

Rane Dante Solutions

- Facility-wide digital audio distribution: including to and from all wall plates.
- Extend your Dante system cost-effectively.
 - One Rane Dante device/license covers all I/O — your entire HAL / DSP System.
 - Pay for Dante only when and where you need it.
- Multipurpose and Divisible Rooms — Combining &/or Overflow.
- Re-assign AEC for Dante & other mics between rooms using HAL presets.
- Incorporate flexible and intuitive end user controls.
 - Create custom tablet (iPad...), computer & smart-phone control pages (browser-based; no apps needed).
 - Incorporate cost-effective wired, knob & touch screen remotes (no PoE or Dante license needed).
- Rane's HAL wall plate audio & control remotes solve problems Ethernet and Dante cannot — for less money.

Venues

- | | |
|-----------------------|---------------------|
| ■ House of Worship | ■ Sports venues |
| ■ Auditorium | ■ Classrooms |
| ■ Performance Theatre | ■ Gymnasium |
| ■ Cafetorium | ■ Campus |
| ■ Hotel & Hospitality | ■ Corporate |
| ■ Lecture Hall | ■ Conference Center |

Rane RAD & DR Solutions

Ethernet & Dante solve none of these

Run shielded CAT 5e cables up to 500 feet (150 meters). At both ends of every RAD/DR cable, troubleshooting indicators show the status of all 4 twisted-pair CAT 5 cable 8P8C (RJ-45) crimps. Meaning, auto crimp testing (per twist) and indication is built in. All RADs contains signal present and overload indicators at both ends to help installers, consultants and non-audio end users understand if the "thing is on" and audio, or power, or the cable is working, ...or not. All RAD settings are stored in the HAL DSP, which permits all RADs to be used portably: move the same RAD model between locations and automatically, the appropriate settings are sent based on physical location (not IP or MAC Address). The HAL automatically pushes the correct workable firmware version and its settings to any vintage RAD model - newer or older, it does not matter. Since RADs are not IP devices, the HAL automatic settings and firmware-matching always happens even when all Ethernet switch ports are blocked, or when the DHCP server is down, or when the PoE power budget gets exceeded. There are 20-something RAD models in a variety of packages: many are wall plates, another plenum-rated (RAD16z is UL 2043), some are rack mount (AM2), some desktop (PAGER1), one is a 2-channel I/O USB Audio sound card (RAD27), some double as UI controllers, headphone amps and power amps too (RAD26).

HAL 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.

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 models are the base of any system, ranging from a simple 2x2, 6x10, 18x18, and the expandable HAL1x up to 528x528 inputs and outputs.

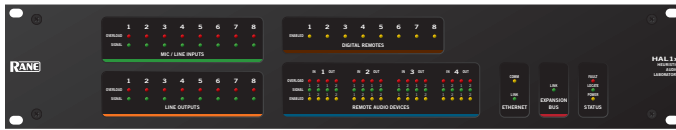
Download Halogen and design a system now!
rane.com/hal

Applications, installations, and solutions are at
blog.rane.com

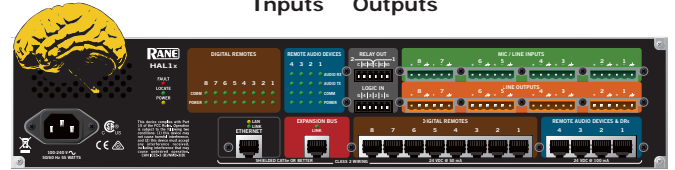
HAL1x and Expanders Comparison

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).



| | |
|----------------------------------|----------------------------------|
| 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 |
| Inputs | Outputs |



EXP1x Remote Audio 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.



Daisy-chain up to 32 EXPanders

| | |
|----------------------------|-----------------------------|
| More Inputs | More Outputs |
| Digital RAD Port Inputs 16 | 16 Digital RAD Port Outputs |



EXP2x Dante Expander for HAL1x

- Lets 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.



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

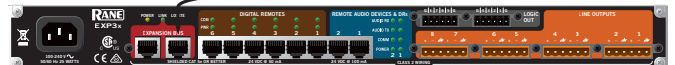


EXP3x Zone Output Expander for HAL1x

- 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.

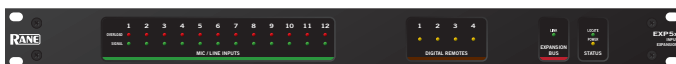


| | |
|---------------------------|----------------------------|
| More Inputs | More Outputs |
| Digital RAD Port Inputs 4 | 8 Analog Line Outputs |
| | 4 Digital RAD Port Outputs |



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 inputs.



| | |
|----------------------------------|--|
| More Inputs | |
| Mic / Line / Line-Plus Inputs 12 | |



*"Line-Plus" Inputs accept a 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.



Add AEC

HAL1x Expansion Bus

The HAL1x Expansion Bus supports up to 32 daisy-chained Expanders in any combination. The Expansion Bus requires shielded CAT 5e (or better) cable with RJ-45 connectors.

The bus supports 512 channels in and 512 out, although designers need not worry about wiring channels along the bus — this is automatically done within Halogen software. The Resources window in Halogen displays the number of channels in use and updates as you draw the audio wiring. Latency hops on the bus are 750 nanoseconds per hop. Thus, daisy-chaining 32 Expanders provides a maximum latency of 22.4 microseconds. See the Latency graphic below to add up the latency of any given path through the HAL1x, EXPs, RADs, the DSPs and converters.

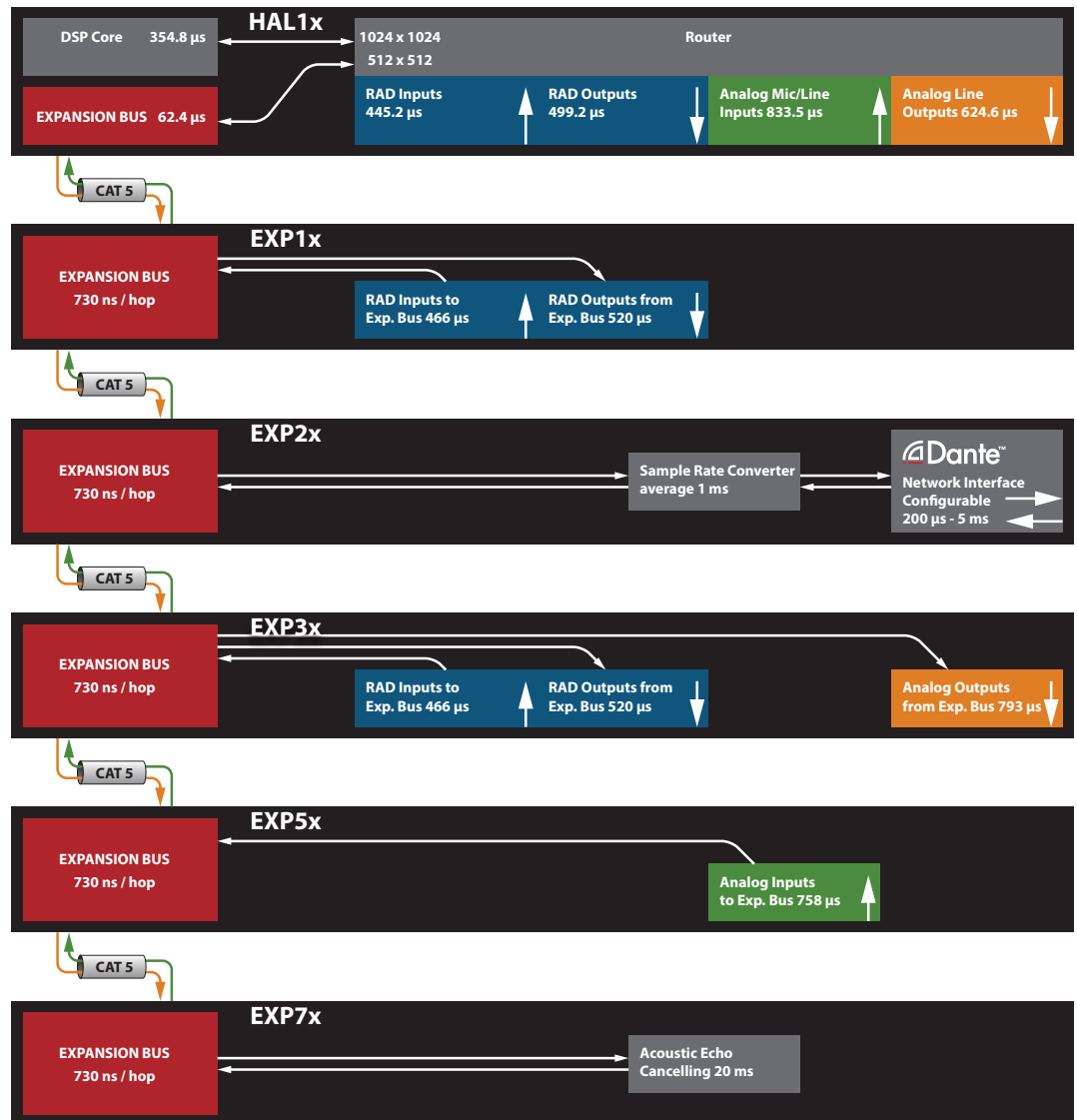
Thirty-two Expanders maximum in any order can be daisy-chained. For example, 16 EXP3x and 16 EXP5x Expanders daisy-chained, provides 128 outputs (8 out times 16), plus 192 mic/line-plus inputs (12 in times 16).

