RANE

Audio Products for Professionals

2016 All Products Catalog

HAL System

Introduction

HAL is more than just another DSP drag-and-drop system. It has revolutionized system design and installation.

HAL is an expert in room combining, paging and distributed audio systems. This groundbreaking architecture is dimensions beyond any solution in any industry. HAL easily guides even novice users through what used to be complex tasks in just minutes. No intricate matrix mixing or presets are required for room combining and paging. No virtual wiring is required to distribute pages and background music to multiple, even hundreds of zones.

Seamlessly interface HAL to your application with web controls and/or a broad variety of peripheral devices including smart Digital Remotes, a 7-inch programmable touchscreen, Remote Audio Devices (RADs), portable or rack automixers, audio I/O, Dante, and logic expansion devices, wall sensors, ambient sensing mics, and an advanced Paging Station. Control HAL functions from a web browser in any smartphone, computer or tablet – including iPads, iPhones, Androids, Samsung, etc. The Event Manager can automate HAL's DSP using dates and times.

In addition, the HAL Multiprocessor and Halogen™ software check the status, location, CAT 5 wiring integrity, and that audio is flowing in all peripheral devices, so you know your system is properly connected and ready to go. Does your DSP troubleshoot the cable install for you and offer a "Get on the Plane" indicator that shows you that the installers have truly finished their job? It should.

Halogen software includes Ethernet control support for third-party control systems such as AMX®, Crestron® and Stardraw Control™, including well-documented examples. Standard TCP/IP set and get ASCII text messages control levels, selectors, presets and toggle software actions. Since the same Halogen software code runs on both Windows® and within HAL hardware, third-party control developers can test all their code using only the Halogen Windows software. Use only software for complete system design and validation. Buy the hardware only when the install date arrives and completely skip needing it early solely for control system programming verification.

Analog audio has always offered "plug it in, it works!" functionality. With HAL's modern DSP system, finally digital audio offers "plug it in, it works". Without IP anything, without DHCP servers, without unblocking ports, without firmware mismatches, without hours (or days?) of bad cable termination or swapped cable-pull troubleshooting, and other troubles caused by Ethernet and other supposedly modern digital audio and control transports.

Four HAL multiprocessors provide various audio I/O and control options for both large and small installations.

- HAL1x supports 16 in x 16 out audio, which may be increased up to 528 in x 528 out by adding up to 32 daisy-chained Expanders to a single HAL1x. Add a few to hundreds of more mic inputs with AM Automixers.
- HAL2 supports 18 in x 18 out audio, of which 2 x 2 are via AES3 on XLR connections.
- HAL3s supports 6 in x 10 out audio. The 2 "Mic/Line-Plus" Inputs accept balanced, or unbalanced left/right monoed.
- HAL4 supports 2 in x 2 out audio. The 2 "Mic/Line-Plus" Inputs accept balanced, or unbalanced left/right monoed.

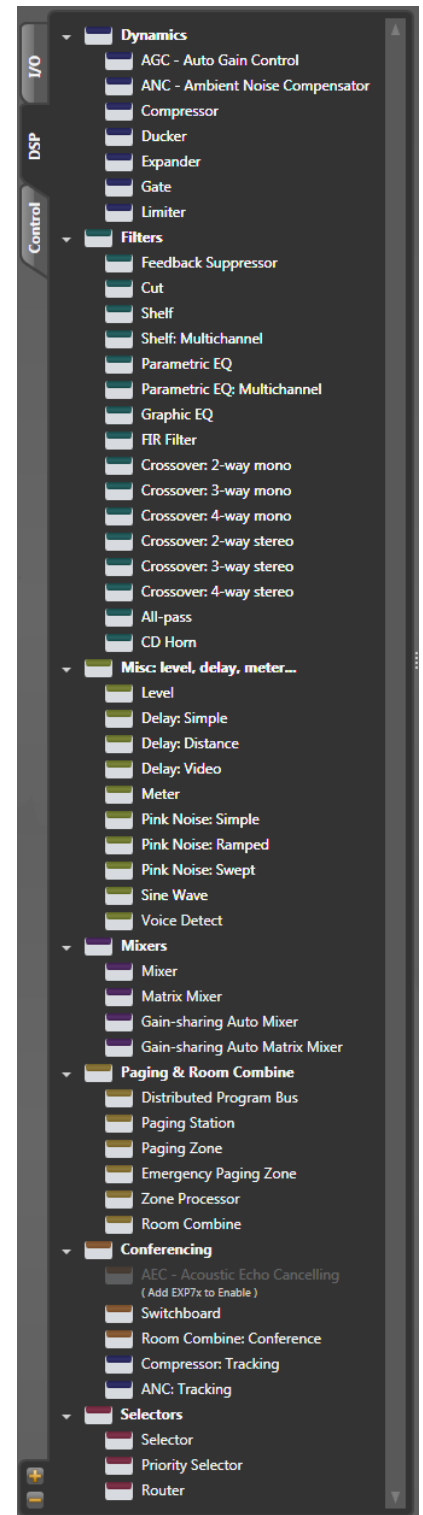**Download Halogen and design a system now!**

rane.com/hal

Applications, installations and solutions are at

blog.rane.com
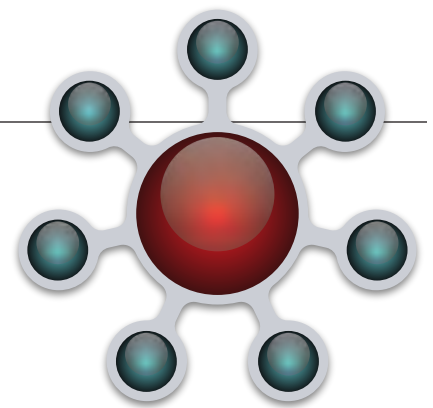
HAL1x Expansion Bus Supports 32 Daisy-chained EXPs in Any Combination

- Connects with shielded CAT 5e (or better) cable and RJ-45s; Maximum distance between units = 100 meters (300 feet).
- Supports Gigabit Ethernet Media Converters: Multimode max = 2 km (1.2 miles); Singlemode max = 12 km (7.5 miles).

HAL1x Multiprocessor

- 16 in x 16 out - 8x8 analog & 8x8 digital (RAD ports).
- Up to 4 RADs (without EXP1x), up to 260 RADs (with 32 EXP1s).
- Up to 12 Digital Remotes (without EXPs), up to 268 (with EXPs).
- Four logic inputs, Two relay outputs (more with DR4 or DR5).

Inputs	Outputs
Analog Mic / Line Inputs **8**	**8** Analog Line Outputs
Digital RAD Port Inputs **8**	**8** Digital RAD Port Outputs
Digital Expansion into HAL1x **512**	**512** Digital Expansion from HAL1x
Total in the **HAL1x** DSP Brain **528**	**528**
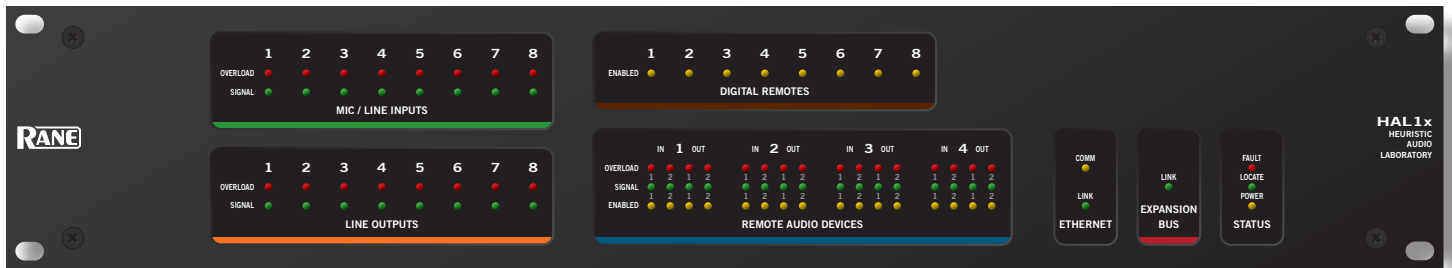
Daisy-chain up to 32 Expanders with the Expansion Bus (in red).
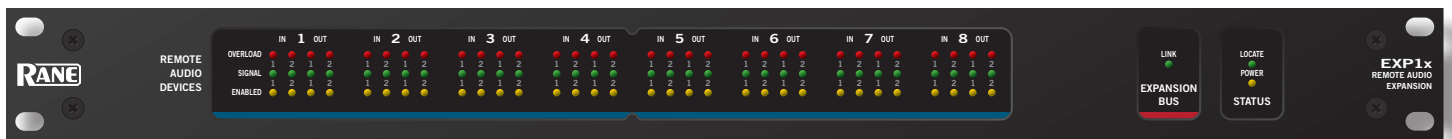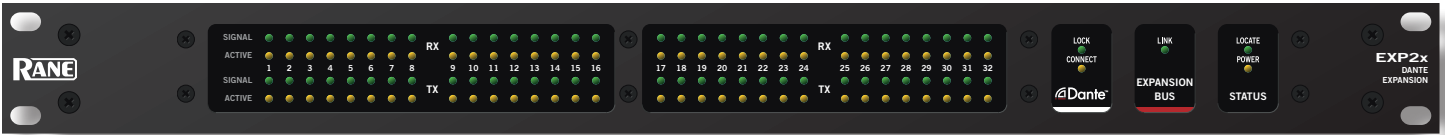

EXP1x RAD Expander for HAL1x

- Adds 16 in x 16 out digital (8 more RAD ports) to HAL1x.
- Up to 8 Digital Remotes or RADs in any combination.
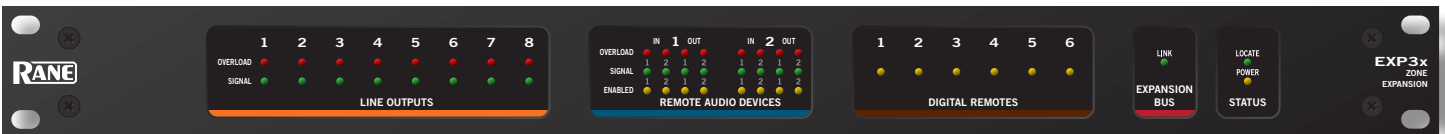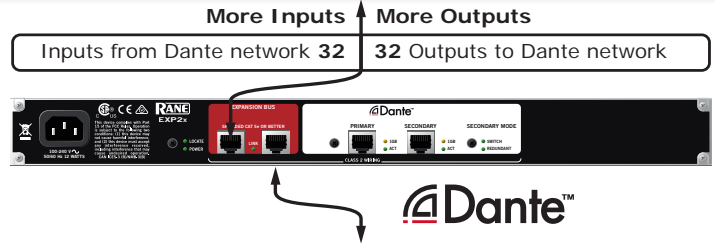- Chain up to 32 EXP1x units to a HAL1x for 512 in x 512 out.

More Inputs	More Outputs
Digital RAD Port Inputs **16**	**16** Digital RAD Port Outputs
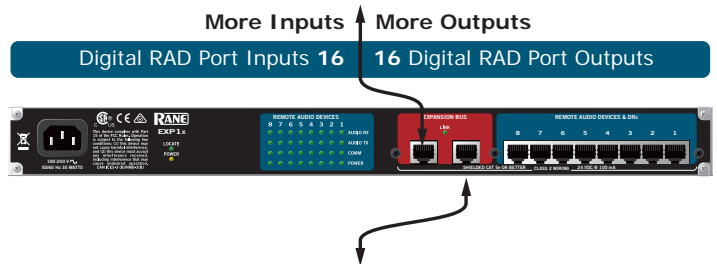
- More Expanders for the HAL1x are on the next page...

HAL Comparison

*Sound & Video Contractor Magazine 2014 InfoComm Best Of Show Award Winner*

EXP2x Dante Expander for HAL1x

• Lets a HAL1x send and receive 32 channels to a Dante network.

• Supports 44.1, 48, 88.2 or 96 kHz Dante network sample rates.

• Chain up to 16 EXP2x units to a HAL1x for 512 in x 512 out.

More Inputs	More Outputs
Inputs from Dante network **32**	**32** Outputs to Dante network

EXP3x Zone Output Expander for HAL1x

• Adds 8 analog line outputs and 8 logic outputs to a HAL1x.

• Adds 6 Digital Remote ports & 2 RAD ports to a HAL1x.

• Chain up to 32 EXP3x units to a HAL1x for 256 outputs.

More Inputs	More Outputs
	8 Analog Line Outputs
Digital RAD Port Inputs **4**	**4** Digital RAD Port Outputs
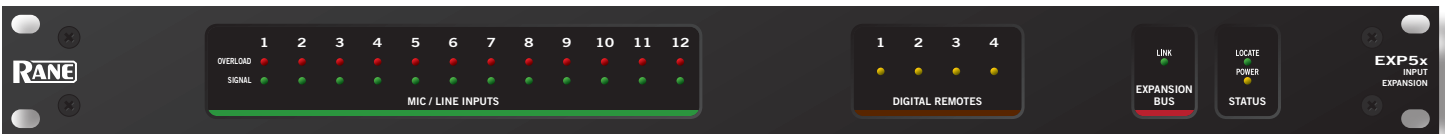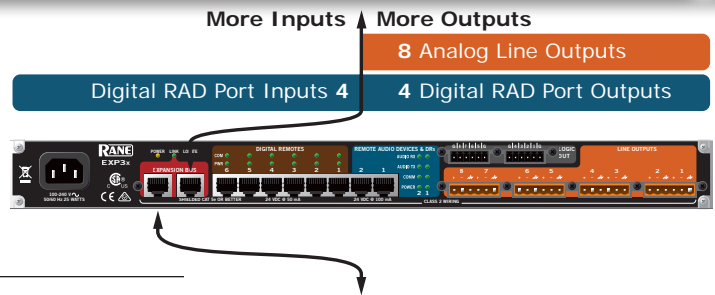
EXP5x Input Expander for HAL1x

• Adds 12 analog mic / line / line-plus* inputs to a HAL1x.

• Adds 4 Digital Remote ports to a HAL1x.

• Chain up to 32 EXP5x units to a HAL1x for 384 analog outputs.

More Inputs
Mic / Line / Line-Plus Inputs **12**
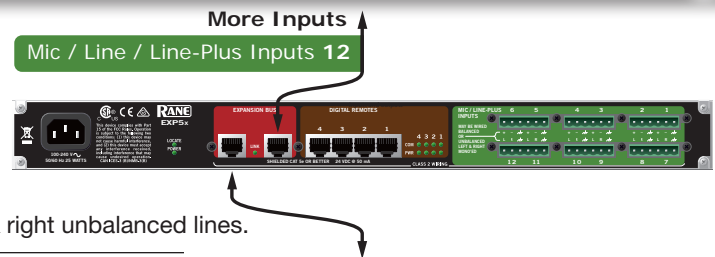
*"Mic / Line-Plus" Inputs accept a mic, balanced line, or mono left & right unbalanced lines.

EXP7x AEC Expander for HAL1x

• Adds 8 channels of Acoustic Echo Cancelling DSP to a HAL1x.

• Chain up to 32 EXP7x units to a HAL1x for 256 AEC channels.

• Preset recall can re-assign an AEC resource across inputs / rooms as required.

Add AEC

HAL2 Multiprocessor

- 18 in x 18 out - 8x8 analog & 8x8 digital (RAD ports) & AES3 I/O.
- Up to 8 Digital Remotes.
- Four logic inputs (closure).
- Two relay outputs.

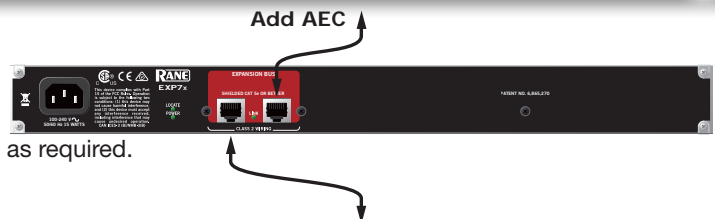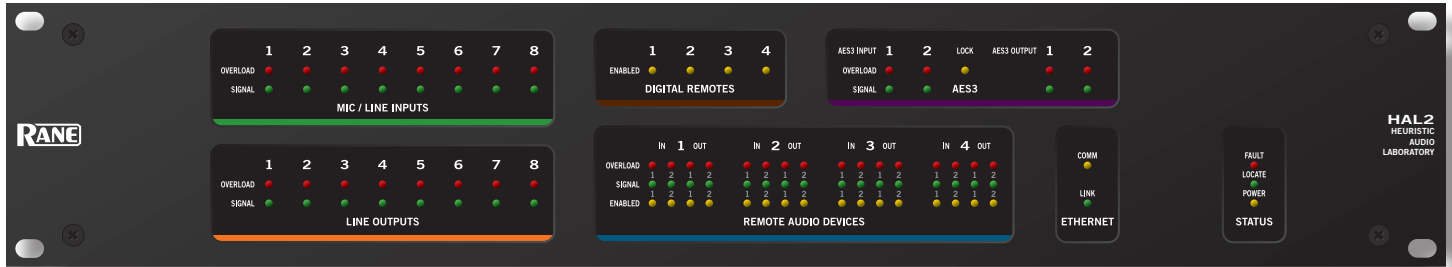|	
Analog Mic / Line Inputs **8**	**8** Analog Line Outputs
Digital RAD Port Inputs **8**	**8** Digital RAD Port Outputs
(AES3) Input Channels **2**	**2** (AES3) Output Channels
Total in the **HAL2** DSP Brain **18**	**18**
Inputs	Outputs

HAL3s Multiprocessor

- 6 line in x 10 line out - 2x6 analog & 4x4 digital (2 RAD ports).
- Up to four Digital Remotes.
- Four logic inputs (closure).
- Mic / Line-Plus Inputs can be configured: Mic with or without +48V, "+4 dBu balanced" or "-10 dBV unbalanced Left/Right Monoed."

