 ohms PHONES jacks (1, 2): 45 ohms
Recommended Load Impedance	OUTPUT jacks (1 - 16): 10 k ohms or greater PHONES jacks (1, 2): 32 ohms or greater
Minimum Load Impedance	OUTPUT jacks (1, 2): 16 ohms
Nominal Output Level (ty.)	OUTPUT jacks (1 - 16): +4 dBu (Load impedance: 10 k ohms)
Non Clip Maximum Output level (1 kHz, typ.)	OUTPUT jacks (1 - 16): +22 dBu (10 k ohms load) PHONES jacks (1, 2): 500 mW + 500 mW (40 ohms load)

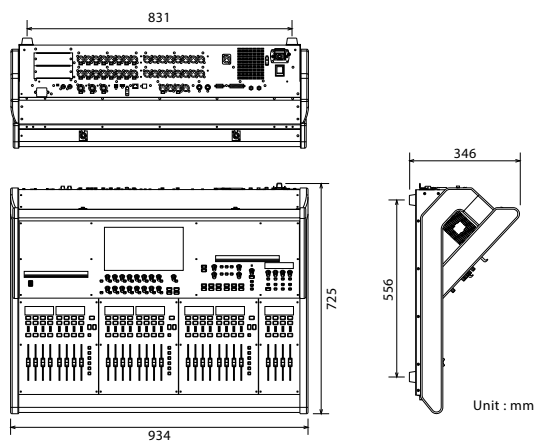### CONNECTORS

Connectors	INPUT jacks (1 - 16): XLR-3-31 type (balanced, phantom power) TALKBACK MIC 2 jacks: XLR-3-31 type (balanced, phantom power) AES/EBU IN jacks (1/2, 3/4): XLR-3-31 type (balanced) OUTPUT jacks (1 - 16): XLR-3-32 type (balanced) PHONES 1 jack: Stereo 1/4 inch phone type PHONES 2 jack: Stereo miniature phone type AES/EBU OUT jacks (1/2, 3/4): XLR-3-32 type REAC ports (A, B, SPLIT/BACKUP): RJ-45 EtherCon type, REAC SPLIT/BACKUP port supports REAC EMBEDDED POWER. WORD CLOCK connector (IN, OUT): BNC type RS-232C connector: DB-9 type MIDI connector (OUT/THRU, IN) USB port (MEMORY): USB type A USB WLAN ADAPTOR port: USB type A USB COMPUTER port: USB type B LAN port: RJ45 type DOCK CABLE port: 10-pin mini DIN type GP I/O port: DB-25 type FOOT SWITCH jacks (1, 2): 1/4-inch TRS phone type LAMP jacks: XLR-4-31 type x 2, LAMP power: DC +12 V/500 mA EXT.POWER DC IN jack: XLR-4-32 type •XLR type: 1 GND, 2 HOT, 3 COLD •Phantom power: DC +48 V (unloaded maximum), 14 mA (maximum load) (All XLR type inputs)

OTHER

Display	Graphic color LCD 800 x 600 dots (touch screen) Graphic organic light emitting display 256 x 64 dots (Fader Bank Display x 7, User Assignable Display x 1)
Power Consumption	180 W
Dimensions	934 (W) x 725 (D) x 346 (H) mm 36-13/16 (W) x 28-9/16 (D) x 13-5/8 (H) inches
Weight	36 kg, 79 lbs 6 oz
Operation Temperature	+5 to +40 degrees Celsius +41 to +104 degrees Fahrenheit
Accessories	Owner's manual, Power cord, Dock cable REAC connector cover x 3, Ferrite core x 6 Tablet sheet x 2, Cover

831

346

934

725

556

Unit : mm

Roland