Some examples max out the Expansion Bus:

- If you need 256 RADs, daisy-chain 32 EXP1x Expanders. This is 8 RAD ports times 32 Expanders, 8 x 32 = 256 RADs. This still leaves 4 RAD ports available on the HAL1x.

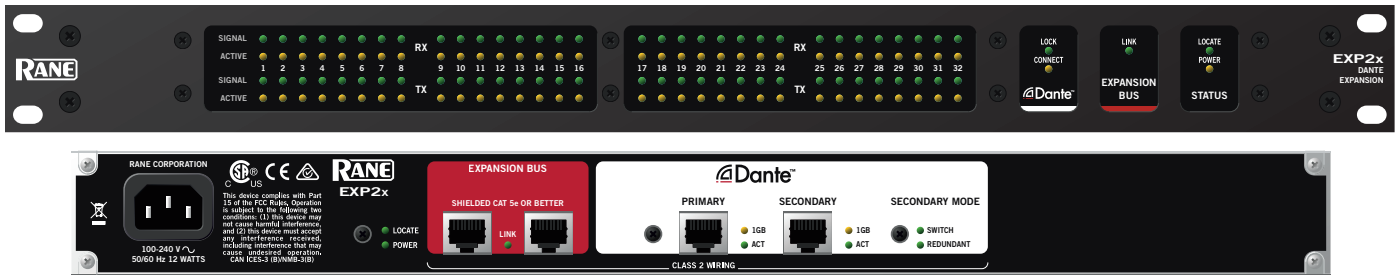
- For 256 output zones, daisy-chain 32 EXP3x Expanders.
 - For 384 mic/line inputs, daisy-chain 32 EXP5x Expanders.
- Each Expansion Bus cable can be 100 meters long (300 feet). This permits spreading Expanders across different locations or equipment rooms. Yet only a single HAL1x is required at the head-end of the daisy-chain. Star topologies are not supported — don't use Ethernet switches, they won't work. And since the EXP3x & EXP5x contain their own DSP, no DSP resources in the HAL1x device are used; thus adding these devices adds DSP resources to the HAL1x System.

Gigabit Ethernet Media Converters *are* supported. Thus, using multimode fiber, one can separate Expanders up to 2 kilometers (1.2 miles). Singlemode fiber distance goes up to 12 km (7.5 miles). The Expansion Bus is Ethernet Layer 1 only — there are no MAC and no IP addresses involved, therefore dedicated unmanaged media converters must be used.





HAL Hardware



EXP2x Dante Expander

The EXP2x is an input/output expander that enables the HAL1x to transmit 32 and receive 32 audio channels from a Dante™ network. Applications abound in houses of worship, installed sound, performing arts venues, education and corporate environments – anywhere a Dante network is used. The EXP2x also allows connecting a Dante network between multiple independent HAL1x systems.

Built-in sample rate converters convert the 44.1, 48, 88.2 or 96 kHz sample rate on the Dante network to the HAL's 48 kHz clock domain.

Daisy-chain up to 16 EXP2x Expanders to a single HAL1x to max-out at 512 x 512 channels on both a single cable on the Dante network and the HAL1x's Expansion Bus. The HAL1x is capable of 32 Expanders on its bus, so the EXP2x can be combined with other Expanders. For example, use 16 EXP2x Expanders with 512 input and 512 output channels, and then put on another 16 EXP3x Expanders for more outputs.

The EXP2x is equipped with a Secondary Dante port for either Redundant Mode or Switch Mode. Use Dante Controller software for all network audio and EXP2x settings via its Brooklyn II card.

Front panel and Halogen software indicators for Dante connection, network status, flow active, and audio signal present aid troubleshooting. Dante Controller provides all network setup, monitoring, control, diagnostics and troubleshooting beyond compare; while Halogen reads, but does not edit the Dante setup, simplifying which software to use and eliminating conflict.

Dante provides a no-hassle, self-configuring network with ultra-low latency, while providing a true plug-and-play digital audio network using standard Internet Protocols on existing infrastructure — without requiring a dedicated network. The technology is built on global networking standards, making signal distribution more flexible, cost-effective and user-friendly and has been used at some of the largest live events and sophisticated installations worldwide.

Read Rane's Dante Setup Philosophy under the EXP2x tab at rane.com/hal/hal1x.html.

Features

- Supports 44.1, 48, 88.2 or 96 kHz Dante network sample rates.
- Up to 32 transmit channels and up to 32 receive channels (at any supported sample rate - that's right, even at 96 kHz).
- 32 bi-directional channels of high-quality sample rate conversion.
- Switch Mode and Redundant Mode for the Secondary Dante network port.
- Clear signal presence and fault status indication in Halogen Software and on the EXP2x front panel.
- Discoverable and configurable using Dante Controller software.

What Ethernet switch can I use for my Dante network?

Answers to this and many other Dante questions are found at audinate.com/resources/networks-switches. The Cisco 300 Series Ethernet switches are available in many varieties, such as the 10-port, SG300-10. They are very affordable, managed, and some offer PoE versions if needed. If you use an Ethernet switch with “Green” Energy-Efficient Ethernet (IEEE 802.3az) turn off this feature. This green technology can delay packets hundreds of milliseconds which will stop all Dante audio from working.

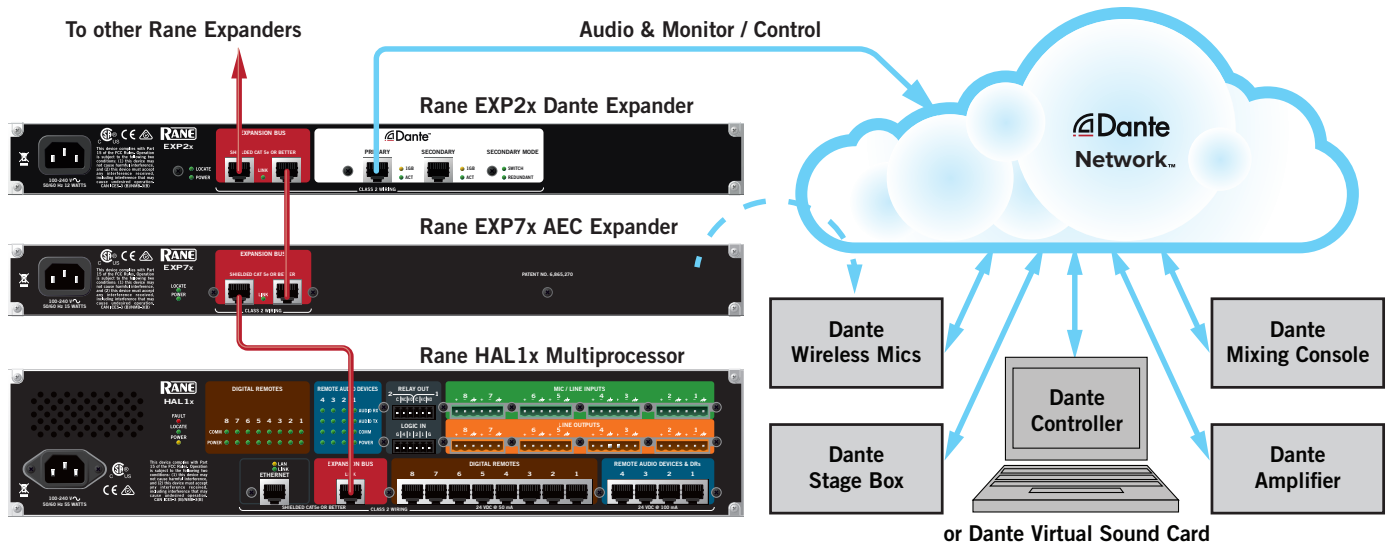


About Audinate

Audinate revolutionizes AV systems to enable its customers to thrive in a networked world. Audinate's patented Dante media networking technology has been adopted by the leading manufacturers in the professional audio/visual industry. Dante is used extensively for live performance events, commercial installation, broadcast, recording and production, and communications systems. Audinate offices are located in US, United Kingdom and Australia. Visit audinate.com for the latest news and information on the company. Dante is Digital Media Networking Perfected.

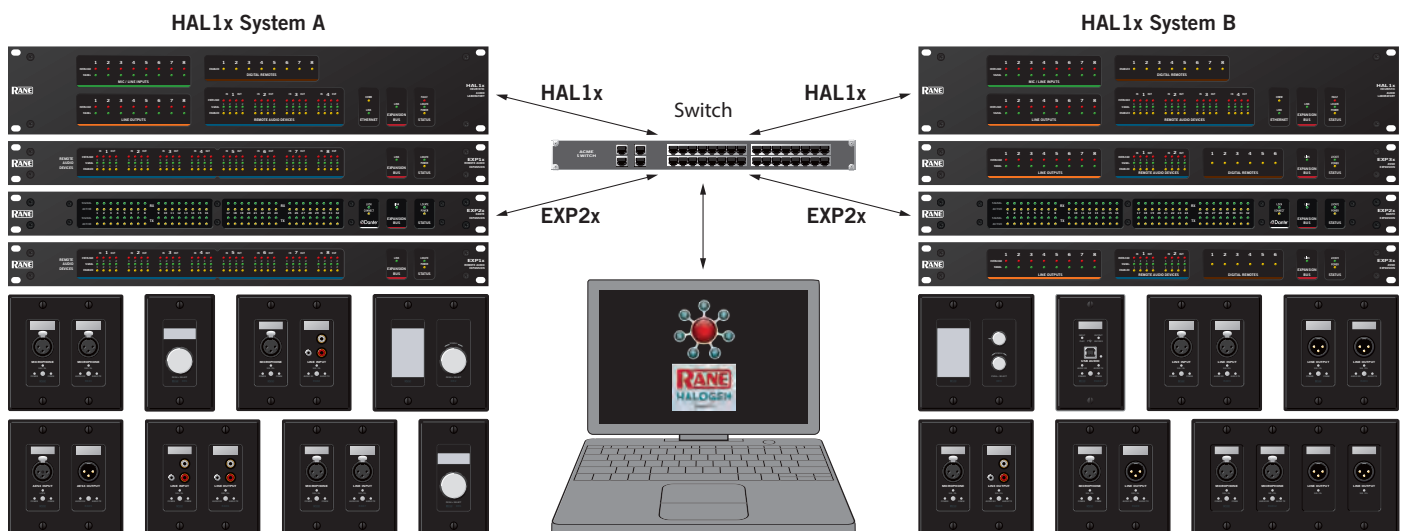
*Dante is a trademark of Audinate Pty Ltd.
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HAL and Dante - 5*

Example using a Dante network with the EXP2x, console, microphones and amplifiers.