Analog Line-Plus Inputs **2**	**6** Analog Line Outputs
Digital RAD Port Inputs **4**	**4** Digital RAD Port Outputs
Total in the **HAL3s** DSP Brain **6**	**10**
Inputs	Outputs
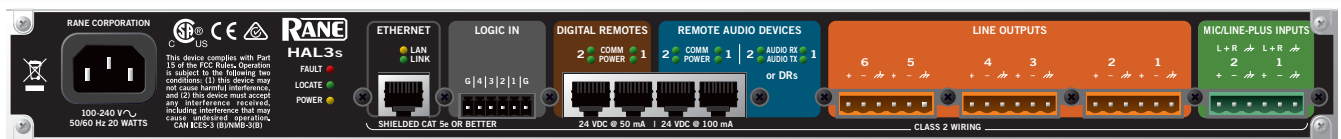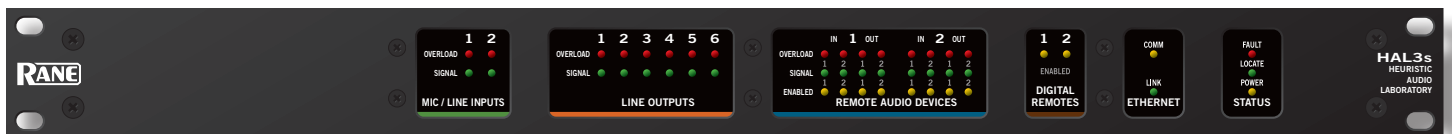
HAL4 Multiprocessor

- 2 Mic / Line-Plus inputs x 2 line outputs (see description in HAL3s).
- One Digital Remote port (plus Halogen web controls).
- The HAL4 delivers more bang for the buck than any other drag-and-drop DSP on the market.

Analog Mic/Line-Plus Inputs **2**	**2** Analog Line Outputs
Total in the **HAL4** DSP Brain **2**	**2**
Inputs	Outputs
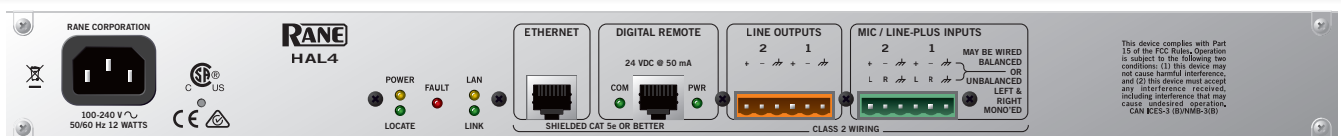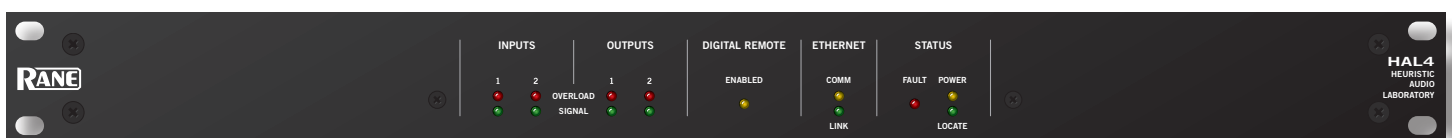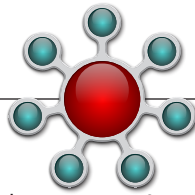
Halogen Software

The Halogen software application is your home for designing, configuring, and controlling your HAL audio system. Halogen's easy-to-use graphic user interface simplifies the design and configuration process so much that your only concern will be deciding how to use the extra time you have! The Halogen software manages global tasks such as discovering, connecting to, and applying configurations to HAL devices. The interface is divided into two main sections: the Hardware Workspace and the Processing Workspace. Halogen helps you choose the best HAL Model to start a new configuration.

Choose HAL Model for new configuration

| HAL Model	Inputs	Outputs	Ports
HAL1x	8 Mic/Line	8 Line	4 RAD, 8 DR, 4 Logic In, 2 Relay Out, 1 EXP (RJ-45)
HAL2	8 Mic/Line, 2 AES3	8 Line, 2 AES3	4 RAD, 4 DR, 4 IR, 4 Logic In, 2 Relay Out
HAL3	2 Line-Plus	6 Line	1 RAD, 3 DR, 4 Logic In
HAL3s	2 Mic/Line-Plus	6 Line	2 RAD, 2 DR, 4 Logic In
HAL4	2 Mic/Line-Plus	2 Line	1 DR

HAL3s

Input(s):	Two - Mic/Line-Plus, selectable from software between: Dynamic mic (Euro), Condenser mic with 48 V phantom power (Euro), Two consumer unbalanced L & R monoed (Euro), One balanced line-level (Euro)
Output(s):	Six - balanced line-level (Euro)
Ports:	Two - Remote Audio Device (RJ-45), Two - Digital Remote (RJ-45), Four - Logic In (Euro)
Form Factor:	1U rack mount

Hardware Workspace

Specify and configure the physical hardware components of your audio system. Troubleshooting messages specify any problems.

Processing Workspace

Wire together the audio processing components of your system, adding and configuring standard processing blocks such as equalizers, matrix mixers, compress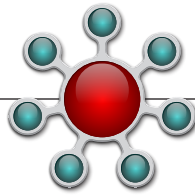ors, limiters, and so on. Manage and configure control links and presets here. Halogen also provides innovative processing blocks that simplify complex multizone background music, paging and room combine scenarios.

Notice that Halogen separates the hardware view from the processing view of your audio system. A key benefit of this separation is the flexibility it provides when configuring the system's various inputs and outputs. For example, suppose you have a RAD2 in your audio system. You drag the RAD2 device into the Hardware Workspace but then go to the Processing Workspace to configure the RAD2's line input and mic input. This separation of hardware from processing allows you to work with each input and output individually instead of having to work with the hardware device as a single entity. It also allows you to focus on hardware in one place and audio flow and processing in another place—simplifying your job as a result. Brilliant!

Workspace Layout

As you may have noticed, the Hardware Workspace and the Processing Workspace have similar layouts. On the right is the actual workspace itself in which you create your system. Associated with each workspace is a palette of objects on the left, and at the top a toolbar specific to the workspace. To add an entity to your audio system, you drag one or more objects from the palette to the workspace.

A simple way to think of the Halogen workspaces is that you use the Hardware Workspace to create, connect and troubleshoot all of your physical hardware, while you use the Processing Workspace to select, configure, and connect the processing blocks and controls.

Wire Management
- Distributed Program Bus
- Paging Manager
- Orthogonal Wires
- Wire Tags
- Highlight Wires

Digital Remotes

Three Digital Remotes simplify end user control and eliminate installer brain fatigue. Use Digital Remotes for volume control, preset recall, source selection, or resetting or toggling system states. All offer customizable backlit LCD screens for intuitive end user labeling. Home run shielded CAT 5e (or better) connections to a HAL or EXP eliminate addressing, external power, and the need to test the cables, which can run up to 300 meters (1,000 feet).

The DR1 supports Level Control.

The DR2 offers Single Selector or List of Toggles/Commands behavior.

The DR3 has three behaviors: Single Level & List of Toggles/Commands, List of Levels for either multizone volume control or input source mixing, and Single Level plus Selector.

DR1 Digital Volume Remote
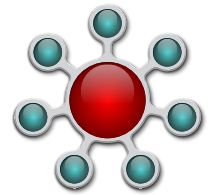
Level Control

DR2 Digital Selection Remote
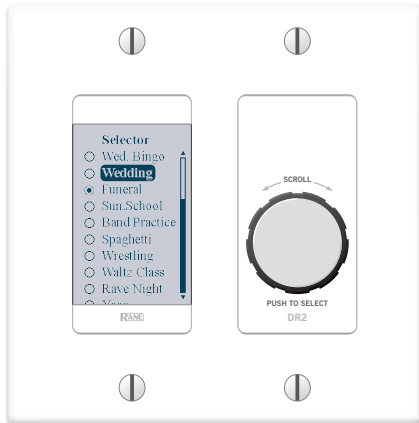
Single Selector
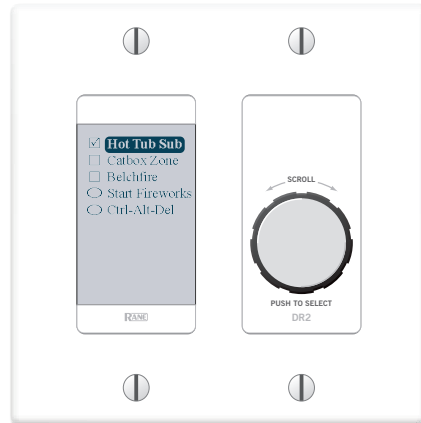
List of Toggles / Commands

Halogen Control Linking

Drag the control chain icons atop one another to create links. This screen shows linking a DR1 volume onto the Meeting Room Output Level control. Four Control Link types and behaviors are supported: Level, Select, Toggle or Command. Activation and Priorities work together for incredible flexibility. Link simple analog remote level pots by adding a DR4 Logic I/O Remote.

DR3 Digital Volume and Selection Remote
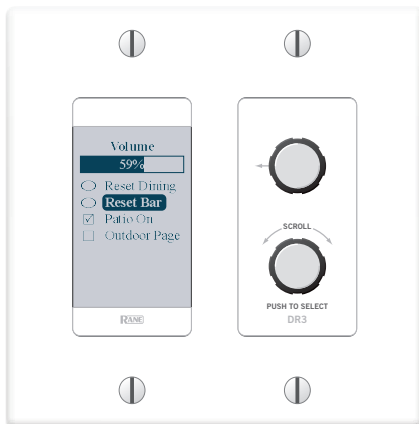
Single Level & List of Toggles / Commands
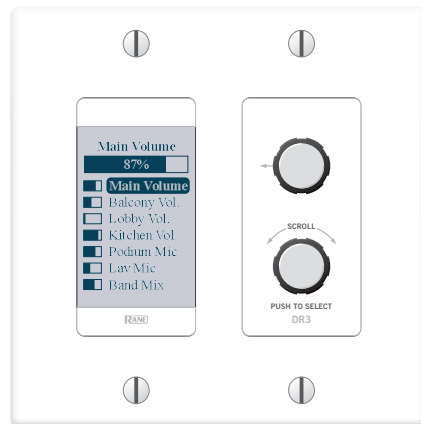
List of Levels
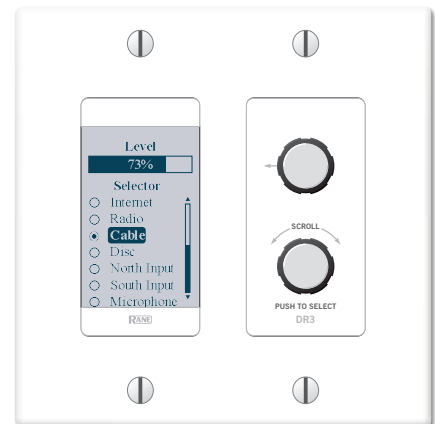
Single Level & Selector

HAL Remotes

DR4 Logic I/O Expander

The DR4 Digital Remote adds additional logic input and output ports to any HAL, enabling simple analog level and logic I/O controls plus IR2 remotes for wall sensing. The DR4 offers eight logic ins and outs, six IR ports and eight analog input ports for pot-on-a-wall level control. Multiple DR4's can connect to Digital Remote Ports on any HAL, up to 300 meters (1000 feet) away.
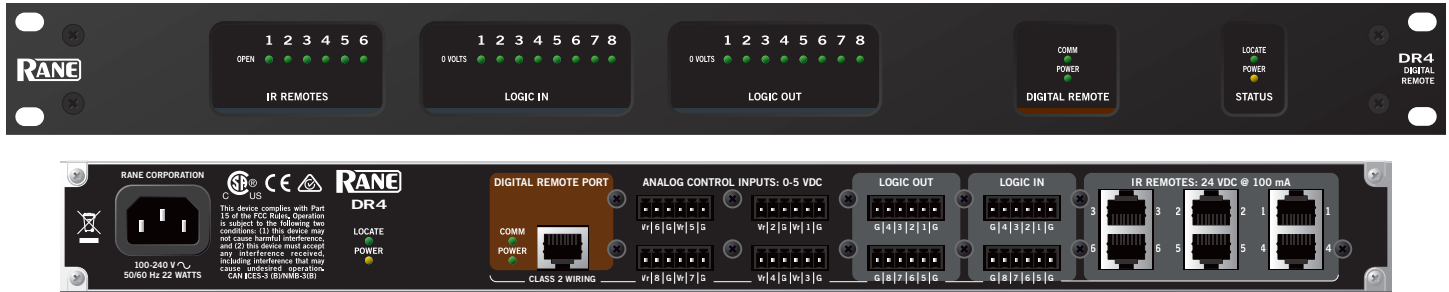
DR5 Switch Controller

The DR5 Digital Remote offers additional logic input and output ports, enabling the use of simple analog switch controls in any HAL system. Lighted switch panels for room combine applications are easily integrated into a HAL system using the eight switch inputs and eight LEDs outputs on the DR5. Unlike the HAL and DR4 Logic I/O, the DR5 Logic Out is intended to drive the LED indicator on a room combine panel, and is a writable parameter. The DR5 is designed to fit in a standard US dual-gang electrical box or mount directly near a room combine panel.
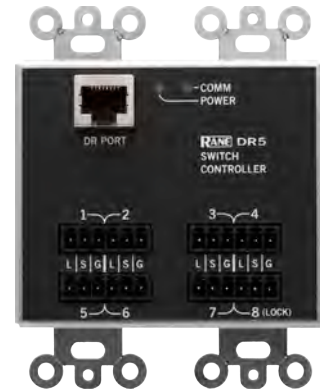
DR6 Touchscreen Remote Control

The DR6 is a fully customizable touchscreen remote for the HAL family. It supports multiple pages or tabs and any set of levels, toggles, selectors and/or commands. Drag, drop and resize controls any way that's desired. Use custom background images and logos in full-color on the 7-inch LCD display.

Screw the included wall-mount bracket over U.S. or international electrical boxes, or flush mount the ¾" thick DR6 with a 2-inch hole in the wall to accommodate the cable. The optional DS1 desk stand accessory (shown) allows the DR6 to mount on a horizontal surface. The optional RB2 allows the DR6 to mount in a 19" rack, with room for a round 4" speaker

The included midspan power injector connects CAT5e (or better) cables between any HAL and the DR6 to deliver communications and the extra power needed for the display.

Optional, on-screen User Access logins secure management pages from public or staff use, and a programmable ambient light sensor automatically dims the backlight.

The Control Page Designer in Halogen allows you to create one set of pages and use them in a web control design, DR6 display or both.

Wall mounting hardware is included with the DR6.
The DS1 Desk Stand accessory is not included.

9

HAL Remotes

New! RAD26 One Room RAD Remote

Using one shielded category cable drop, the RAD26 provides any room with a dual 4-watt amp, end user control via a color custom LCD display & encoders, a dual universal audio I/O interface, plus headphone output and line-level input jacks for local needs. Three logic closure inputs and three active-low outputs add to the control capabilities. The amplifier permits a single channel option at 8 watts into 8Ω. Applications include:
• Presentation source & volume, projector & screen control.
• Meeting room with A/V teleconferencing and speakers.
• Spa with BGM, local music input and stereo speakers.
• Hotel or cruise ship room TV and local input sound system.

A RAD26 provides enough I/O and control to support one room in a HAL audio system which may require these features:
• Local audio line input (smartphone, laptop, MP3, DVD).
• One or two microphone or line-level inputs.
• Amplifier outputs for ceiling speakers.
• Level control and source selection.

Each RAD26 may be installed onto a standard US 2-gang electrical box, 1-gang electrical box, or flush-mounted to a wall surface. The exterior finish is matte white.

Source and level behave like a DR3 remote, but with any combination of Levels, Toggles, Selections or Commands.

On the back there are 2 balanced Euroblock Mic / Line / Line-Plus audio inputs with the mode set in Halogen software. The Line-Plus inputs accept unbalanced left and right signals and sums them to mono. 24V phantom power is available for condenser mics. For end users, there is a 3.5 mm Aux input on the underside of the front, accepting the output of a smartphone, laptop or other consumer device.

A built-in 4-watt stereo amplifier powers a small stereo pair of speakers, or this amp can be switched in software to power a single 8-watt speaker. Balanced line outputs can drive an external amplifier or powered subwoofer for more output.

Software logic senses an inserted connector at the Aux In or Headphone jacks to optionally override the rear connections.

RAD26 TOP VIEW

AUDIO I/O SIGNALS   RAD STATUS INDICATORS

2.18 cm (.86 in)

The Ambient Light Sensor dims the display and LEDs in darkened rooms.

14.85 cm (5.85 in)

REAR PANEL INPUTS

2 balanced inputs

Mic / Line / Line-Plus

A 3-pin Line-Plus Input accepts a stereo unbalanced source and sums it to mono.

11.43 cm (4.5 in)

3 LOGIC INPUTS
Push to talk, Push to mute, etc.

East Wing
☐ Room A
☐ Room B
☐ Hallway
☐ Mute All
Source
○ BG Music
⊙ Phone / Line
○ Mic

REAR PANEL OUTPUTS

2 balanced line outputs

External Amplifier

2 8Ω loudspeaker outputs

4W

4W

(or 1 output @ 8W)

3 LOGIC OUTPUTS
Control another device, light, projector, hot tub, etc.

LINE INPUT   HEADPHONE OUTPUT

Rear panel RJ-45

RAD26 BOTTOM VIEW

Any HAL, EXP1x, or EXP3x

REMOTE AUDIO DEVICES & DRs

Shielded CAT 5e (or better)

RANE REMOTE POWER INJECTOR   **RPI**

The CAT 5 distance from a HAL RAD Port to the RAD26 must not be more than 100 meters (325 feet). The RPI (included with the RAD26) goes anywhere in between, to supply the display and amplifier power.