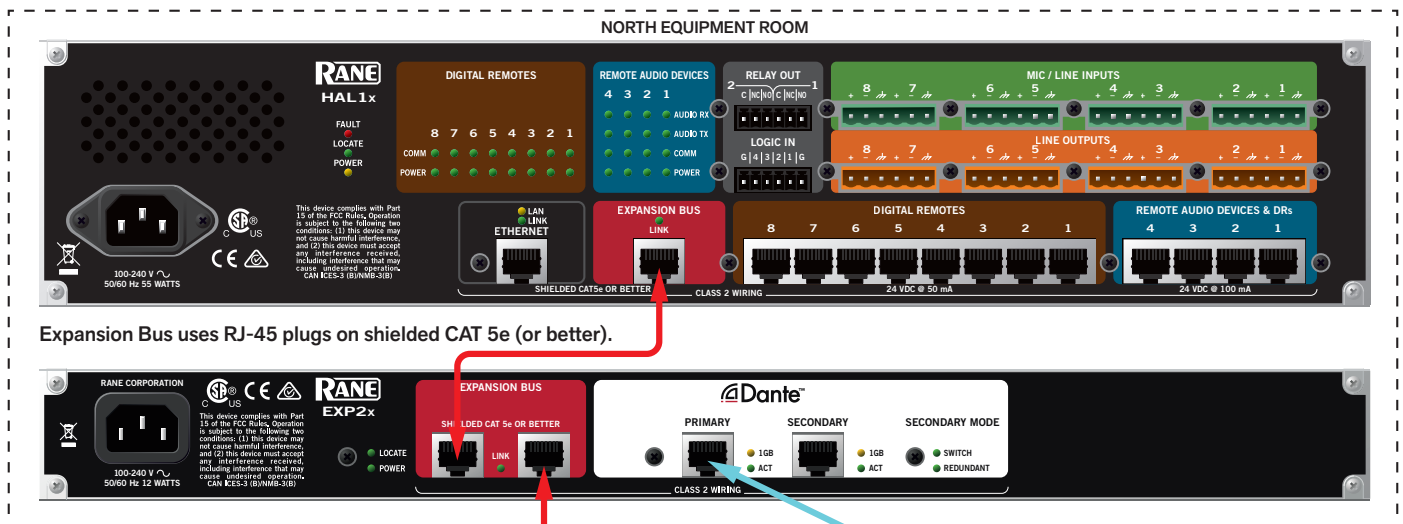
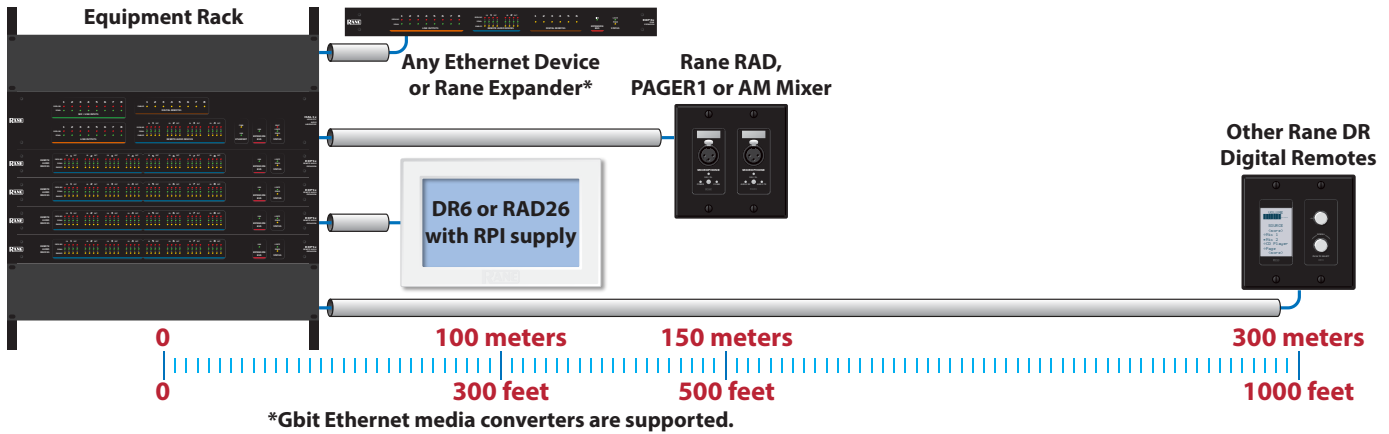
A Rane HAL system supplies DSP for distribution and sound reinforcement, while adding AEC to Dante wireless mics. This is an excellent way to add AEC to Shure's Dante products.

Example connecting 2 HAL systems through the EXP2x



EXP2x Expanders allow two independent HAL systems to share audio channels through an Ethernet switch.

Ethernet, RAD and DR Cable Lengths



Expansion Bus uses RJ-45 plugs on shielded CAT 5e (or better).

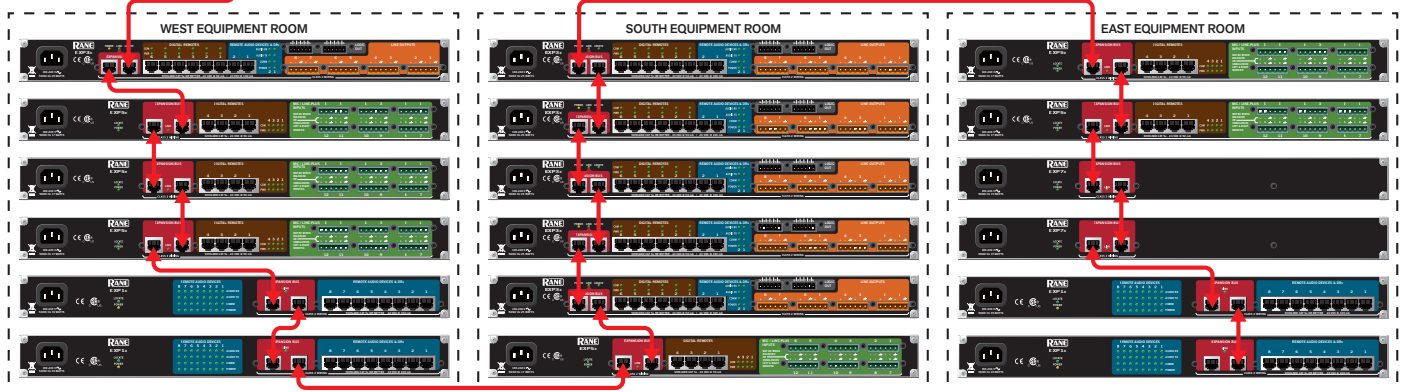
Locate the Expanders up to 100 meters (300 feet) away from each other.

For greater distance, use off-the-shelf Gigabit media converters:

- Multimode Fiber: up to 2 km (1.2 miles)
- Singlemode Fiber: up to 12 km (7.5 miles)



Shielded CAT 5e (or better) for distances < 300 feet (100 meters)

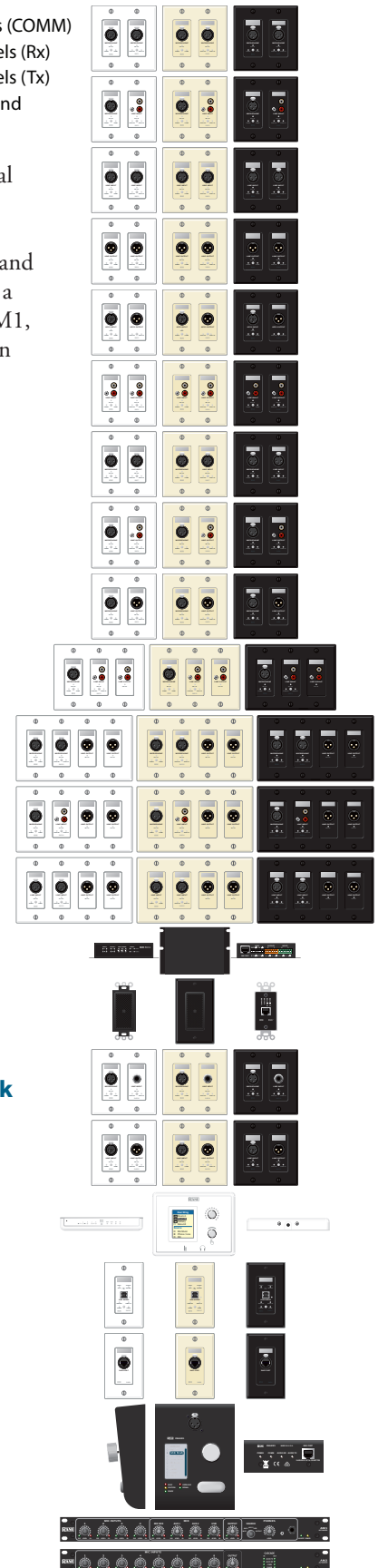


RADs

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 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 max). Light sensors dim the RAD indicators in dark rooms. Excepting the RAD16z, 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 / Euroblock**
- 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**



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 and volume, projector and screen control.
- Meeting room with A/V teleconferencing and speakers.
- Spa with BGM, local music input and stereo ceiling 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
- Source selection.