HAL Control

Halogen Web Controls

Control the Levels, Selectors, Toggles and Commands in any HAL System from **any device with a web browser**. Halogen's Web Controls feature allows creation of custom HTML GUI control screens. Define the quantity of control pages, and the layout, labeling and size of each control, and completely test them using your default web browser from within Halogen.

Access any control page from any browser-enabled device on the network with a HAL device. Just open a browser and type in the customizable IP/webpage address for the HTML page – and bookmark it for easy access. Type in an optional User Access code, and voilà, the trick, she is done! Control your HAL system wirelessly from one or more tablets, smart phones, laptops or desktop computers. The HAL web server is multi-client, allowing control across many devices and many rooms. You can link Rane's wired DR remote controls (DR1, DR2, DR3, DR6, RAD26) and wireless devices and they'll automatically track each other.

Customers from almost every audio application are asking for "iPad control" and Halogen's Web Controls is the solution. It is not Apple®-centric — no app store installs required. Think of all the devices that support web browsers and wireless Ethernet.
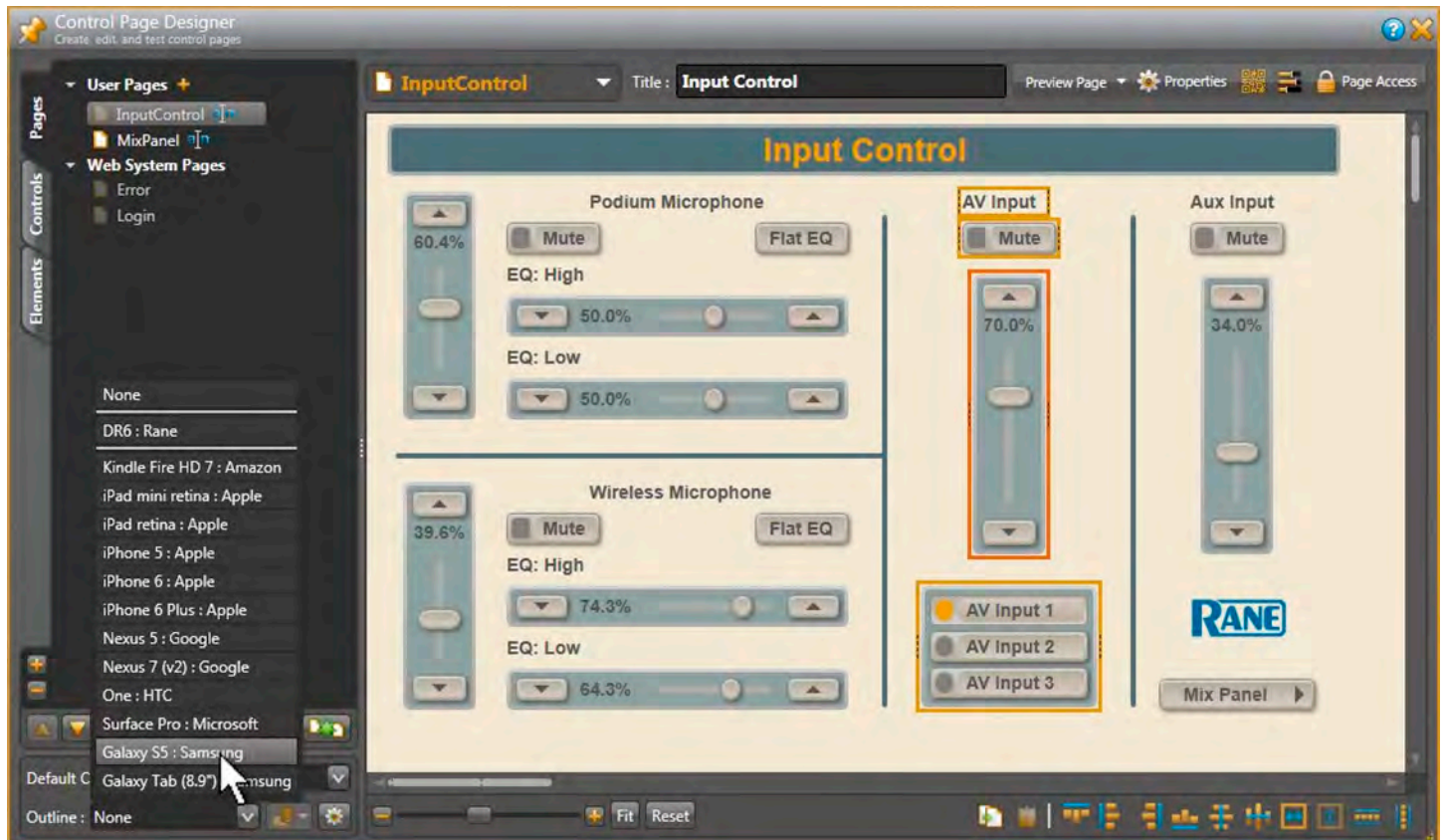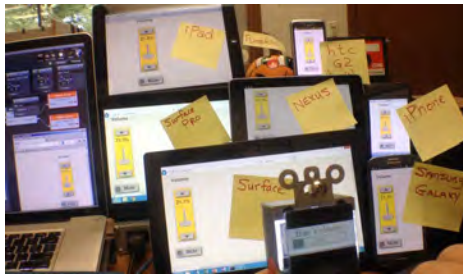
PAGER1 Paging Station

The PAGER1 is a RAD with a mic preamp, paging zone(s) [Scenario] selector and an integrated push-to-talk switch. It sits on or can fasten to a tabletop, and accepts any gooseneck microphone (not included).

IR2 Infrared Wall Sensors

The Rane IR2 provides an automatic way to sense the position of a movable wall or door. Mounting brackets and screws are included. A single CAT 5e cable for each door connects the IR2 pair to a dedicated IR Remote port on the rear of a HAL2 or a DR4.

Halogen's Room Combine Processor supports custom wall layouts and auto-activation of independent room processors for each possible physical room as walls open and close. Control links to Digital Remotes also combine and separate automatically as wall states change. No presets required.
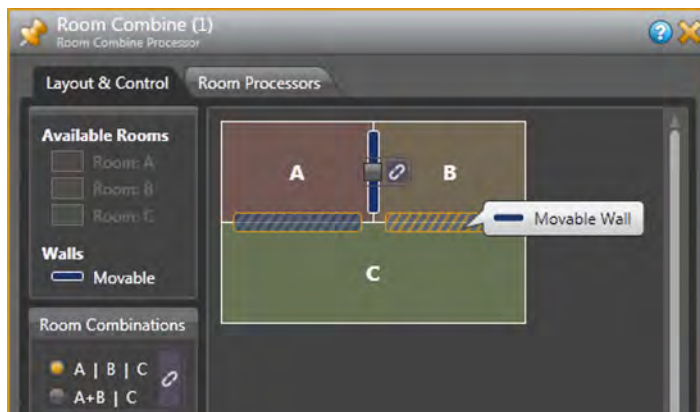
Logic Inputs

These inputs are found on the **HAL1x**, **HAL2** and **HAL3s**. More can be added by connecting the **DR4** or **DR5** to any HAL. Configure each of the Logic Input ports in one of three ways: toggle, command, or selector.

- The **Toggle** configuration allows a Toggle command with an on/off switch. You can configure each port type to be either **Momentary** or **Latching**.
- The **Command** configuration allows triggering a Command control from an on/off switch, which can link to one or more Command controls such as a Command preset or a linkable button in a processing block property dialog.
- The **Selector** configuration uses either a multi-position switch or a binary switch. You can connect a physical device to any or all of the Logic In ports and configure the ports in Halogen so they make the desired selection according to the state of the physical device. Wiring details are in the Halogen Software Help. The Selector configuration is not supported by the DR5.

Analog Control Inputs

These inputs are found on the **DR4** that can connect to any HAL. Each port allows an analog voltage source to control the value of a Level control in the Halogen Control palette. The input range for the port is from 0 V to 5 V, where 0 V corresponds to 0% on the associated Level control and 5 V corresponds to 100%. Connect a physical linear-taper potentiometer — the Vc wiper provides the control voltage to the DR4. As you adjust the pot the voltage changes, which in turn changes any linked Level control in Halogen.

Logic Outputs

These outputs are found on the **EXP3x** Output Expander for the **HAL1x**, or on a **DR4** that can connect to any HAL. You can configure each of the 8 output ports in one of 2 ways:

- **Toggle**: When a toggle control in the Halogen Control palette is unchecked, HAL sets the corresponding DR4 Logic Out port to logic high (5 V), and when the toggle is checked, it sets the port to logic low (0 V).
- **Selector**: When a selector control in the Halogen Control palette is set to the first selection, HAL sets the corresponding DR4 Logic Out port to logic high (5 V). Conversely, when the selector control is in the second position, HAL sets the port to logic low (0 V).

Relay Outputs

These reed relay ports are on the **HAL1x** and **HAL2** to signal other devices. A common implementation is to link a relay port to a Toggle control so an end user can change its value. Halogen software contains a checkbox for each relay port. Its value can be included in a preset or link to another control, making it possible to use a preset or control to turn the relay port on or off.

RADs

The entire family of RAD models interface with HAL for digital conversion at the wall. Each converts analog audio to and/or from 24-bit, 48 kHz digital audio. Shielded CAT 5e (or better) cable

RAD NETWORK SHIELDED CAT 5e CABLE CONTENTS

Data communications (COMM)
2 digital audio channels (Rx)
2 digital audio channels (Tx)
Power: 24 VDC & ground
Shield

and termination transport four digital audio channels – two channels each direction – as well as power, ground and a communications channel, with status indicators at each RAD, HAL or EXP unit, and in Halogen software. HAL auto-checks the CAT 5 crimp and verifies audio. All RADs (and DRs) are both "location-aware" and hot-swappable with 500-foot homerun connections, 66% farther than Ethernet (the RAD26 has a 325-foot limit). Light sensors dim the RAD indicators in dark rooms. Except for the RAD16, AM1, AM2, and PAGER1, all RADs mount in standard US electrical boxes. Most RADs are available in white, ivory, or black, with a matched Decora® plate cover included.

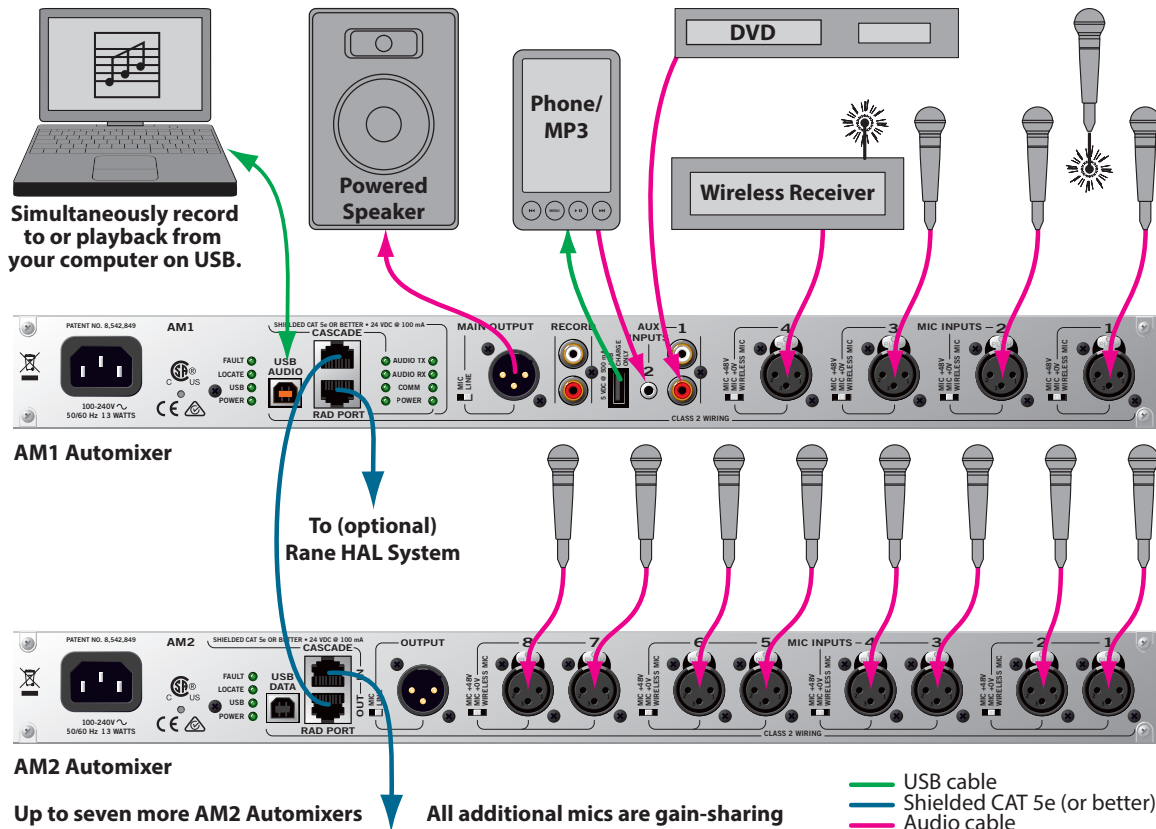|	
RAD1	**Dual XLR Mic Inputs**
RAD2	**XLR Mic Input / Mini & RCA Mono'ed Line Input**
RAD3	**Dual XLR Line Inputs**
RAD4	**Dual XLR Line Outputs**
RAD5	**AES3 Input / AES3 Output**
RAD6	**Mini & RCA Stereo Line Input / Stereo Line Output**
RAD7	**XLR Mic Input / XLR Line Input**
RAD8	**XLR Mic Input / Mini & RCA Stereo Line Output**
RAD9	**XLR Mic Input / XLR Line Output**
RAD11	**XLR Mic In / Mini & RCA Mono'ed Line In / Mini & RCA Stereo Line Out**
RAD12	**Dual XLR Mic Inputs / Dual XLR Line Outputs**
RAD14	**XLR Mic In / Mini & RCA Mono'ed Line In / Dual XLR Line Out**
RAD15	**Dual XLR Line Inputs / Dual XLR Line Outputs**
RAD16z	**Dual Mic-Line-Plus Inputs / Dual Line Outputs / Dual Logic / Euroblocks**
RAD17	**Omnidirectional Boundary Layer Mic**
RAD18	**XLR Mic Input / 1/4" Balanced Line Input**
RAD23	**XLR Line Input / XLR Line Output**
RAD26	**Dual Input / Output / Logic with Level and Source Selection**
RAD27	**USB Audio Sound Card**
RADX	**RAD Port Extension (CAT 5 wall jack for portable RADs)**
PAGER1	**Mic Preamp with Push-to-Talk and Page Zone Selection**
AM1	**Four-Channel Gain-Sharing Automixer with extra Line & USB Inputs**
AM2	**Eight-Channel Gain-Sharing Cascadable Automixer**
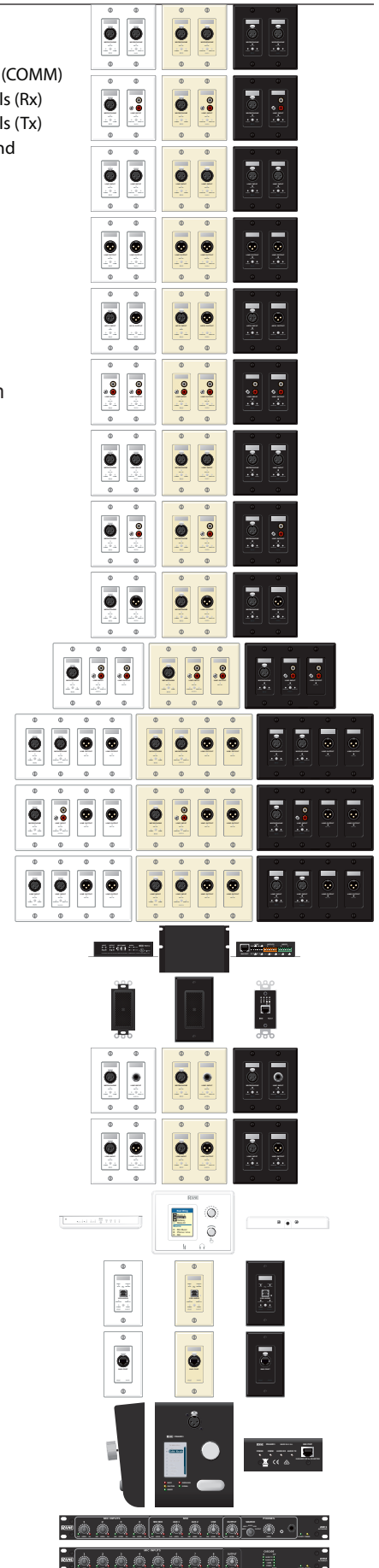
Automixers

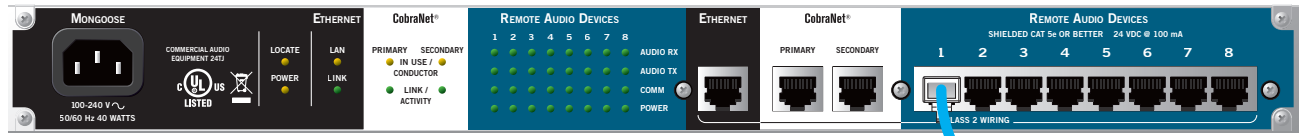## AM1 Four-Channel Gain-Sharing Automixer

- Automixer with four gain-sharing XLR line/mic/phantom switchable Inputs, RCA and 3.5 mm Aux Line Inputs, USB audio Input.
- XLR mic/line switchable Mix Output, RCA Record Output, USB audio Output.
- Cue mics or any input with Headphones from 1/4" or 3.5 mm jacks.
- Add more gain-sharing mic/line inputs with up to seven Rane AM2 Automixers for a total of 60 gain-sharing mics.
- RAD Port connects to a Rane Mongoose or HAL system.

AM2 Eight-Channel Gain-Sharing Cascadable Automixer

- Automixer with eight gain-sharing XLR line/mic/phantom switchable Inputs; XLR mic/line switchable Mix Output.
- Add more gain-sharing mic/line inputs with up to seven more AM2 Automixers for a total of 64 gain-sharing mics.
- RAD Port connects to a Rane Mongoose or HAL system (that's 64 gain-shared mics on one RAD port).

Simultaneously record to or playback from your computer on USB.

DVD

Phone/MP3

Wireless Receiver

Powered Speaker

AM1 Automixer

To (optional) Rane HAL System

AM2 Automixer

Up to seven more AM2 Automixers   **All additional mics are gain-sharing**

— USB cable
— Shielded CAT 5e (or better)
— Audio cable

14
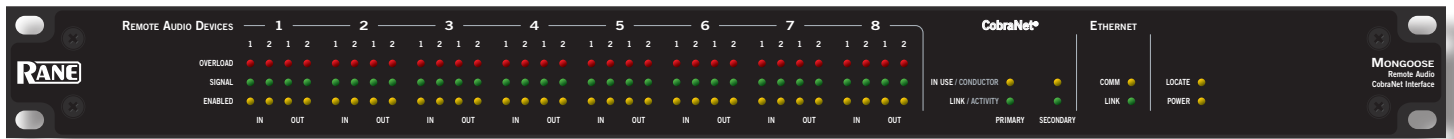
Mongoose

Mongoose Network Audio Router

- 32 by 32 digital audio matrix router, supporting 32 digital audio channels from 8 RADs.
- Deliver digital audio between the equipment rack and remote spaces via shielded CAT 5e (or better) cable.
- A Remote Audio Device (RAD) provides analog to digital conversion at the wall (or floor box).
- Connect up to 8 RADs to a single Mongoose with shielded CAT 5 up to 150 meters (500 feet) away.
- Multiple Mongoose units can be networked to provide more channels.
- Use with, or without, CobraNet. Receive 2 and transmit 2 CobraNet Bundles.
- Supports DHCP, Zeroconf (Link-local & mDNS) & Auto MDI/MDIX.

This product has not been tested to the current CE requirements and is not available in markets requiring CE compliance.
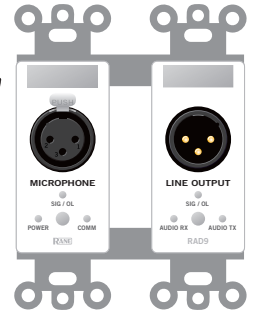
See all the RAD models on page 13.

The Mongoose's 32-by-32 digital audio matrix router receives its first 16 audio channels from up to eight RADs via the eight rear panel RJ-45 Remote Audio Device ports. The second 16 matrix input channels can come from two 8-channel CobraNet receive (Rx) Bundles via standard CobraNet Primary and Secondary/backup ports. The 32 matrix router outputs transmit 16 channels to eight RADs and 16 more channels to two CobraNet transmit (Tx) Bundles.

Mongoose Tracker setup software for PC is included. It allows you to name each Mongoose, RAD and audio channel, then print matching custom labels to insert above each jack. With RADs connected, Zeroconf-based Discovery automatically finds devices without IP setup or special IP knowledge.

One of the key configuration tasks is to set up the audio routing for your Mongoose system. Simply click a crosspoint to attach input to output, between RADs and CobraNet Channels. You can send the signal to one or more of the following:
- Another RAD connected to the same Mongoose
- Another RAD connected to a different Mongoose
- Another CobraNet-enabled device (e.g., a DSP device).

In addition to configuring the Mongoose components and the audio routing, the software is a valuable tool for troubleshooting any issues that may arise. Although you can determine a lot from the hardware status indicators, the software provides more detail, allowing you to drill down and pinpoint the problem with greater accuracy.
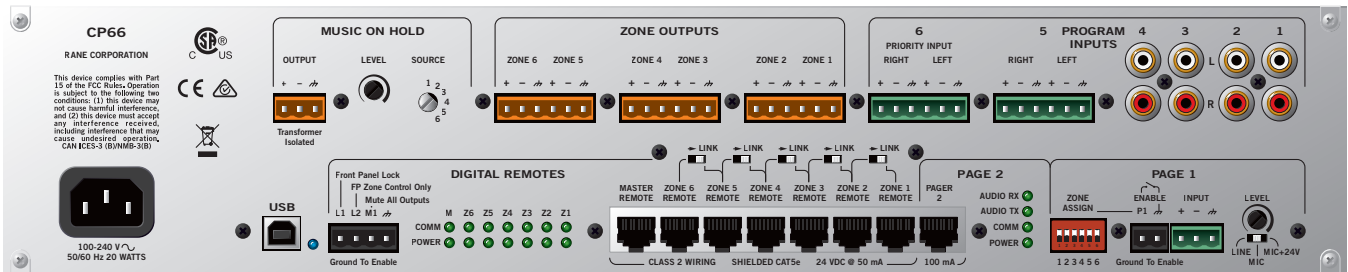
Mongoose Tracker requires a computer running Microsoft Windows® XP (Service Pack 2 or 3) or any version of Vista or 7 (including 64-bit) with an Ethernet port.
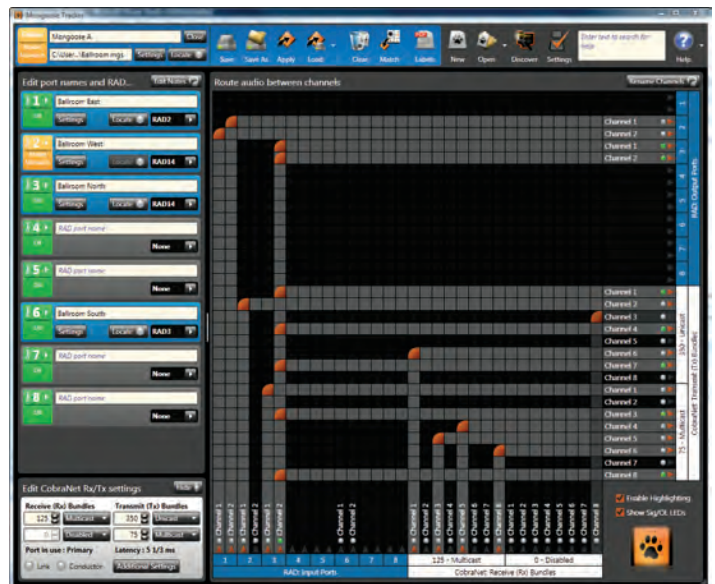
rane.com/mongoose
- **Download Mongoose Tracker (free)**
- **Download Design and Installation Manuals**
- **See System Examples**

15

Paging Processors

CP66 Commercial Processor

- Six Program Inputs assignable to Six independent and linkable Zones; One gated Priority Input.
- Paging Inputs with Priority assign; Recommend the optional PAGER2 Smart Paging Station with Mic input.
- Independent 3-Band EQ, Limiter, Ducker depth, Filter Cutoff, Priority Enable and Page Level per Zone.
- Music-on-Hold Output (Transformer isolated); Front Panel lockout switch; Includes PC software for easy naming and setup.
- Optional Remote Controls connect via shielded CAT 5e cable (see below).

PAGER2 Paging Station

Specific to the CP66, this unit lets you decide which combination of the six Zones to Page into. The unit accepts any gooseneck mic (not included) and has selectable 24 V Phantom Power. It normally sits on a desk or table with lockdown capability. It connects to and is powered by the CP66 via shielded CAT 5e cable up to 150 meters (500 feet) in length. Labels for custom Zone and Group names may be inserted into the protective faceplate.


DR1 Remote Level Control

The LCD display shows the name of the Zone or Group that it is connected to, customizable in the CP66 Software to anything you like. The Level value is also shown, and updated dynamically when it is changed elsewhere, such as in a linked group with multiple Remotes connected. The display has a backlight for readability that turns on when used, then dims after a short time period. The DR1 may be installed in a standard electrical box with a minimum depth of 5.7 cm (2.25"). Connection to the CP66 is via shielded CAT 5e cable up to 300 meters (1,000 feet) in length. Available in white, ivory and black, the DR1 includes a matching Decora® plate cover.
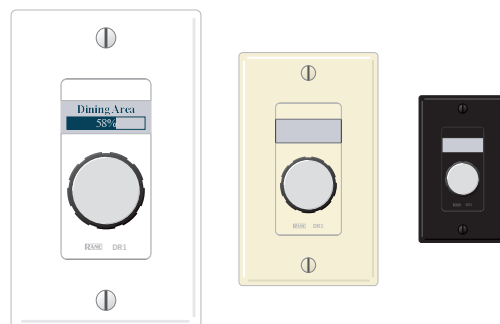
DR3 Selection & Level Control

The DR3 provides Level control with added Input Source selection. This lets you select the audio source for a room from within the room itself, or anywhere else you need remote control. The DR3 can also be used as the Master Remote for the CP66, displaying the Volume Level for all Zones and Groups and allowing you to change each of them dynamically from a single location. The DR3 may be installed in a standard 2-gang electrical box with a minimum depth of 5.7 cm (2.25"). Connection to the CP66 is via shielded CAT 5e cable up to 300 meters (1,000 feet) in length. Available in white, ivory and black, the DR3 includes a matching Decora® plate cover.
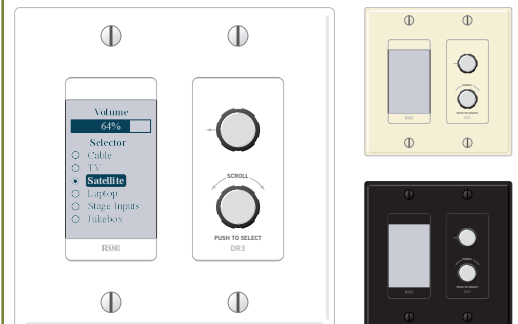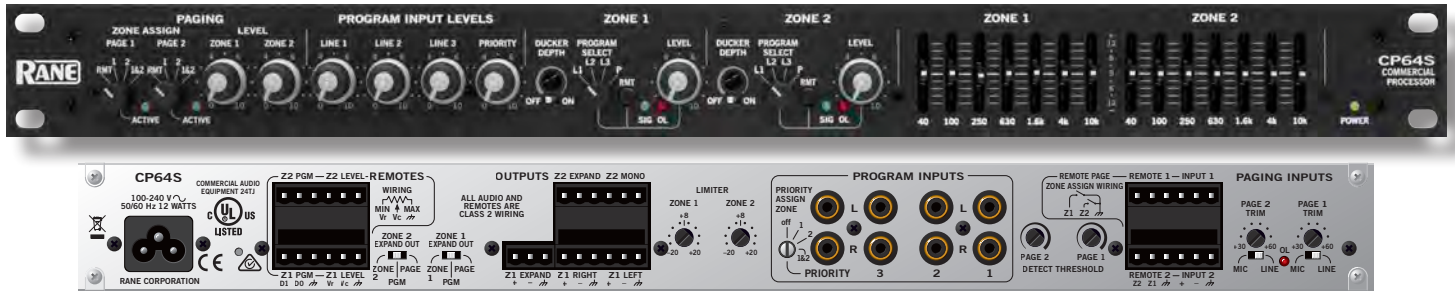
CP64S Commercial Processor

- 4 Stereo line inputs with priority and adjustable page ducking depth.
- 4-level priority; 2 expand outputs can select page-only, program-only or zone.
- 2 Mic/Line page inputs independently assignable to 1 mono and/or 1 mono/stereo zone.
- Each Zone has independent 7-band EQ. Optional ZR1 Remote for source selection & volume.

The ZR1 Remote fits in a standard US electrical box and may be finished with a Decora™ plate cover (not included).

ZR1 Zone Remote

CP52S Commercial Processor

- Mic/Line page input assignable to 1 stereo (with mono switch) zone with 7-band EQ.
- 4 Stereo line inputs with priority and adjustable page ducking depth.
- 3-level priority; Expand output selectable as page-only, program-only or zone.
- Optional ZR1 Remote for source selection & volume; Optional SCP1S EQ-only security cover.

SCP1S EQ Security Cover

ZR1 Zone Remote

Example Application

CP52S Commercial Processor

ZR1
— PROGRAM SELECT
— LEVEL

MP3 / Phone

Wireless Mic Receiver

Powered Speaker

Powered Speaker

Feed to Background Music System

Streaming Music Service

CD Player

DVD or TV Audio

17
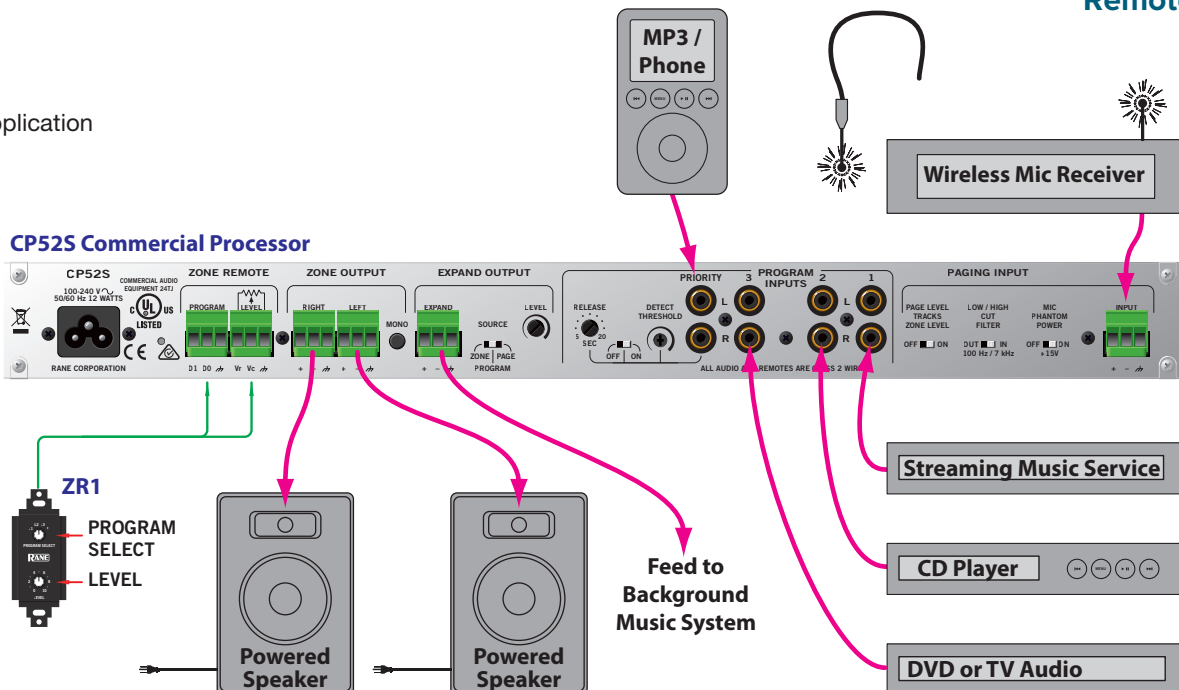
Mic & Line Mixers

MLM42S Mic & Line Mixer

- 4 inputs with automatic recognition of mic or line level signals
- 3-band Accelerated Slope™ (off to +6 dB) tone controls, gain trims and selectable phantom power on each input.
- Post-mix 1/4" Effects loop with Wet/Dry pan control.
- RCA unbalanced outputs; XLR and TRS balanced outputs are mic or line level selectable; Internal universal power supply.

MLM82S Mic & Line Mixer

- 8 inputs, 2 outputs – 4 balanced mic/line inputs, 4 balanced/unbalanced stereo or mono line inputs.
- Mic inputs have switchable phantom power, mic/line level, and output assignable.
- Outputs individually switchable to mic-level, line-level, stereo or mono.
- Balanced XLR mic/line inputs, 1/4" TRS line stereo/mono inputs, XLR outputs. Internal universal power supply (100-240 VAC).

The AM1 and AM2 Automixers also mix mic and line inputs in expandable configurations. See them on page 6.

Splitter / Mixer

SM26S Line Splitter / Mixer

- Combination 6 x 2 line mixer, 2 x 6 line splitter, or 6 x 6 line driver.
- Capable of 4-pair stereo line splitting or mixing.
- Mix, pan and level controls with 12 dB gain for level matching.
- Balanced 1/4" TRS connectors; Internal universal power supply (100-240 VAC).