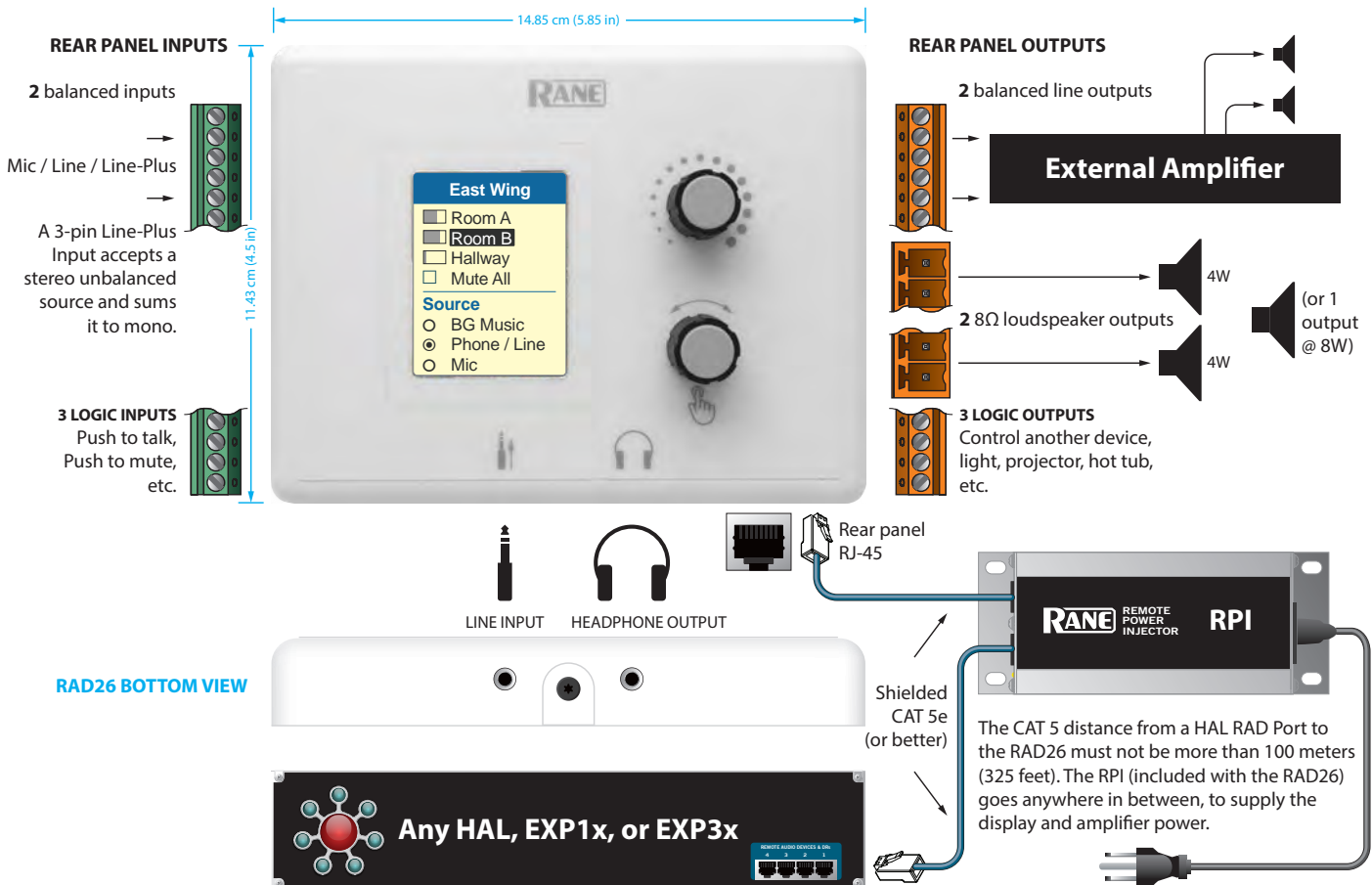
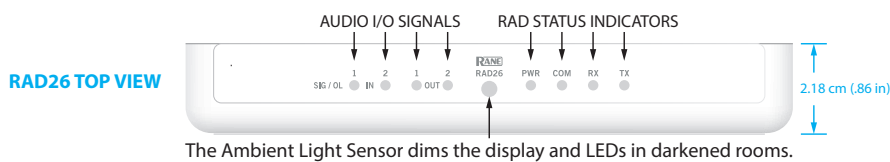
Each RAD26 may be installed onto a standard US 2-gang electrical box, 1-gang electrical box, or flush-mounted to a wall surface. The exterior finish is matte white.

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 room 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 Meeting or Classroom Application



This configuration works for presentations in both boardrooms and classrooms.

The mic connects to the rear of the RAD26. It can be from a ceiling mic, or from a handheld or lavalier wireless mic, with 24V phantom power available for condenser mics.

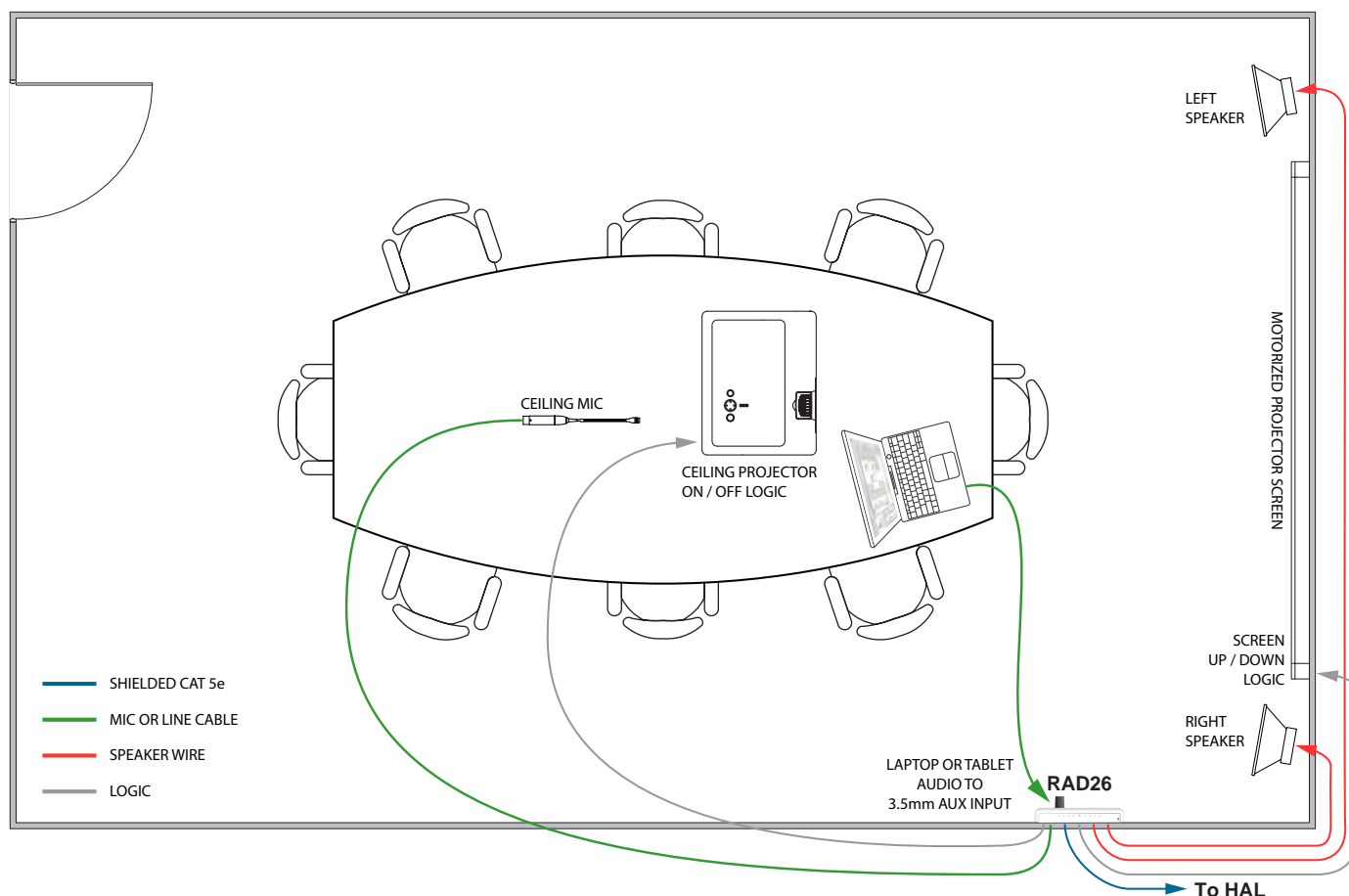
A presenter can easily plug a laptop, tablet or smartphone into the sound system. A regular consumer cable with stereo 3.5 mm line plugs will work.