Distribution Amplifier
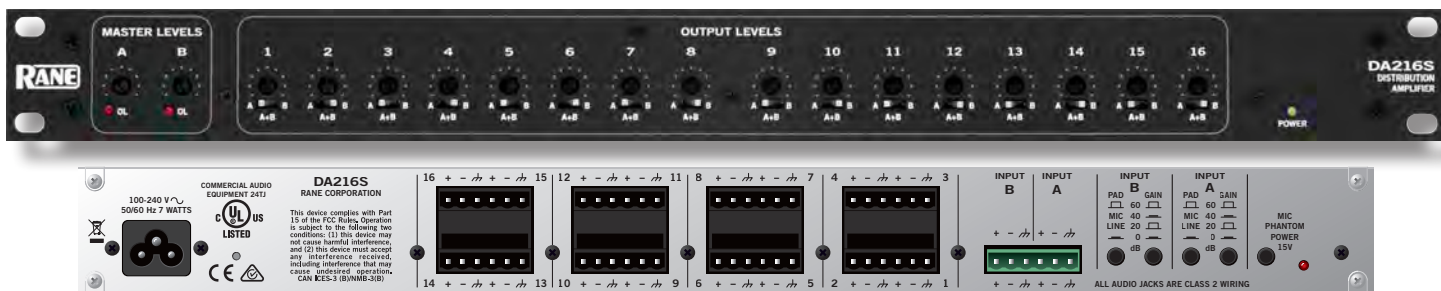
DA216S Distribution Amplifier

- 2 balanced mic/line inputs, 16 balanced outputs individually assignable to A, B, or both.
- Broad gain range with mic or line inputs.
- Switchable 15V phantom power works with most common condenser mics.
- Balanced Euroblock connectors; Internal universal power supply (100-240 VAC).

19

DC22S Stereo Gate / Compressor

- Two independent gates and compressors with output level controls; Gate acts as a downward expander, so quiet parts get quieter.
- True master/slave operation in Link mode for stereo program compression without image shifts.
- Balanced 1/4″ TRS & XLR connectors; Internal universal power supply (100-240 VAC).
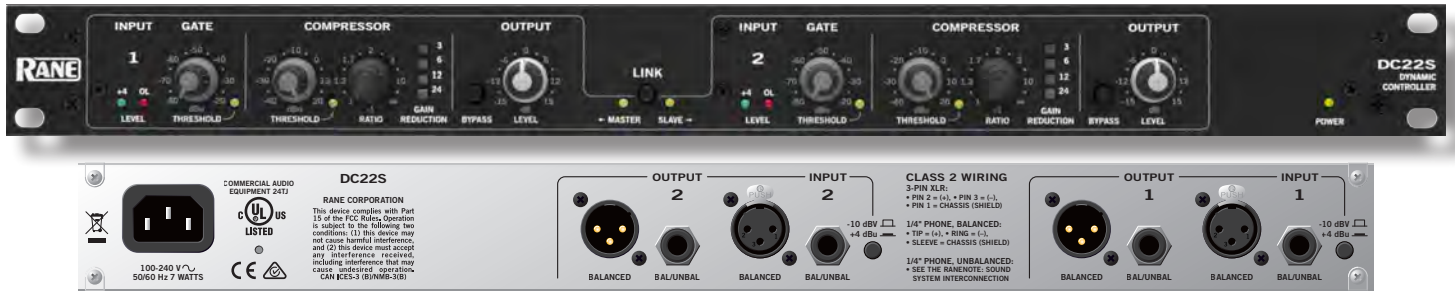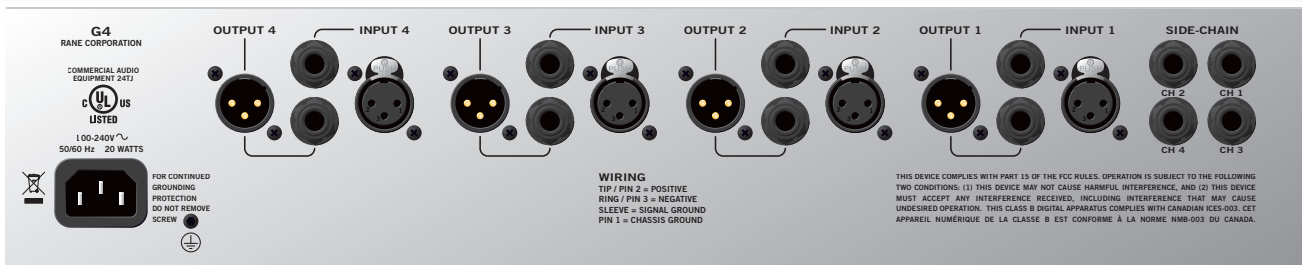

G4 Quad Gate / Ducker / Expander

- Independent Quad Gate / Expander / Ducker with look-ahead peak detector; Expand mode uses rms detection.
- Side chain switch selects external input or internal High & Low Cut Filters; Side-chain metering.
- DSP with familiar analog controls; Balanced 1/4″ TRS & XLR connectors.

This product has not been tested to the current CE requirements and is not available in markets requiring CE compliance.

G4 Look Ahead Gating
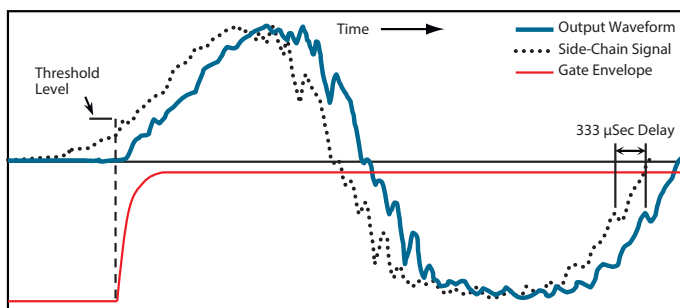
The G4 uses a very short look ahead (16 samples, or 333 µSec) with exponential ramping to ensure accurate clickless gating.
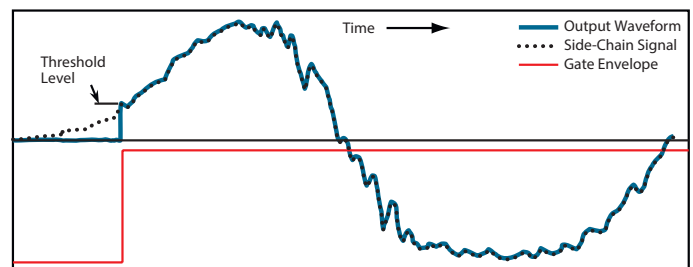
Conventional gates without look ahead or ramping result in audible clicks at fast attack settings.

Graphic Equalizer
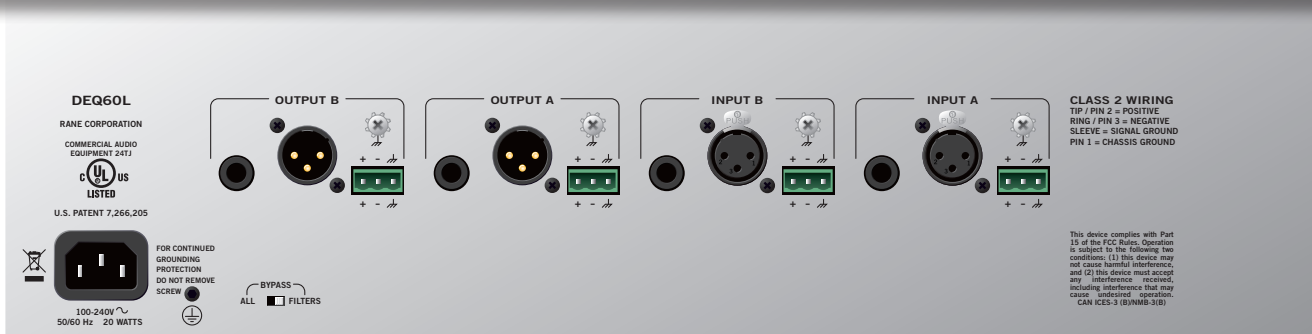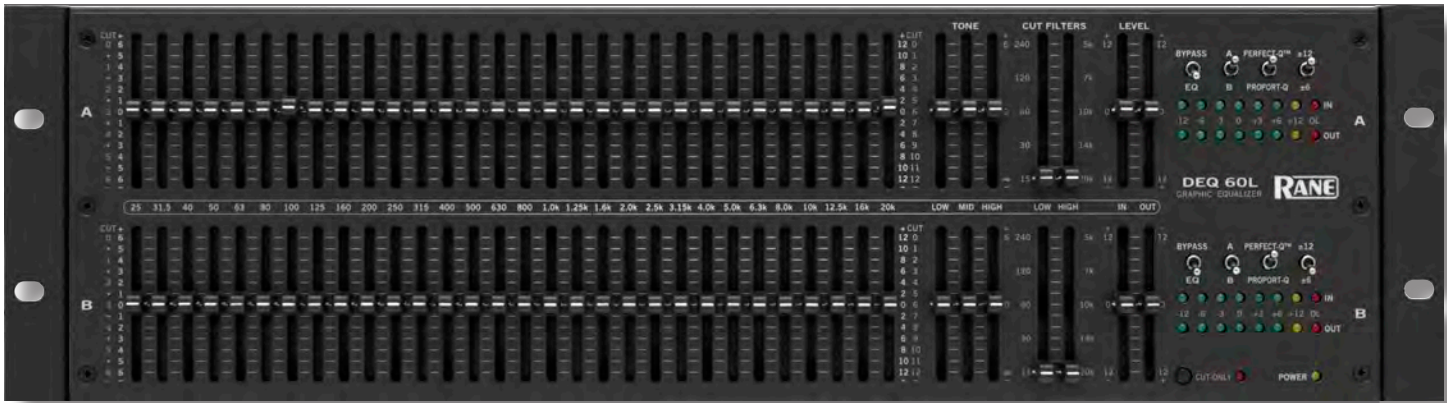
DEQ 60L Stereo ⅓-Octave Graphic Equalizer

- 2 x 30 bands of switchable Perfect-Q (no filter interaction, true WYSIWYG) or Proportional-Q (broad adjustment) digital filters.
- 45 mm sliders with switchable ±6 or ±12 dB boost/cut range each channel; Switchable high-resolution -12 dB Cut-Only mode.
- Input and Output Level controls; Input and Output meters; Channel Bypass switches.
- Sweepable high-cut and low-cut filters; Separate Accelerated-Slope™ Low / Mid / High full-cut Tone controls.
- A/B curve comparison switches provide stereo linking with two memories; Balanced XLR, TRS and Euroblock connectors.
- Read the RaneNote "Perfect-Q™, the Next Step in Graphic EQ Design" at rane.com.

This product has not been tested to the current CE requirements and is not available in markets requiring CE compliance.
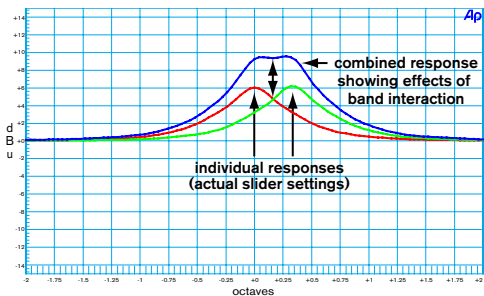
Figure 1. Band interaction of 1/3-octave Proportional-Q filters.
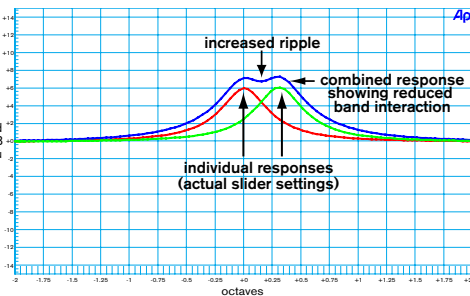
Figure 2. Band interaction of 1/3-octave Constant-Q filters.
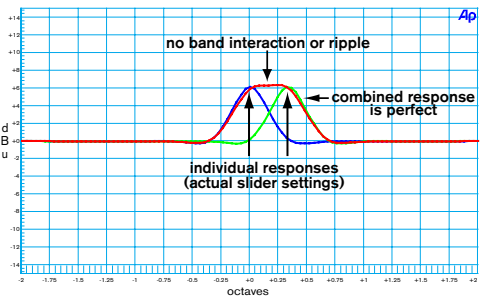
Figure 3. Graphic response of Perfect-Q filters.

Perfect-Q Advantages

The advantages of the Perfect-Q design go far beyond yielding a more accurate picture; it provides a degree of adjustment never before possible. Crucial subtle refinements of frequency response are for the first time possible, allowing for an unequaled ease of operation and clarity of sound reproduction. Changing a 1/3-octave setting changes only that setting. This is unlike any other graphic EQ available (i.e., one providing real mechanical front panel slide controls).

DSP Provides the Solution

The idea driving Perfect-Q is the same as constant-Q: constant bandwidth for each EQ band no matter what the setting. DSP allows doing things that aren't practical (or in some cases even possible) in analog circuits, producing an even better outcome as demonstrated by these Perfect-Q characteristics:

- What you see is (really) what you get.
- Constant bandwidth for all slider settings.
- Adjusting one band does not change neighboring bands.
- Improved phase response due to eliminated interactions.
- No band interaction overload problems.

Headphone Amplifier

HC6S Headphone Amplifier

- Six stereo amplifiers with both master and individual level controls.
- Each stage can be driven from the master stereo input or individual channel inputs.
- Drives stereo 1/4" headphone outputs on both front and rear panels.
- Balanced 1/4" TRS inputs; Internal universal power supply (100-240 VAC)

Delay

AD22S Dual Channel Audio Delay for Distance or Video

- Distance Mode: 2 to 999.99 ms delay range, converts between milliseconds / feet / meters with temperature compensation.
- Video Mode: up to 1 second delay in .5 frame increments in frames or milliseconds in all NTSC and PAL / SECAM frame rates.
- 2 memories; Remote contact closure memory recall with switchable front panel lockout; Fail-safe bypass for each channel.

Isolation & Balancing Transformer

BB 22 Balance Buddy

- 2 channels: -10 dBV (RCA) to +4 dBu (XLR) conversion.
- Nickel core transformers; No power supply required.
- Wide bandwidth; Low distortion.

Multichannel Amplifiers
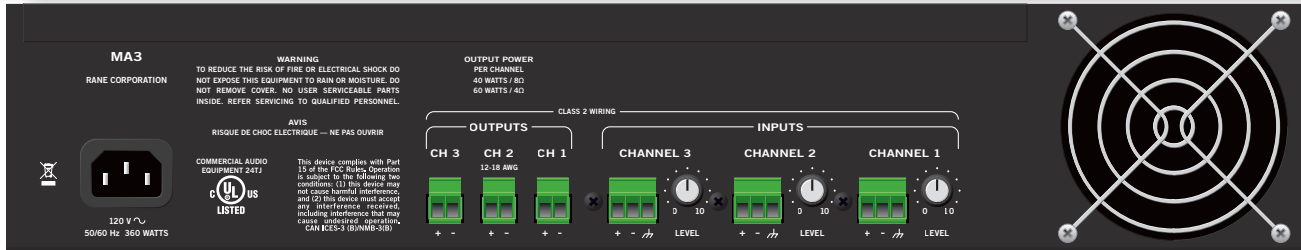
MA3 Multichannel Amplifier

- 3 independent channels @ 40 W rms into 8Ω; 60 W rms into 4Ω, 20 Hz-20 kHz all channels, all day.
- Dynamic limiters handle 20 dB of overdrive; 80 Hz high-pass filter selection; Sealed heat tunnel forced-air cooling.
- Balanced Euroblock inputs; Euroblock speaker connectors handle up to 12 gauge wire.
- Optional distribution transformers: 40 W 100 V (model TF 410) mountable on MT 6 rack panel (2U).

This product has not been tested to the current CE requirements and is not available in markets requiring CE compliance.
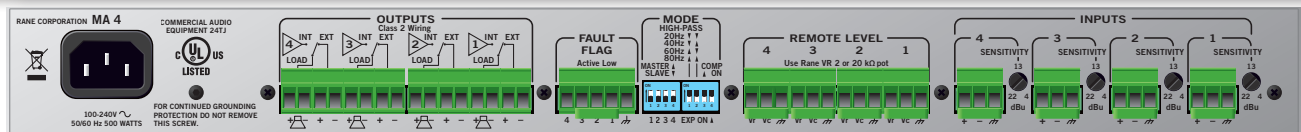
MA 4 Multichannel Amplifier

- 4 independent channels @ 100 W rms into 8 or 4 Ω, with built-in load monitoring, in just one rack space.
- Universal voltage, power-factor-corrected power supply with low inrush current.
- Advanced dynamics control adjusts for sensitivity setting, temperature & load Z.
- Remote fault reporting & redundancy switching; Adjustable high-pass filters; Remote potentiometer level controllable.

This product has not been tested to the current CE requirements and is not available in markets requiring CE compliance.
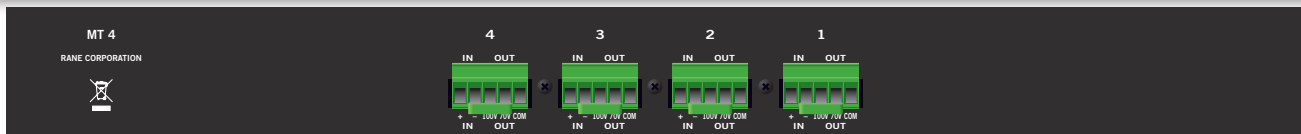
MT 4 Multichannel Transformer

- 4-channel 70.7/100 volt transformers for the MA 4 in a 1U rack chassis.
- Input 8Ω, 100 watts; Euroblock strain-relief connectors; Frequency response 40 Hz to 20 kHz +0, -1 dB

23

Simply Silky-Smooth

The MP2014 represents the perfect marriage of a high-quality rotary control-surface, with state-of-the-art digital signal processing and dual 16-channel USB sound cards. An essential assortment of analog and digital I/O supports mixing vinyl, CDs and USB streaming audio in any combination. Simple, elegant and easy to master.

TRAKTOR SCRATCH CERTIFIED

Different music genres require different filter and EQ configurations to properly deal with song content. The MP2014 allows DJs to adjust Filters, EQs and the Isolator to personalize the music. Channel and Isolator Filters can be stacked for truly amazing isolation and manipulation of musical elements.

Each PH/CD input can be switched to Phono level or CD deck level. An AUX input on each mixer channel is also available.

Two USB ports can connect two computers, each supporting 3 stereo playback and 7 stereo record channels. Play tracks to each input channel and the USB Aux. Simultaneously record each Deck pre-fader, post-fader, the Session In, the Mic, and the Main mix.

The Isolator EQ on the Main mix has powerful 3-band +10 dB to full-cut 24 dB per octave filters with fully adjustable crossover points.

Each input channel selects USB-A, USB-B, a PH/CD deck, or a stereo line AUX.
• Deck 1 USB playback channels 1-2.
• Deck 2 USB playback channels 3-4.

The Session Output goes to S/PDIF and RCA outputs for recording or chaining mixers together.

The Main Mix has a 16-segment stereo Meter, XLR Main Outputs with a Level control and TRS Booth Outputs with a Level control.

The Mic input can switch to mic-level or wireless-mic line-level. The DUCK switch temporarily lowers the mix by 10 dB while turning the mic on.

3-band +6 dB to full-cut 12 dB per octave tone filters on each input channel (with selectable 300 / 3k or 150 / 6k Hz crossover points in the user control panel*).

The Session In source may be RCA, S/PDIF or USB AUX playback channels 9-10.

A sweepable Low-pass, Low/High-pass, or High-pass 24 dB per octave filter can activate on each input channel, along with a central Resonance control.

Cue any input channels or the Session Input with the CUE switches and the Headphone monitor. Pan adjusts the Cue/Main Mono Split or Stereo Cueing. 1/4" jacks are on both top plate and front panel with an additional 3.5 mm jack on the front.

Real wood side panels make this mixer an instrument of beauty.

*The user control panel supports MP2014 options and status with a USB 2.0 computer connection. Class compliant MIDI and Audio means no driver is required for Mac OSX. A high performance universal ASIO driver is included to run most DJ and DAW software in Windows.
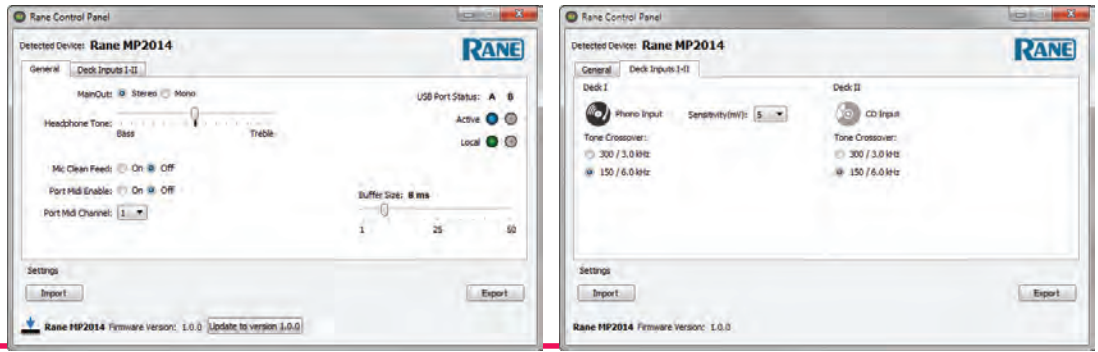
The bottom line: this mixer sounds fantastic with vinyl, CDs and music files.
The dynamic range is 116 dB from line in to digital/USB out or digital/USB in to line out. THD+N is only 0.001%.
All audio processing is 32-bit floating point with supported sample rates of 44.1 kHz, 48 kHz or 96 kHz.

Unit size: 14″ H x 11″ W x 4.3″ D [35.5 cm x 27.9 cm x 8.3 cm](includes knobs)

RANE MP2015

It's the Rotary Mixer Revival

ULTIMATE CLUB MIXER 2015

DJMAG.COM **DJ TECH AWARDS**

The MP2015 is a perfect marriage of high-quality rotary control surface, high-resolution digital signal processing and dual 24-channel USB sound cards. This assortment of analog and digital I/O supports mixing vinyl, CD, S/PDIF and USB streaming audio in any combination, with pristine audio quality and massive headroom that's never been heard in a DJ mixer before.

The MP2015 is supported in Serato DJ with the purchase of the Serato DJ Club Kit, which includes Serato DJ and the Serato DVS Expansion Pack. Purchase the kit from serato.com.

Traktor Scratch certification allows control of 4 Traktor decks with vinyl and/or control CDs. It's also the first Traktor Scratch certified mixer with dual USB ports, allowing easy back-to-back DJ changeovers. Download Traktor software from native-instruments.com.

BEST DJ PRODUCT OF 2015

30TH ANNUAL **MUSIC & SOUND** 9: **Awards** Nominee

serato DJ
CLUB KIT
Upgrade-Ready

TRAKTOR SCRATCH CERTIFIED

VIRTUAL DJ
NATIVE SUPPORT

Different music genres often require different filter and EQ configurations to properly deal with song content. The MP2015 allows performers to adjust Filters, EQs and the Isolator to suit their needs. Channel, Submix and Isolator Filters can be stacked for truly amazing isolation and manipulation of musical elements.

Each PH/CD input can be switched to Phono level, CD deck level, or S/PDIF with 128 dB dynamic range. An AUX input from RCA jacks can be assigned to any input channel.

Two USB ports can connect two computers, each supporting 5 stereo playback and 7 stereo record channels. Play tracks into input channels 1-4 and the Session In. Simultaneously record decks 1-4, Submix, Session In and the Main mix.

The Isolator EQ on the Main mix has powerful 3-band +10 dB to full-cut 24 dB per octave filters with fully adjustable cross-over points.

Each input channel selects USB-A, USB-B, PH/CD (1-4) or a stereo line AUX.
• Deck 1 USB playback channels 1-2.
• Deck 2 USB playback channels 3-4.
• Deck 3 USB playback channels 5-6.
• Deck 4 USB playback channels 7-8.

3-band +6 dB to full-cut 12 dB per octave tone filters on each input channel and the Submix (with selectable 300 / 3k or 150 / 6k Hz crossover points in the user control panel*).

A sweepable Low-pass, Low/High-pass, or High-pass 24 dB per octave filter can activate on each input channel and the Submix channel, along with a top panel Resonance control.

The Main Mix has a 16-segment stereo Meter, XLR Main Outputs with a Level control and TRS Booth Outputs with a Level control.

The Session Output goes to S/PDIF and RCA outputs for recording or chaining mixers together. The Session In source may be RCA, S/PDIF or USB AUX playback channels 9-10. Send it to the Submix channel or the Main Mix with the SUB button.

The Mic input switches for line-level, mic-level, and 48V phantom. The DUCK button temporarily lowers the mix by 10 dB while turning the mic on.

Cue any input channels or the Submix with the CUE switches and the Headphone monitor. Pan adjusts the Cue/Main Mono Split or Stereo Cueing. Conveniently located 3.5 mm and 1/4" jacks are on the top plate and front panel.
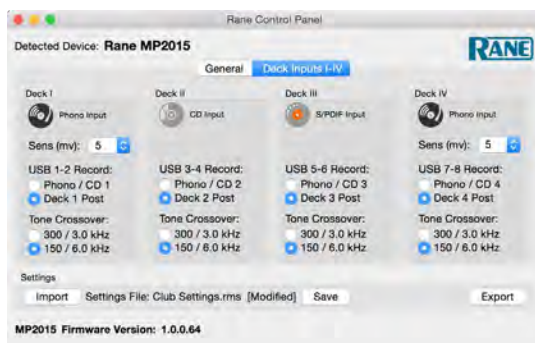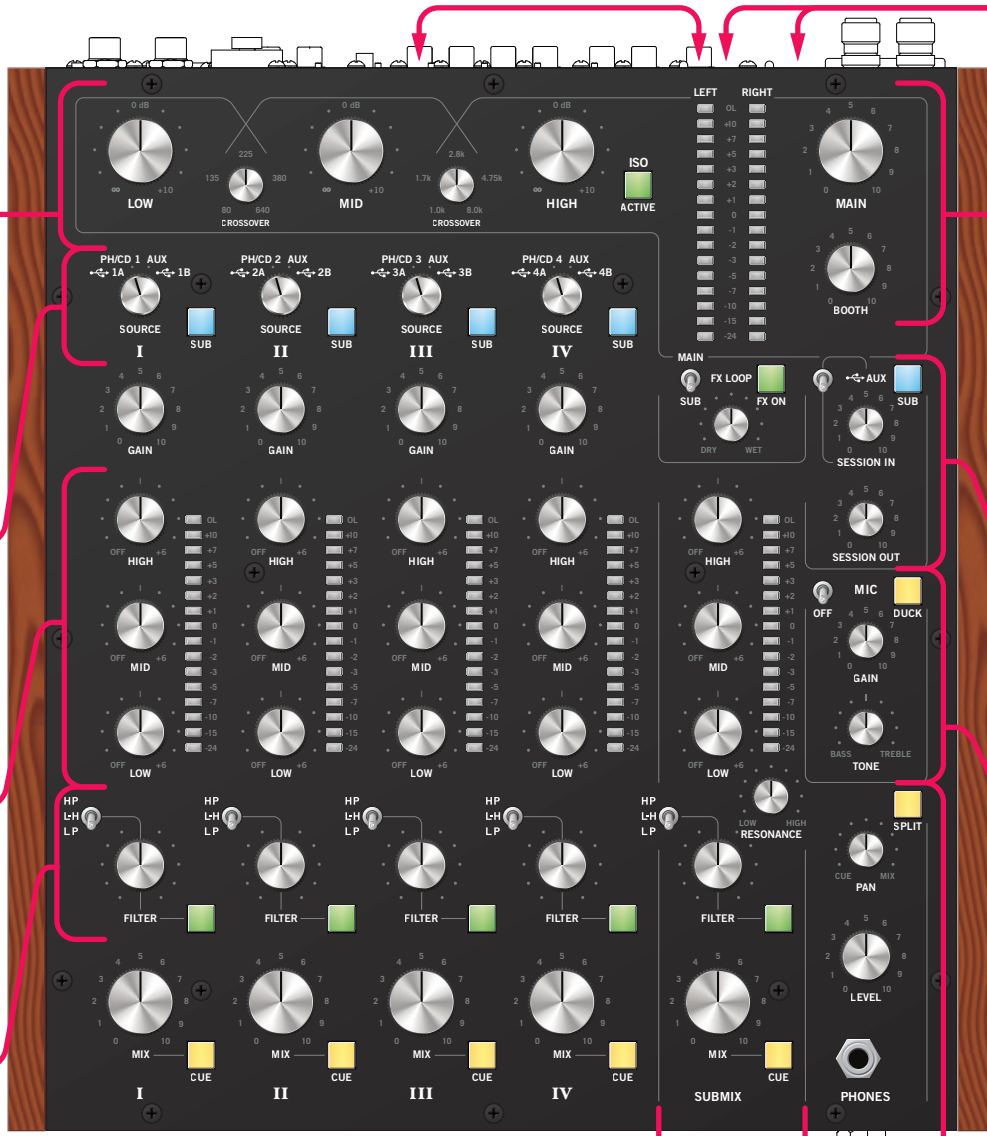
*The user control panel supports MP2015 options and status with a USB 2.0 computer connection. Class compliant MIDI and audio means no driver is required for Mac OS X. A high performance universal ASIO driver is included to run most DJ and DAW software in Windows.

The unique Submix feature allows grouping any number of inputs for easy multi-source mixing. Control EQ, volume, gain, filtering and effects of multiple channels with one set of controls vs. having to deal with multiple knobs and buttons on multiple channels. This can also be a 5th input channel by activating SUB on the Session In.

The bottom line: this mixer sounds fantastic with vinyl, CDs and music files.
The dynamic range is 116 dB from line in to digital/USB out or digital/USB in to line out. THD+N is only 0.0009%.
All audio processing is 32-bit floating point with supported sample rates of 44.1 kHz, 48 kHz or 96 kHz.

Unit size: 14˝ H x 13.1˝ W x 4.3˝ D [35.5 cm x 33.3 cm x 8.3 cm](includes knobs)

RANE TTM57mkII

A classic reborn!

The Rane TTM57mkII Mixer is a plug-and-play package supporting one or two computers, with two-deck digital vinyl simulation (DVS), Serato DJ with the SP-6 sample player, software effects and all the record and playback channels you need. Both USB ports connect to computers running Serato DJ and most DJ and DAW audio programs, using Native Core Audio support for Mac and an ASIO driver for Windows. Class-compliant audio and MIDI means no driver installation on a Mac, and a unified ASIO Rane driver is provided for Windows. Dual USB ports let DJs change over seamlessly between sets, even when they use different software. The TTM57mkII has so many improvements over the TTM57SL, it's truly a new mixer with a lot more creative power.

UNIQUE FEATURES
- Durable Lexan faceplate (no paint to wear off)
- Channel High, Mid, and Low Kill switches
- Filter Resonance adjustment
- MIDI-mappable footswitch jack to any parameter
- Headphone Split Cue Mode (Cue: left, Main: right)
- Changeable EQ crossover points
- Transform Joysticks with extra functions
- Easy access to Serato INT mode and Slip ON/OFF
- Session Output with a Level control
- External effects processor loop
- Up-fader Channel Swap switch

TTM57MKII SPECIFICATIONS
- Each USB 2.0 port supports 10 record and 10 playback channels.
- Great-sounding 32-bit floating-point audio processing sampled at 44.1, 48 and 96 kHz.
- Deck controls include source selection, Gain trim, 3-band full-cut isolator tone controls and a High/Low-pass sweep Filter.
- Independent USB FX Inserts for each deck support post-fader iZotope software FX.
- A dedicated USB Aux Input for SP-6 sample playback with Gain Trim, sweepable High/Low-pass Filter and a Headphone Cue.
- Magnetic crossfader and channel faders with reverse and contour controls (all faders are interchangeable).
- All controls are MIDI-mappable.

A typical setup includes two Serato DVS decks, software FX through independent USB digital inserts for each Deck, and the SP-6 sample player on its own USB Aux input.

Unit size: 14˝ x 10˝ x 4˝ (35.6 x 25.4 x 10.2 cm).

The TTM57mkII includes Serato DJ with 2 Serato Control Vinyl and 2 Serato Control CDs.

The Mic input can be switched for a regular dynamic mic or to line-level for a wireless mic. It has its own meter, Level and a one-knob tone control.

Two Program buses with Gain trim and meters:
• Select USB Port A or B computer playback.
• Select Two Phono / CD deck Inputs.
• Select Two Aux line-level Inputs.
• 3-band full-cut tone controls with kill switches.
• Sweepable Low / High-pass effect Filter.

Level control for each Output:
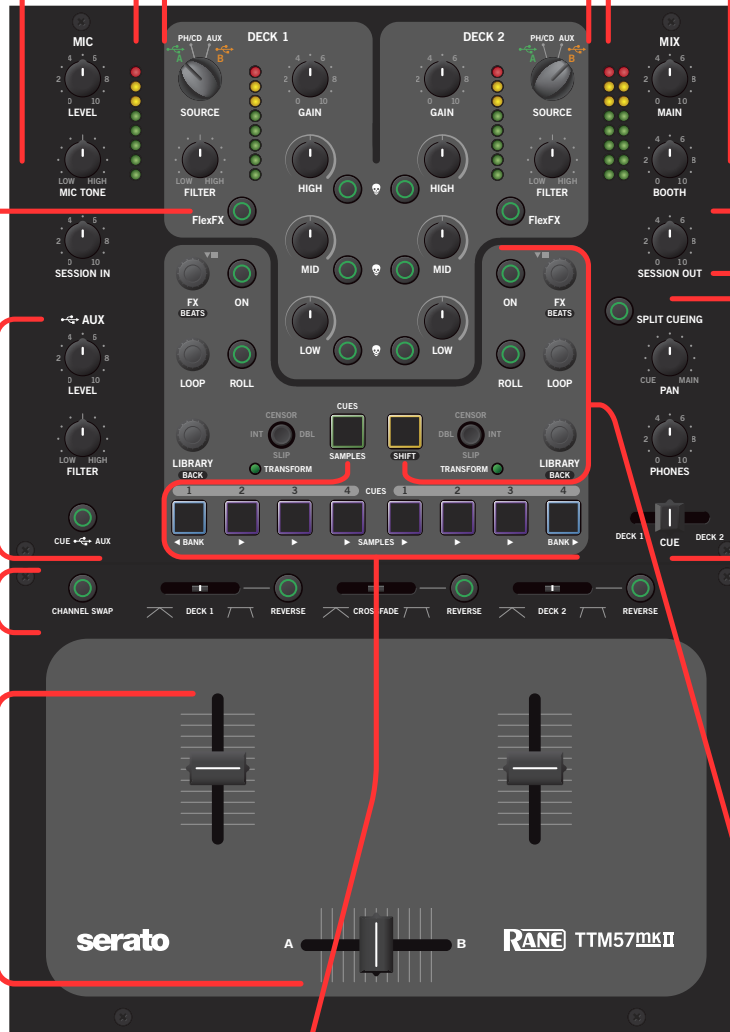• Main Outputs on XLR
• Booth Outputs on TRS
• Session Outputs on RCA

The FlexFX external FX Loop can assign the Left Deck, Right Deck or Both to an external analog FX Loop, independent of USB software FX inserts.

Session Input (opposite side) can connect an output from another mixer, or use it as another auxiliary input. Session Output connects to an input of another mixer, to connect two mixers together.

The USB Aux Input is usually from the Serato SP-6 Sample Player, with it's own Level control, Low / High-pass sweep Filter and headphone cue. The USB Cue overrides the Deck Cue when on.

True Split Cue or Stereo Cue with classic Left Deck and Right Deck slide control.

Channel Swap switches the left or right fader between Deck 1 and Deck 2. Contour controls adjust the faders and crossfader for a smooth transistion or a fast cut. Faders can be individually reversed.