When no plug is present, background music or noise masking is available, sent from a HAL multiprocessor elsewhere in the building. A RAD26 selection decides which source, and how loud.

The amplifier is set to dual 4 watt mode to drive the left and right speakers.

The logic outputs can be configured as toggle controls to move the motorized screen up and down, and turn the projector on and off.

HAL lets you page into this room, ducking the local audio, or overriding it — automatically.



RAD26 Massage Studio Application



This configuration provides a masseuse with easy and intuitive selection of either local or central background music sources and volume.

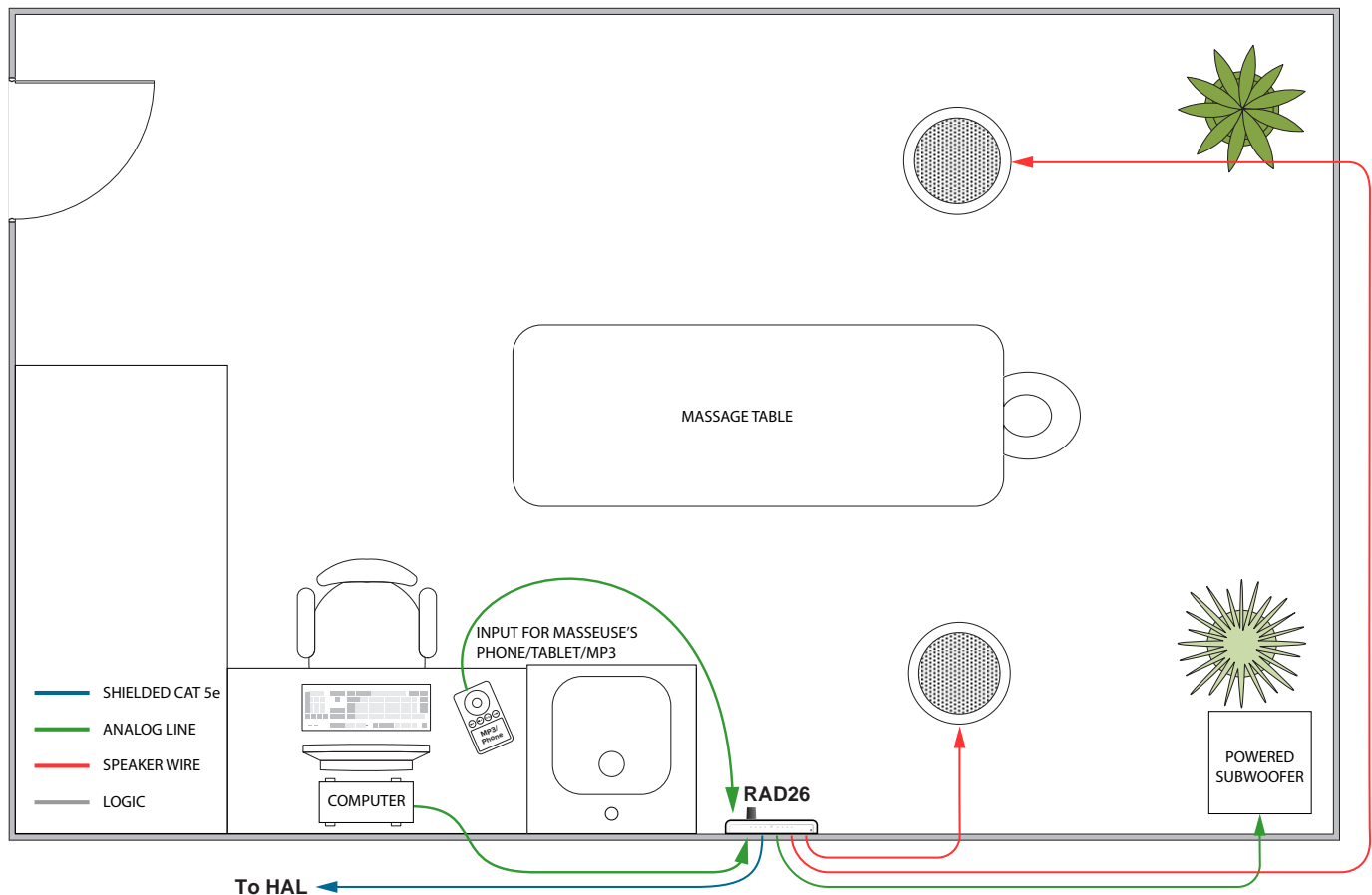
A desktop computer can supply audio to the rear of the RAD26 as a local background music source.

A masseuse can easily bring in a laptop, tablet, or smartphone connecting via a regular consumer stereo 3.5 mm cable to the AUX input. The RAD 26 can be configured so that inserting an AUX plug can override another music source.

Background music can be sent from a HAL multiprocessor elsewhere in the building. Emergency pages are always available and will override a local music selection.

The amplifier is set to dual 4 watt mode to drive the left and right speakers above the table.

You can add extra bass by connecting a line output to a powered subwoofer.



RAD26 Hotel or Cruise Ship Guest Room Application



This configuration works for private guest rooms in hotels, resorts, and cruise ships.

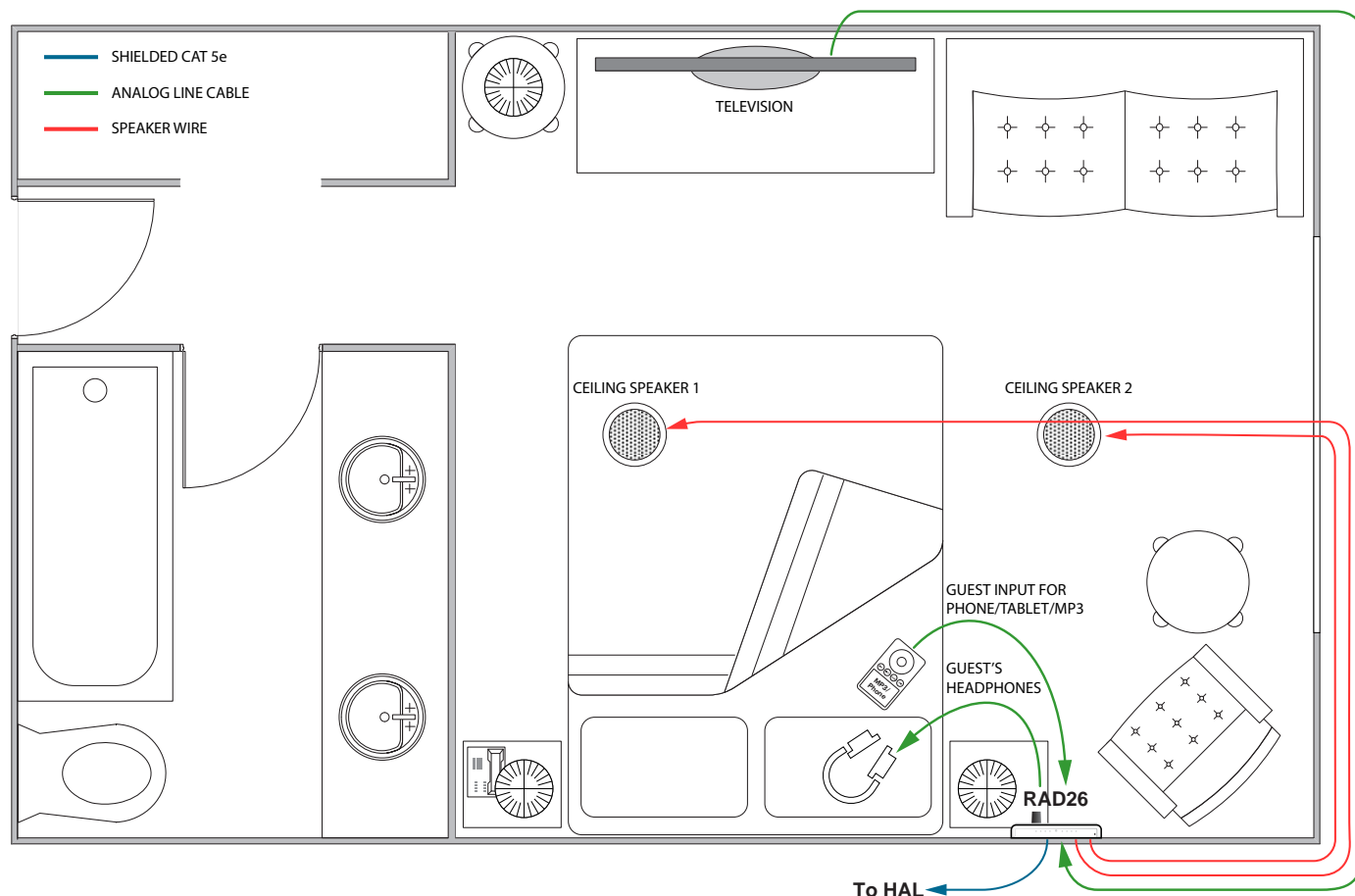
The television line output connects to the rear of the RAD26, delivering better sound than the TV speakers. In-house video can deliver shows to guests, virtually expanding theater capacity to the entire ship or resort.

A guest can easily plug a laptop, tablet or smartphone into the sound system, using a regular consumer stereo 3.5 mm line plug cable.