Direct control of Serato DJ Decks:
• Software FX on/off button.
• FX knob parameter adjustment:
    • Press to select the FX.
    • Hold SHIFT to change the Beats multiplier.
• LOOP knob selects loop length.
    • Press it to engage Auto Loop.
    • Hold ROLL for Loop Roll.
• LIBRARY knob scrolls songs or crates, press to load.
    • Hold SHIFT to tab between song and crate selection.
• TRANSFORM joystick:
    • Press for Transform on/off.
    • Transform on: any direction cuts the audio.
    • Transform off: multifunction software control (gray text).

The three Crossfader and channel faders are Rane's famous and dependable no-noise, no-bleed, no-contact magnetic faders. Easy to clean and interchangeable.

The front panel accepts either 3.5mm or 1/4" headphone plugs. A footswitch (optional) can be connected to access learned MIDI functions.

Direct control of Serato DJ Cues and Samples:
• CUES / SAMPLES button toggles between Cues (red) and Samples (green).
• Cue 1-4 or 5-8 for each Deck. The active USB follows the Deck source selection.
    • Lit button colors match the Cue colors in Serato DJ software.
    • Press an un-lit button to create a new Cue. Hold SHIFT to delete a Cue.
• Six Sample triggers with Bank up (A-B-C-D) and Bank down (D-C-B-A) selectors.
    • Lit button (purple) indicates a ready-to-play sample in Serato DJ.

USB SERATO DJ IZOTOPE EFFECTS
Serato DJ includes FX powered by industry leader iZotope, enabling you to manipulate your songs and add another dimension to your mix. Additional iZotope FX Expansion packs can be purchased to grow your arsenal of FX. Enable and control the FX in Serato DJ and apply individual effects to each Deck.
MIDI CONTROL

MIDI mapping is done for you as the TTM57mkII is plug-and-play with Serato DJ. Advanced users can custom map most mixer controls to many other third-party audio programs. The MIDI control assignments are in the TTM57mkII Manual.

Battle Proven

The Sixty-Two is a plug-and-play package supporting one or two computers, with two-deck digital vinyl simulation (DVS), the Serato SP-6 sample player, software plus hardware effects and plenty of record and playback channels. Control Library, Cues, Loops and Samples, with direct control of more than 40 software parameters, laid out for fast and intuitive access.

Both of the USB ports connect to computers running Serato DJ, Scratch Live, and most DJ and DAW audio programs, supporting 6 stereo record and 4 stereo playback channels each. Two laptops can connect at once for easy DJ handover, with great-sounding 48 kHz 32-bit floating-point audio.

The Sixty-Two goes deep in effects. An internal Effects Engine has Filter (low- or high-pass), Flanger (+ or – feedback), Phaser, Echo (4 sync and filter modes), Robot and Reverb. MIDI beat clock in and out allow BPM sync'ed effects. Software FX from Serato DJ or other programs route through the USB effects insert. Rear FlexFX Loop jacks connect an external effects processor.

A typical setup includes operation with two Serato DVS channels, SP-6 sample player on an independent USB Aux playback channel and software effects enabled on the USB digital insert in the FlexFx loop. Record Deck 1 post-fader, Deck 2 post-fader or the Main mix to your laptop, with or without the Mic input.

- Deck controls include a Level trim, 3-band full-cut isolator tone controls, Left/Right Pan, and a High/Low-pass sweep Filter with variable resonance.
- The XLR/TRS Mic/line input features a Level trim, two-band tone controls, and FlexFx assign.
- The USB Aux Input for SP-6 sample playback includes a High/Low-pass sweep Filter.
- Long-life dependable magnetic crossfader and channel faders have reverse and contour controls on the front panel.
- All controls are MIDI-mappable.
- Durable Lexan faceplate (no paint to wear off)
- Unit size: 14.25″ x 10.5″ x 4″ (36.2 cm x 26.7 cm x 10.2 cm)

serato DJ   **RANE**   The Sixty-Two includes Serato DJ with 2 Serato Control Vinyl and 2 Serato Control CDs.

Mic Input has switchable Mic or Line-level with 2-band full-cut tone and pan controls. The Mic can route to FlexFX or record to USB. Mic Over ducks Deck sources by 12 dB. Clean Feed sends the Mic only to the Main Out.

In Auto mode, Loop buttons use the Serato DJ Auto Loop, lighting the buttons orange. In Manual mode, Loop buttons use manual looping features, lighting the buttons green. Select knob adjusts the loop length.

FlexFX are stackable:
• Six internal effects with seamless on-beat switching between effects.
• External Insert engages the external analog Effects Loop.
• Insert engages software effects through USB.

Aux Input is from the USB playback stereo pair 5-6, usually from the SP-6 sample player. You can sweep the Low-pass / High-pass filter and use FlexFX on samples.

The FlexFx Loop can create a sub-mix with any combination of the two Deck buses, Mic, and USB feed, and then add internal or external effects. This submix may be recorded via the USB Send, or output by the analog FlexFx Loop Send.

Contour controls adjust the faders and the Crossfader for a smooth transistion or a fast cut.

Two Program buses:
• Select either USB port for playback and MIDI.
• Four Phono / Line Inputs.
• Left / Right Pan.
• 3-band full-cut tone controls.
• Sweepable Low / High-pass filter.

Two USB ports, each with six stereo record channels and four stereo playback channels simultaneously available, allows two DJs with their own laptops to share the mixer. The button assigns the SP-6 sample player to the indicated USB port.

Back buttons shift between crates & tracks. Scroll knob scrolls crates & tracks, click it to load the track to a deck.

Level controls on each Output:
• Main Output on XLR jacks.
• Booth Output on 1/4" TRS.
• Session Output on RCA.

Cues button = orange: Recall 5 Cue Points for each left and right Virtual Deck in Serato DJ. Samples button = red: Play four banks of six samples from the Serato SP-6 sample player.

True Split Cue for any Program bus or the FlexFX submix with effects to the front panel 1/4" and 3.5 mm headphone jacks.

MIDI mapping is done for you as the Sixty-Two is plug-and-play with Serato DJ or Scratch Live. Advanced users can custom map most mixer controls to many other third-party audio programs. The MIDI control assignments are in the Sixty-Two Manual.

The Crossfader and channel faders are no-noise, no-bleed, no-contact magnetic faders.

RANE SIXTY-FOUR

The Sixty-Four is the ultimate plug-and-play mixer for a wide range of music and software, allowing remixing and music production with more layers and effects.

You've mastered mixing and scratching on two channels. Pushing the limit is in your nature and it's time to raise the bar. The Rane Sixty-Four mixer and Serato DJ software are the tools you need to step your game up. More channels, more decks, more effects…challenge accepted.

Mixing four channels requires a wide variety of amazing transition effects, the ability to sync tracks, more flexible cueing and looping, and versatile transport and mixing capability. For DJs familiar with Scratch Live, the mixer and software will feel familiar and intuitive while providing the advanced features required to step your game up.

- Two USB ports simultaneously stream audio on two computers.
  - DJ handover has never been easier with all audio and MIDI automatically routed to the desired port from the mixer.
- Six stereo USB record and five stereo USB playback channels for DVS and multitrack recording, with dedicated channels for inserting any of the iZotope effects in the post-fader mix.
- Each of the four input channels has:
  - Four stereo Phono/CD input selection.
  - Access to shared AUX input.
  - Stream audio to/from one of two USB ports.
  - Gain Trim, 3-band isolator EQ.
  - High/Low-pass Filter with resonance adjust.
- Two fully independent microphone inputs:
  - One with phantom power switch.
  - One with line-level input switch.
  - Independent Trim, Pan, EQ and FlexFx.
- Advanced FlexFx Loop supports:
  - Six fantastic built-in BPM-driven effects.
  - Analog Insert for effect boxes.
  - USB Insert for each USB port allows post-fader Serato DJ iZotope effects.
- Two independent Serato DJ control strips.
- Unit size: 14.3″H x 12″W x 4″D
  (36.4 x 30.5 x 10.2 cm)

The Sixty-Four includes Serato DJ with 4 Serato Control Vinyl and 4 Serato Control CDs.

SOFTWARE CONTROLS ARE BUILT-IN FOR ONE OR TWO COMPUTERS

- Includes Serato DJ software.
  - Includes Rane ASIO and Core Audio Drivers for Serato DJ and most popular DJ and DAW audio programs.
- Advanced MIDI and audio routing: route any deck to either USB Port, and MIDI follows the audio.
- Control Library, Cues, Loops and Samples on two computers.
  - 30 controls with 157 unique mappings for software.
- Each of the two USB ports supports six stereo record and five stereo playback channels.
- USB record channels support:
  - Vinyl control signal for four Virtual Decks, *or* record any one of the four Decks post-fader.
  - Record the Main Mix, Mic 1 or Mic 2.
  - FlexFX USB Insert Send to each computer.
- USB playback channels support:
  - Playback for four Virtual Decks.
  - FlexFX USB Insert Return from each computer.
- Great-sounding 32-bit floating-point audio sampled at 48 kHz.

DECK INPUT CHANNEL CONTROLS

- Pre-fader Level, 3-band full-cut isolator tone controls.
- Low- / high-pass sweep Filter with resonance adjust.
- Crossfader, FlexFX and headphone Cue assigns.
- Proprietary magnetic crossfader with a contour control.
- Contour control for the channel faders.

TWO MIC INPUTS

- Mic 1 includes a Phantom power switch.
- Mic 2 includes a Mic / Line level switch.
- Controls: On / Off, Level, Pan, Tone and FlexFX assign for each Mic.
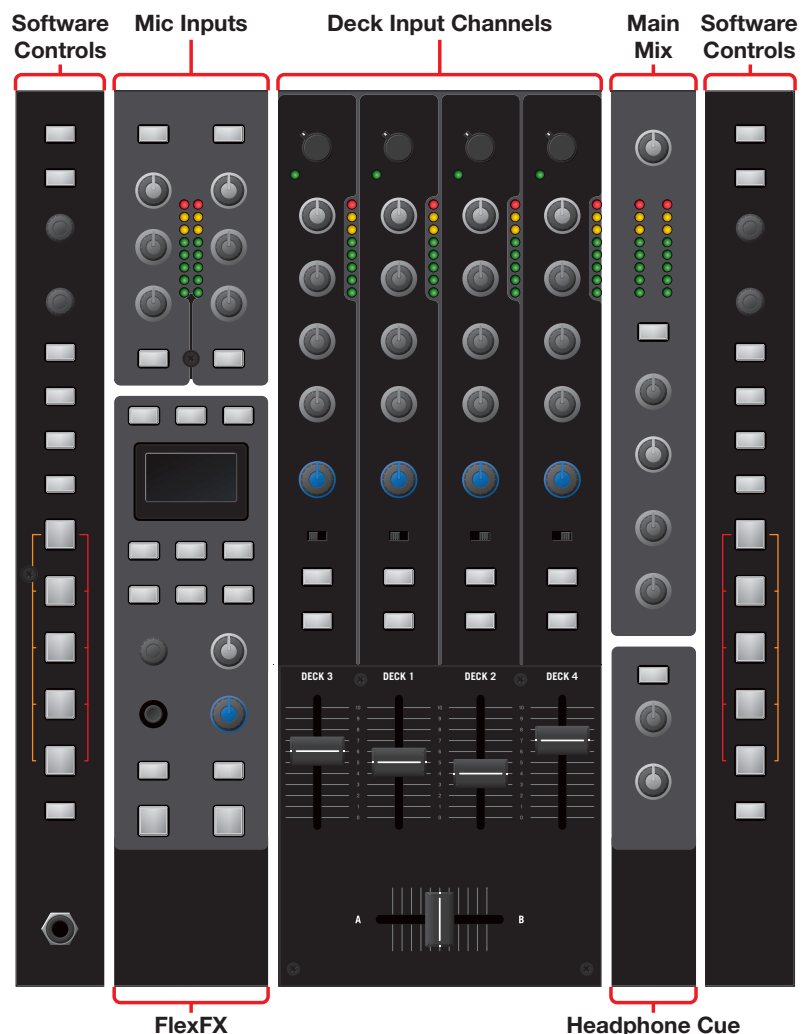- Unused Mic controls easily map to MIDI.

ADVANCED POST-FADER FLEXFX

- Internal Effects engine with:
  - Filter, Flanger, Phaser, Echo, Robot and Reverb.
  - MIDI beat clock track and generate.
  - Sync BPM with Serato DJ, MIDI beat clock or manual Tap button.
- USB Insert loop for post-fader software effects for each of the two ports.
- External analog insert loop for outboard effect units.

MAIN MIX SECTION

- Balanced XLR Main Mix and 1/4" TRS Booth outputs.
- RCA analog and S/PDIF Session In / Out.

HEADPHONE MONITOR WITH SPLIT-CUEING

Software Controls   Mic Inputs   Deck Input Channels   Main Mix   Software Controls

DECK 3   DECK 1   DECK 2   DECK 4

A   B

FlexFX   Headphone Cue
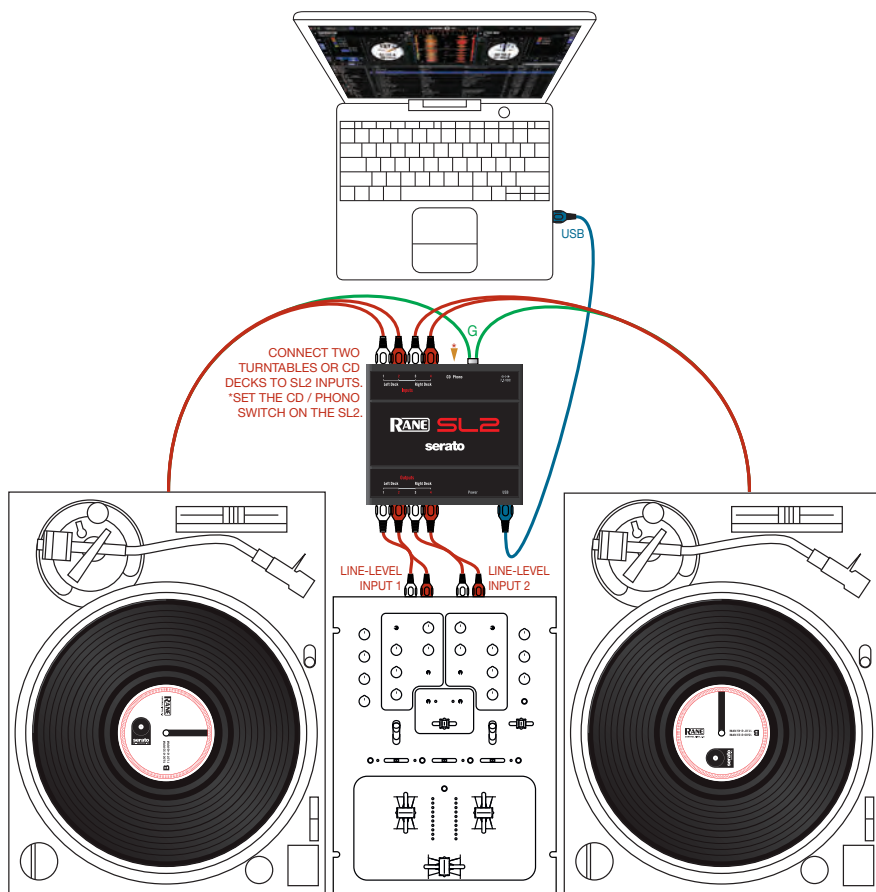
The standard for professional DJs

The Rane SL series of interfaces set the standard for vinyl emulation, and ship with Serato DJ software. Rane and Serato give you advanced features that add extra creativity to your DJing. This intuitive system replicates the traditional DJing experience for "real feel" usability. Low latency means the response time from touching the decks to hearing an audio signal is extremely fast. **The SL series of interfaces work with computers running Serato DJ, Scratch Live, and all major DJ and DAW programs because ASIO and Core Audio drivers are included**.

The Rane SL2 interface connects one or two standard vinyl turntables or CD decks to your computer using a single USB cable and audio connections to line inputs on any DJ mixer of your choice. This system includes Serato DJ software with two 12″ Serato Control Vinyl records, two Serato Control CDs, USB cable, and RCA audio cables to your mixer. Galvanic isolation guarantees audio is actively isolated from USB computer noise and power. Several MIDI controllers are supported, and a current list is at serato.com. An optional power supply allows playback of regular vinyl and CDs without re-patching cables when the laptop USB is unplugged, which helps between DJ sets. The SL2 delivers the hottest signal and best sound possible from your laptop without noise or distortion.

The SL2 advances the technology from the original SL1 with these improvements:
• CD / Phono input switch on the box.
• Superior sounding 24-bit converters.
• Hotter 3 Vrms input and output.
• 44.1 or 48 kHz selectable sample rate.
• Smaller and more compact cast design.
• ASIO / Core Audio drivers for 3rd-party software.

The SL2 interface box is 5.5″ x 5″ x 1.3″ (14.1 x 12.5 x 3.3 cm). See the "Minimum System Requirements" on page 37.

CONNECT TWO TURNTABLES OR CD DECKS TO SL2 INPUTS. *SET THE CD / PHONO SWITCH ON THE SL2.

LINE-LEVEL INPUT 1
LINE-LEVEL INPUT 2

USB   ASIO

The SL2 includes Serato DJ with 2 Serato Control Vinyl and 2 Serato Control CDs.

serato DJ   RANE

34

3-deck interface for professional DJs

The SL3 connects one, two or three standard vinyl or CD turntables to your computer and the mixer of your choice. This intuitive system replicates the traditional DJing experience for "real feel" usability. With unparalleled performance and stability, you'll soon see why thousands of DJs worldwide choose Rane with Serato software.

The auxiliary input provides a live input feed for creative sampling, recording your set or using a third vinyl turntable or CD deck.

The auxiliary output delivers a third deck or the SP-6 sample player output to a dedicated input on your mixer.
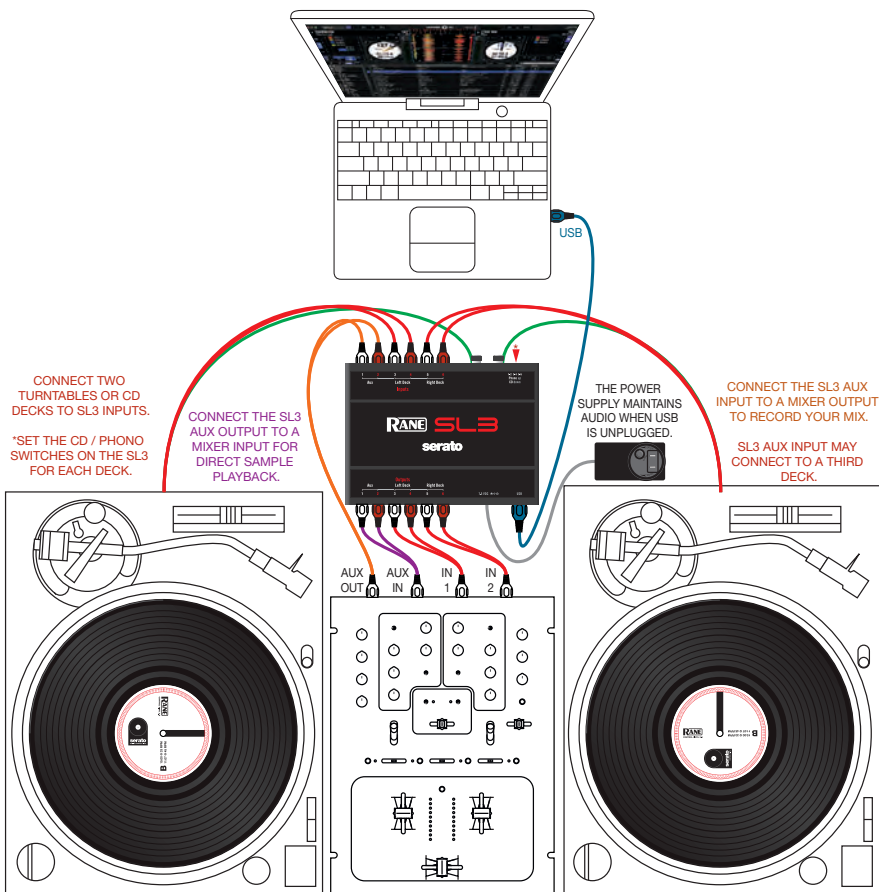
Studio-grade phono preamps, 24-bit audio processing, galvanic isolation, and a hot 3Vrms signal deliver the best possible sound from your laptop to your mixer.

The SL3 includes two 12″ Serato Control records and two Control CDs, USB cable, and RCA audio cables to your mixer. An international power supply with country adaptors is included to insure easy transfer when unplugging USB between DJs or playing regular vinyl and CDs.
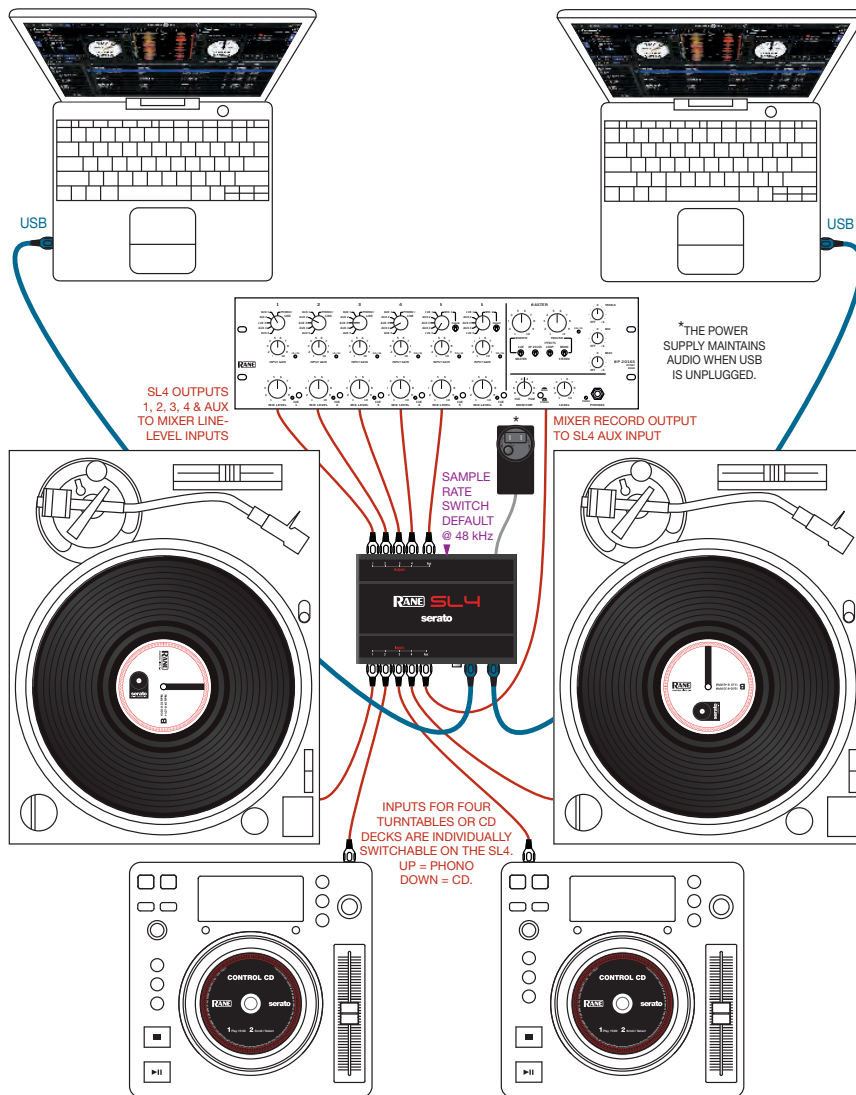
SL3 feature enhancements include:
• Supports up to three turntables or CD decks switchable in any combination.
• Aux Input for Live Mix Recording, LiveFeed or a third deck.
• Aux Output can be assigned to the Serato DJ SP-6 Sample Player or a third deck.
• 6-in 6-out sound card with all the popular DJ and DAW programs.
• Software and driver-switchable Direct Thru connections for regular vinyl or CD.
• External power supply included to provide Direct Thrus without a computer.

The SL3 interface box is 6.8″ x 5″ x 1.3″ (17.3 x 12.6 x 3.3 cm). See the "Minimum System Requirements" on page 37.

CONNECT TWO TURNTABLES OR CD DECKS TO SL3 INPUTS.

*SET THE CD / PHONO SWITCHES ON THE SL3 FOR EACH DECK.

CONNECT THE SL3 AUX OUTPUT TO A MIXER INPUT FOR DIRECT SAMPLE PLAYBACK.

THE POWER SUPPLY MAINTAINS AUDIO WHEN USB IS UNPLUGGED.

CONNECT THE SL3 AUX INPUT TO A MIXER OUTPUT TO RECORD YOUR MIX.

SL3 AUX INPUT MAY CONNECT TO A THIRD DECK.

The SL3 includes Serato DJ with 2 Serato Control Vinyl and 2 Serato Control CDs.

4 decks and 2 computers with your favorite mixer

The SL4 connects up to four vinyl turntables or CD players to one or two laptops, using the mixer of your choice.

The SL4 is the first standalone DJ interface with two USB ports for seamless DJ changeover and back-to-back performances. Get superior sound with high quality 48 or 96 kHz, 24-bit audio. Built-in galvanic isolation between USB and audio, with turn on/off muting, ensures that only the purest interference-free audio signal is heard. Low-latency ASIO and Core Audio drivers allow using the SL4 as a studio production tool with all of the popular DJ and DAW software applications.

The SL4 includes four 12″ Serato Control records and four Control CDs, two USB cables, and RCA audio cables to your mixer. An international power supply with country adaptors is included to insure continuous performance while unplugging USB cables between DJs.

SL4 feature enhancement summary:
- Supports up to four turntables or CD decks switchable in any combination.
- Two high-speed USB ports for two DJs for uninterrupted performances.
- Fifth Aux Input for session recording in Serato DJ or other audio program.
- Fifth Aux Output assignable to the Serato DJ SP-6 Sample Player.
- 48 kHz and 96 kHz sample rate switch on the SL4 rear panel.
- 10-in 10-out USB sound card with all the popular DJ and DAW software programs.
- Bus power from either USB port or the included external power supply.

The SL4 interface box is 7.25″ x 5″ x 1.7″ (18.4 x 12.6 x 4.3 cm). See the "Minimum System Requirements" on page 37.

USB

USB

SL4 OUTPUTS 1, 2, 3, 4 & AUX TO MIXER LINE-LEVEL INPUTS

*THE POWER SUPPLY MAINTAINS AUDIO WHEN USB IS UNPLUGGED.

MIXER RECORD OUTPUT TO SL4 AUX INPUT

SAMPLE RATE SWITCH DEFAULT @ 48 kHz

INPUTS FOR FOUR TURNTABLES OR CD DECKS ARE INDIVIDUALLY SWITCHABLE ON THE SL4. UP = PHONO DOWN = CD.

CONTROL CD

CONTROL CD

The collaboration continues strong with the addition of new Rane products designed to work with Serato DJ software.

Serato DJ provides support for DVS (digital vinyl system), iZotope FX, Sync, Slip Mode, more Cue points, jump-to-loop, 24-slot sampler, and takes advantage of Rane's high performance, ultra-low latency ASIO and Core Audio drivers.

Serato software combined with Rane hardware is the ultimate solution for professional DJs, using your turntables or CDJs with Serato Noisemap™ discs to control Serato DJ. This intuitive DVS replicates the traditional DJing experience for "real feel" usability. With unparalleled performance, sound quality and stability, you'll know why thousands of DJs worldwide choose Serato and Rane.

Serato's famous Virtual Decks give you all the important track information. Easy to read real-time BPM, time remaining/elapsed, track progress, pitch information and cue point indication are all clearly displayed.

Full color waveforms visually represent the audio frequencies. Red represents bass, green is mid-frequency and blue represents high treble sounds. The track Overview shows you playhead location and what's coming up.

Library management of your audio and video files is a breeze. Organize your music, build crates, view previous sets and add album art. Serato DJ can also load your iTunes library. Prepare audio files for playback with auto-gain, BPM calculation and Key detection.

Use keywords, genre, BPM or other rules to create Smart Crates that automatically update. Choose from multiple horizontal or vertical display modes to suit your performance style.

Serato DJ Highlights
• A controversial subject, sync is here for DVS DJs that want it. Hit sync to get tracks in time quickly, allowing you to do other things instead of moving the pitch slider. Try it, you might like it! If you don't, disable it and never see it again.

Classic Vertical Mode with two decks.

• Includes FX powered by industry leaders iZotope, enabling you to manipulate your songs and add another dimension to your mix.
• Use Slip Mode when scratching, using cue points and loops or other performance features, then when you've finished the playhead jumps back to where it would of been, always on beat.
• Set and trigger up to 8 Cue Points and 8 loops. Jump to different sections in your track, loop with Manual and Auto loops or drop a loop roll with ease.
• Trigger your favorite stings, samples and loops over your tracks with 4 Banks of 6 sample slots. The SP-6 sample player has two views to suit your preferences, Advanced mode, designed for preparing your samples, and a Simplified mode with minimum controls to focus on what is important during your performance.

Optional plug-ins
Serato Remote and **Serato Remote Mini** lets you see and perform Serato DJ functions from a iOS smartphone or tablet.

Serato Flip lets you create custom edits to extend and reimagine your music.

Serato FX Expansion Packs are powered by iZotope with Single and Multi modes to grow your effects arsenal.

Serato Pitch 'N Time DJ lets you speed up or slow down your track to extreme tempo values while maintaining its key perfectly.

Horizontal Stack Mode with four decks on the SL4 or the Sixty-Four.

Serato Video lets you control video playback just as you do with audio. Easily manipulate your videos with a large number of visual effects and transitions or add your own images, graphics and text to your performance.

MixEmergency is also compatibile with Serato DJ.

Minimum System Requirements
• Available 2.0 USB port
• 1280 x 720 screen resolution
• Intel 32 & 64-bit: i3, i5 or i7 1.07 GHz+
• 4 GB RAM
• 5 GB free HDD space
Mac: OSX 10.9 or 10.10
Windows: Windows 7, 8.1 or 10
These are the **minimum** requirements to run Serato DJ without optional plugins. For best performance we recommend a higher spec computer. If you have a large library, you will benefit from more RAM. Please visit serato.com before purchasing a new computer.

THE WORLD'S BEST TURNTABLIST MIXER DOESN'T NEED A COMPUTER

Battle Proven

The TTM 56S is a rugged mixer designed for the classic DJ that needs great sound, but doesn't need a computer to play great music.

- Mic input with tone controls and mic effects loop.
- The Faders and Crossfader have Contour and Reverse controls.
- Stereo Aux Input accepts a session mix, MP3 player or keyboard.
- Stereo Aux Output for session mix, booth, or recording.
- Post-fader FlexFX™ allows external reverb and echo decay effects to respond to fader action without cutting off tails.
- All four inputs are Phono/Line switchable, letting you connect four turntables, four CD decks or any combination.
- Both 1/4" and 3.5 mm headphone jacks are on the front panel.
- Unit size: 13.3" x 10" x 3" (33.8 x 25.4 x 7.7 cm)
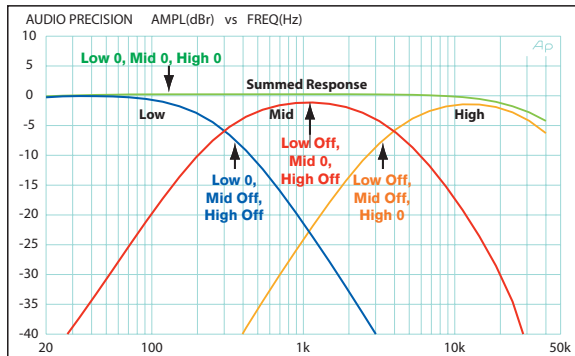
3-BAND ACCELERATED-SLOPE™ FULL-CUT EQ
High, Mid & Low tone controls react from +6 dB to off, for complete bass and treble cut on each channel. Engage switches allow A/B comparison and the ability to quickly cut or add tone effects.

NON-CONTACT CROSSFADER & CHANNEL FADERS
Rane's magnetic fader is the fastest, most accurate, and longest lasting on the planet. The design uses non-contact magnetic position sensor technology previously reserved for aerospace applications. Unlike optical non-contact faders, the magnetic fader is impervious to smoke, moisture, temperature and aging. The electrical performance is totally unaffected by use. No noise, no bleed — ever!

RANE

FEATURES	SL2	SL3	SL4	TTM57mkII	Sixty-Two	Sixty-Four	MP2014	MP2015	TTM 56S
2-deck mixing	•	•	•	•	•	•	•	•	•
3-deck mixing		•	•			•		•	
4-deck mixing			•			•		•	
Two USB ports for two computers			•	•	•	•	•	•	
Mic input				•	•	•	•	•	•
Phantom-power Mic input						•		•	
Second Mic input						•			
Mic input tone controls				•	•	•	•	•	•
Mic Input FlexFX					•	•	•		
3-band full cut tone controls				•	•	•	•	•	•
Magnetic mixer faders				•	•	•			•
FlexFX send / return loop				•	•	•	•	•	•
FlexFX USB software insert				•	•	•			
FlexFX Built-in mixer effects					•	•			
USB bus powered	•	•	•						
Self-powered (100-240 VAC)				•	•	•	•	•	•
USB input for Serato SP-6				•	•				
Serato SP-6 trigger buttons				•	•	•			
Serato Cue trigger buttons				•	•	•			
Serato Loop controls				•	•	•			
Serato Library controls				•	•	•			
Aux / Session input & output		•	•	•	•	•	•	•	•
Aux inputs				2		1	2	1	
24-bit converters	•	•	•	•	•	•	•	•	
44.1 kHz USB audio	•	•		•			•	•	
48 kHz USB audio	•	•	•	•	•	•	•	•	
96 kHz USB audio			•	•			•	•	
Main output connectors	RCA	RCA	RCA	XLR	XLR	XLR	XLR	XLR	1/4 TRS
¼" TRS Booth outputs				•	•	•	•	•	
¼" & 3.5 mm headphone outs				•	•	•	•	•	•
Split cue headphone monitor				•	•	•	•	•	
MIDI mappable controls	•	•	•	•	•	•	•	•	
MIDI beat clock in /out					•	•			
Core Audio / ASIO for audio software	•	•	•	•	•	•	•	•	
serato SCRATCH LIVE compatible	•	•	•		•				
serato DJ included	•	•	•	•	•	•			
serato DJ club kit compatible								•	
Virtual DJ native support	•	•	•	•	•	•		•	
Traktor Scratch certified								•	

Note: All Rane DJ products with USB are compatible with Traktor Pro and Virtual DJ without DVS.

Contents

Rane Corporation

Rane 2+ Year Limited Warranty

Rane's standard warranty covers parts and labor for 2 years from the date of purchase. Completion of the Rane Warranty Form (mail or online) entitles the owner to a 1 year extended warranty (for a total of 3 years [valid in U.S.A. only]).

All Rane equipment is engineered, manufactured and supported by Rane Corporation in Mukilteo, WA, USA, using globally sourced materials.

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