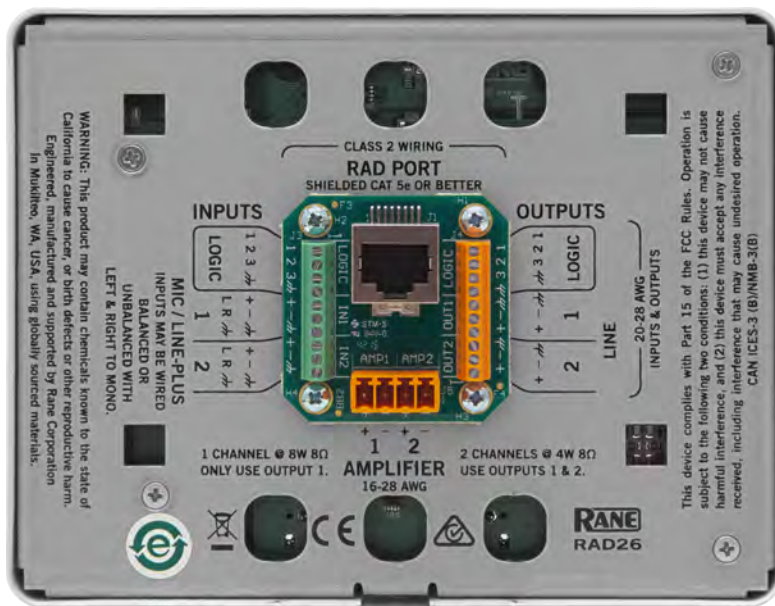
On cruise ships, important messages from the captain must be heard in the room speakers. The volume control can be set for minimum and maximum levels so that important pages aren't missed, yet the guest is given volume control.

The amp is in dual 4 W mode to drive the two ceiling speakers. Depending on source material and speaker locations, stereo TV audio can wire to the two line inputs, or as Line-Plus left and right sum to mono. If the TV is mono'ed, the other input could be a local talkback mic.

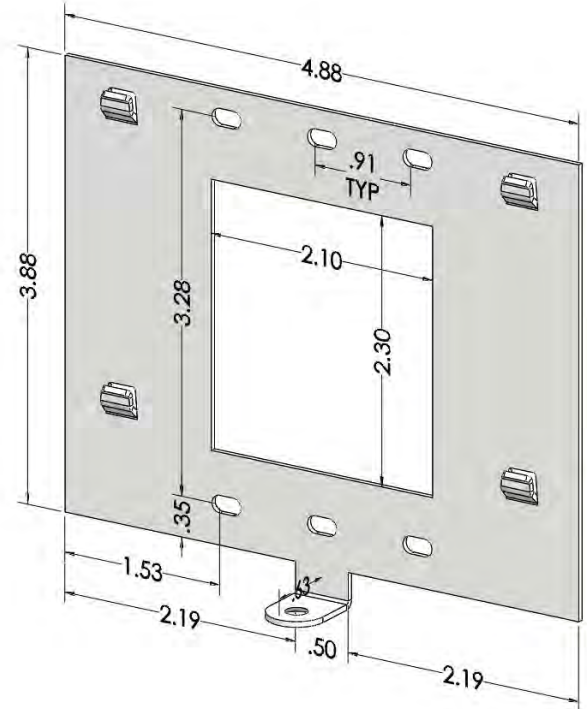
When a guest's headphones are plugged in, the room speaker amplifiers can be optionally muted for the spouse to get some sleep.



RAD26 Rear Panel (attaches to wall mount bracket)



RAD26 Rear Wall Mount Bracket (included)



Includes RPI (Remote Power Injector)

The included midspan power injector (not PoE) connects shielded CAT 5e (or better) cables between any HAL and the RAD26 to deliver communications and the extra power needed for the display and amplifiers. The RPI is inserted anywhere between the HAL and the RAD26, which can be up to 100 meters (325 feet) apart. An IEC power cable is included.



Optional RB2 Rack Mount Accessory

The RAD26 and a round 4" speaker can mount on this black-painted 3U steel panel in a 19" rack.



RAD26 Applications

Hotels with small meeting rooms and spa rooms require local inputs and control, but must also receive paging or music from elsewhere in the building. Many offices and campuses provide meeting and conference rooms for small groups with in-room A/V presentations, but must also receive emergency announcements. Other RADs and DRs can provide these functions, but require more than one CAT 5 cable. The RAD26 provides all the features required in a single RAD.

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.

The **DR1** supports Level Control.

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

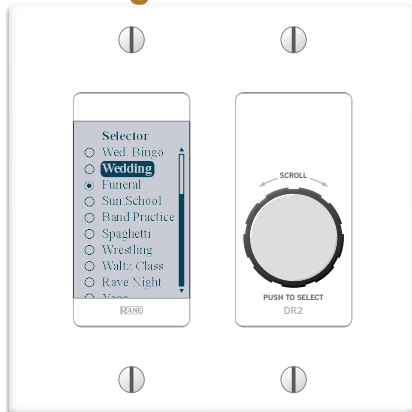
The **DR3** has three behaviors: Single Level & List of Toggles/Commands, List of Levels for either multizone volume control and/or input source mixing, and Single Level plus Selector.

DR1 Digital Volume Remote

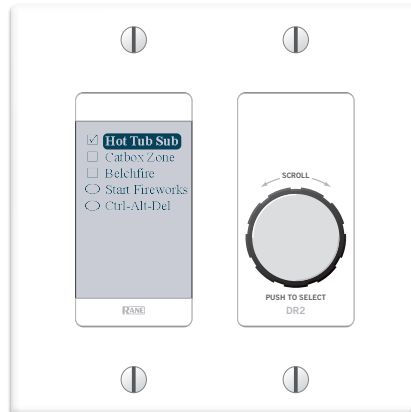


Level Control

DR2 Digital Selection Remote



Single Selector

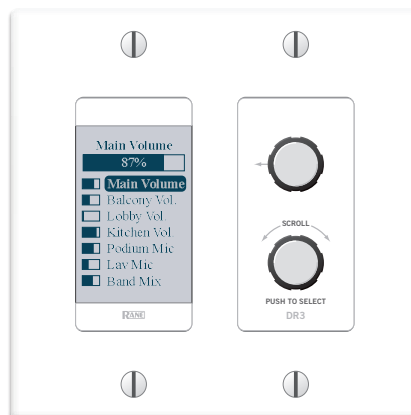


List of Toggles / Commands

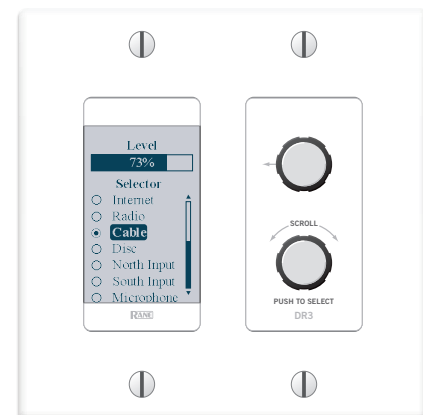
DR3 Digital Volume and Selection Remote



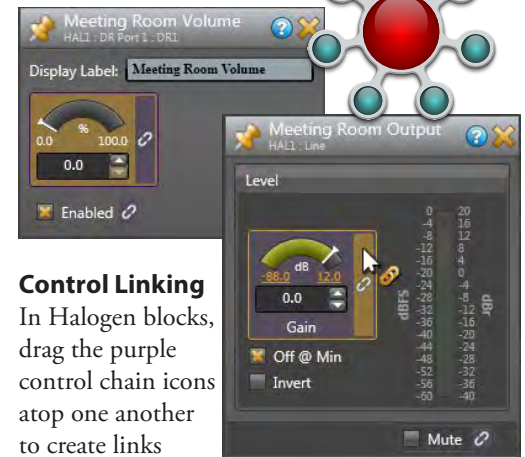
Single Level & List of Toggles / Commands



List of Levels



Single Level & Selector



Control Linking

In Halogen blocks, drag the purple control chain icons atop one another to create links between Levels,

Toggles, Selectors, Commands, Digital Remotes, Web Controls and/or 3rd-party controls. The above 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 controls, contact closures and IR remote wall sensors by adding a DR4 Logic I/O Expander.

DR6 Touchscreen Remote Control

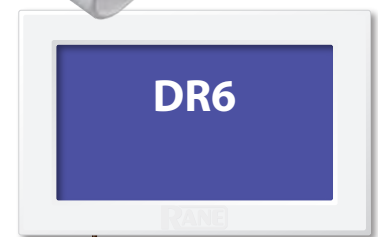
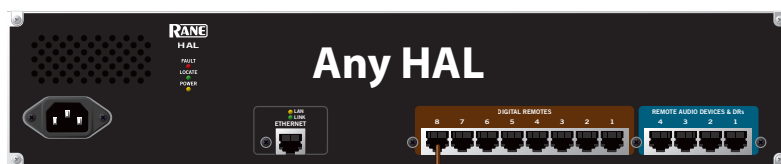
The new DR6 is a fully customizable touchscreen remote for the HAL family. It supports multiple pages or tabs and any set of levels, toggles, selectors and/or commands. Drag, drop and resize controls any way that's desired. Use custom background images and logos in full-color on the 7-inch LCD display.

Screw the included wall-mount bracket over U.S. or international electrical boxes, or flush mount the $\frac{3}{4}$ " 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 RB1 rack bracket installs the DR6 in a 19" equipment rack.

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 5.0 allows you to create one set of pages and use them in a web control design, DR6 display or both.



From HAL to DR6
100 meters (325 feet) max

Shielded CAT 5e or better
data to and from the rack.

Shielded CAT 5e or better
data and power to and from the remote.

The RPI can go anywhere in between.



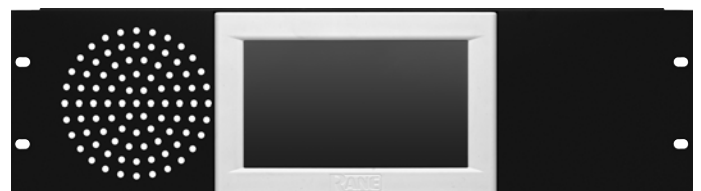
DS1 Desk Stand Accessory

- All steel, painted white.
- Kensington security hole.
- Rubber bottom protects the desktop.
- Holes in the bottom to fasten to a desktop.
- Hole in the bottom to thread CAT 5 cable through the desktop.



Optional RB2 Rack Mount Accessory

The RAD26 and a round 4" speaker can mount on this black-painted 3U steel panel in a 19" rack.





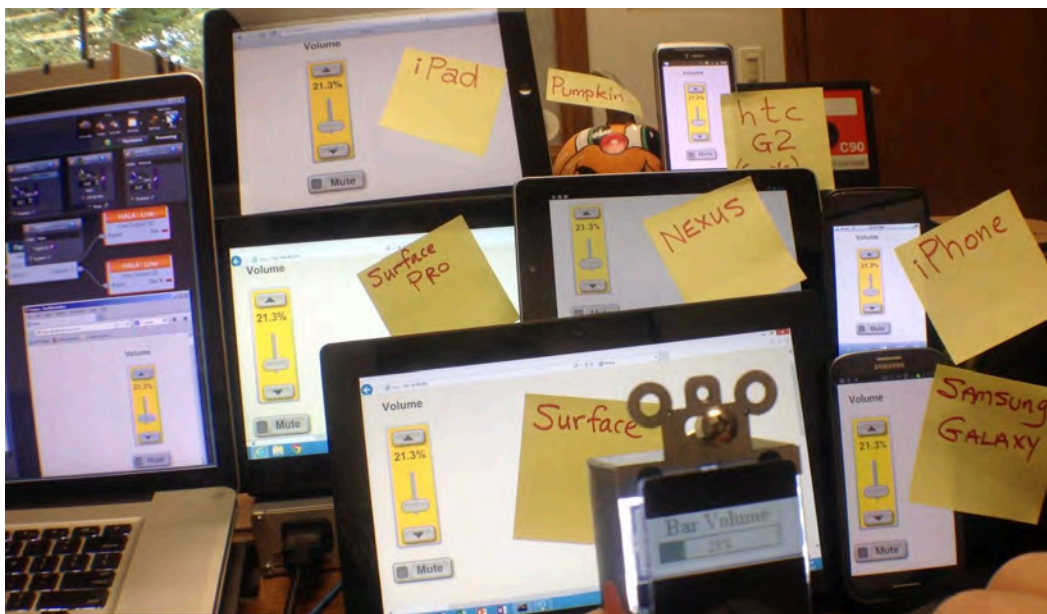
Rane's Web Controls

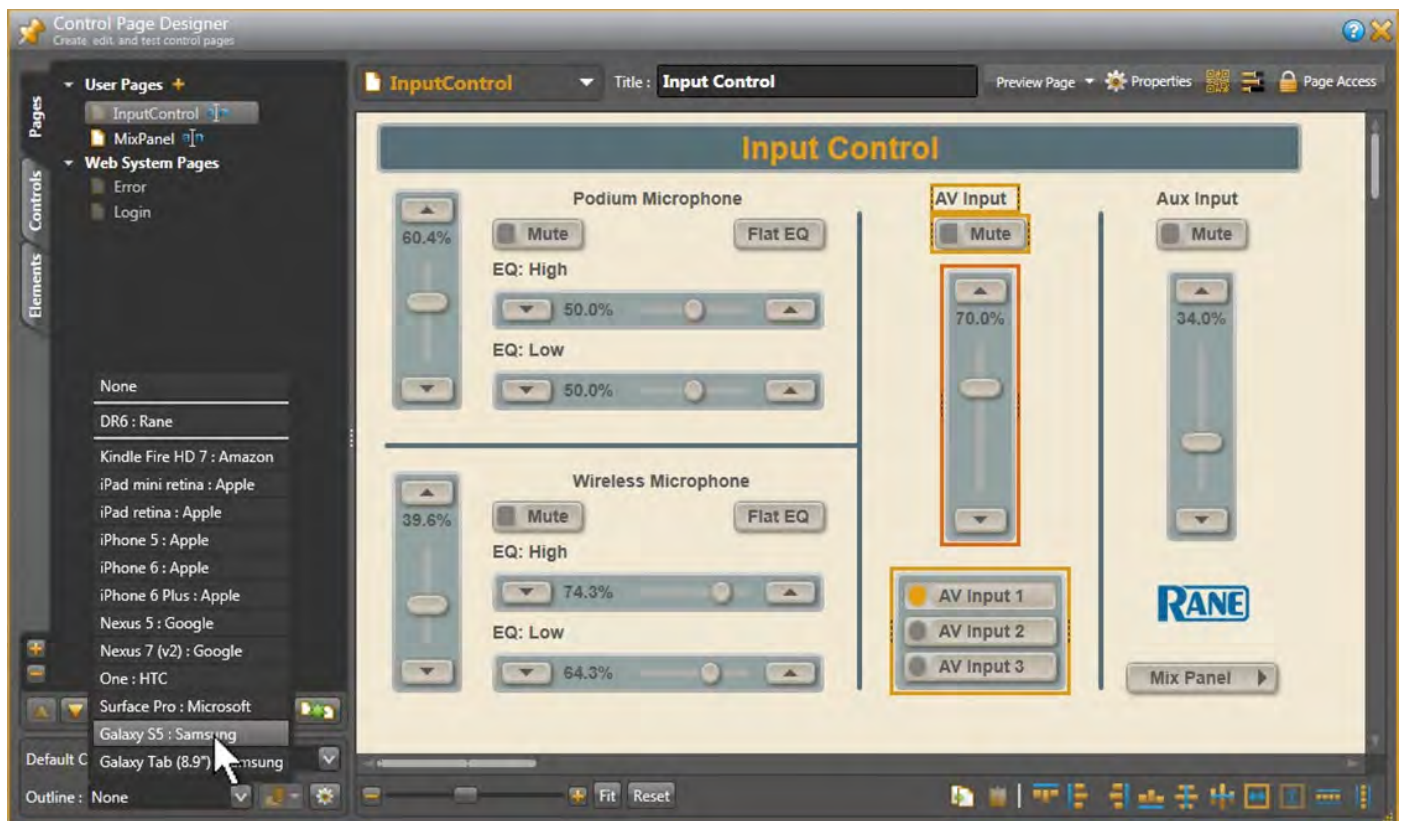
Web Control lets end users control any HAL DSP System from any smart phone, tablet or computer. Create custom HTML GUI control screens within Halogen: Define the quantity of control pages, the layout, labeling and size of each control, and completely test them using your default web browser.

Access any control page from any browser-enabled device on the network with a HAL device. Open a browser and type in the customizable IP/webpage address for the HTML page – and bookmark it for easy access. Or, don't type anything - instead, generate a QR Code in Halogen. Print it so end users can scan it with their smart phone or tablet to open the page. Type in the (optional) user Access code, and voilà, the trick, she is done! There are no apps to update or maintain on client devices.

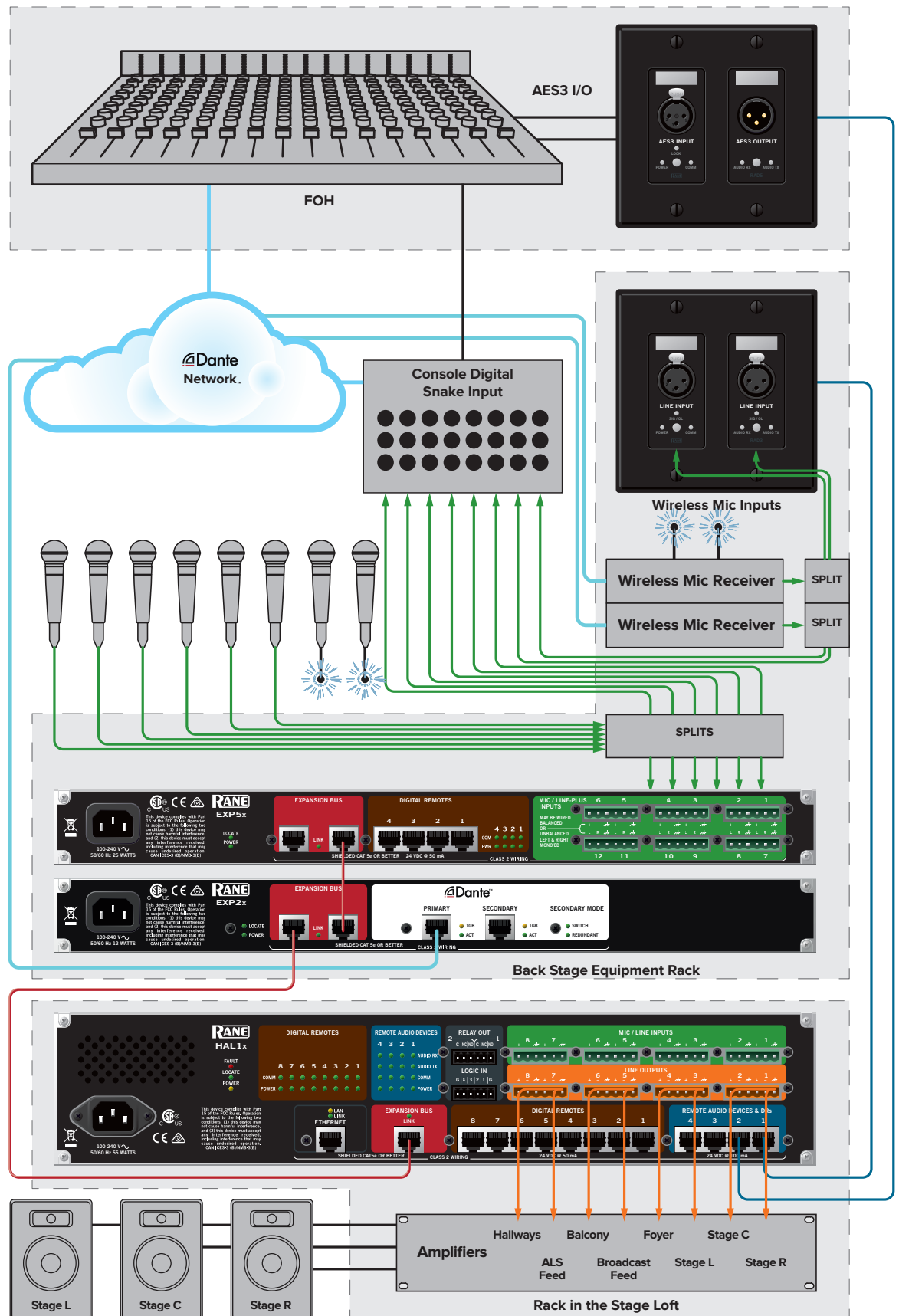
Control your HAL system wirelessly from one or more tablets, smart phones, laptops or desktop computers - they'll all track each other. The HAL web server is multi-client, allowing control across many devices and many rooms. You can link Rane's wired DR remote controls (DR1, DR2, DR3 & DR6) and wireless devices and they'll automatically track each other. They'll even automatically track with changes to or from your Crestron or AMX panel.

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 iTunes store or app installs required. We'll save a lot of space on this page by not listing all the possible devices that support web browsers and wireless Ethernet. Besides, the list will update before we know it.

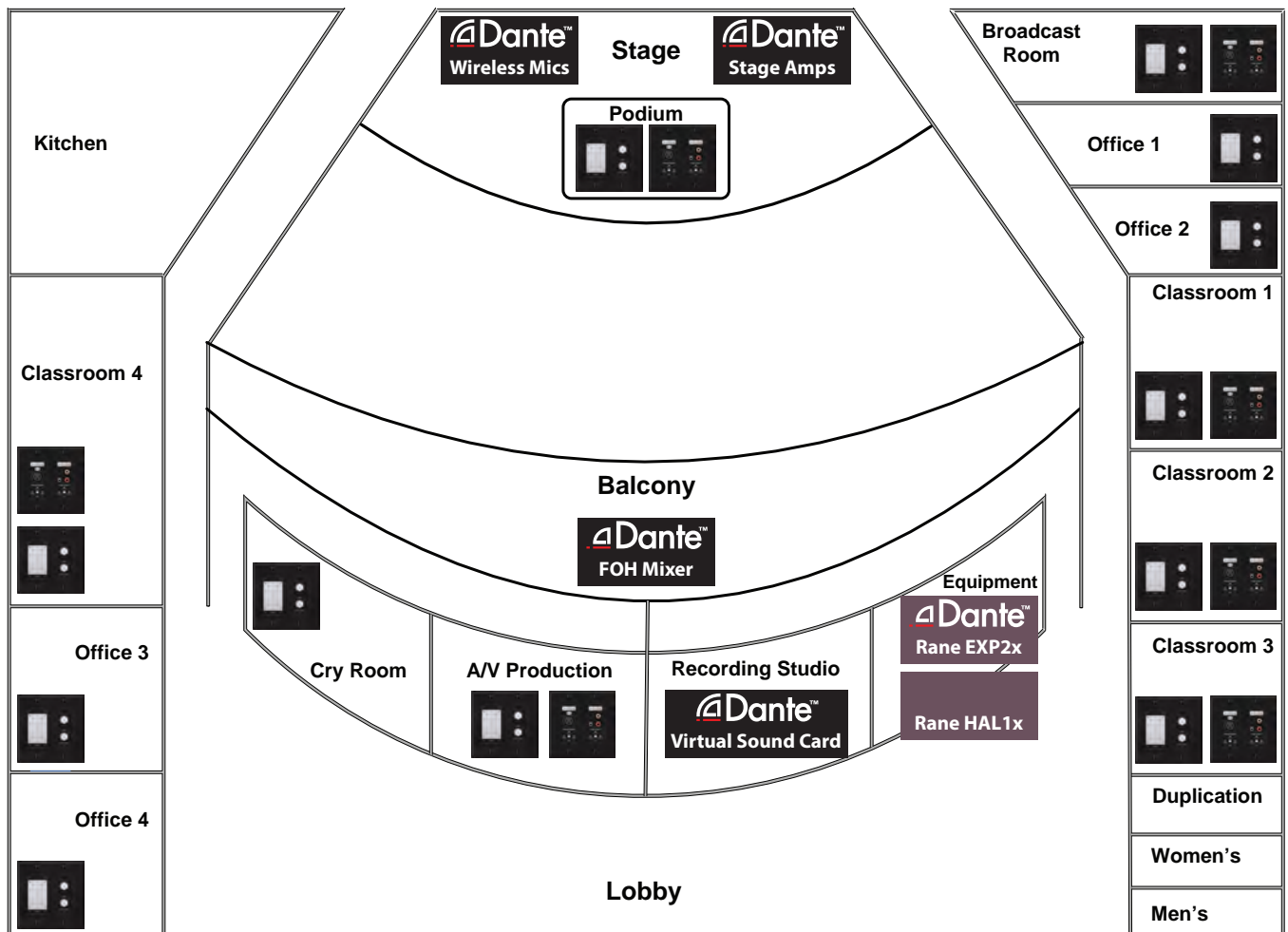
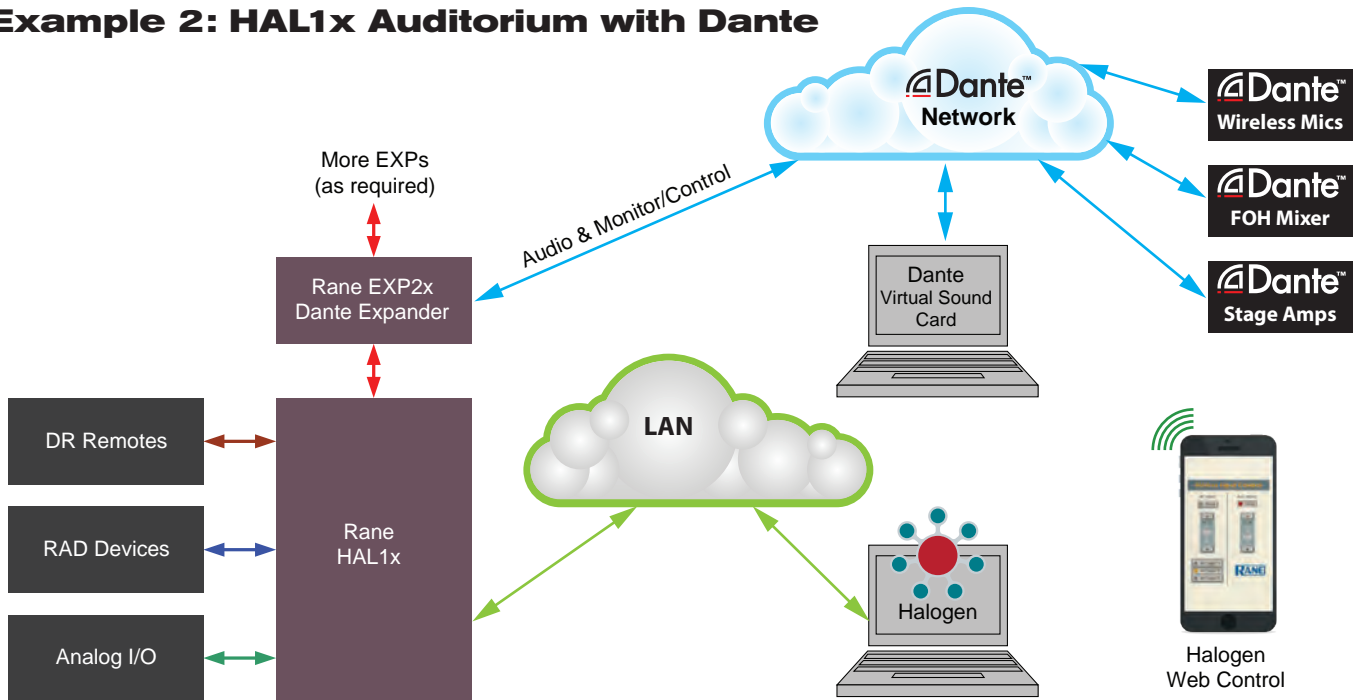




Example 1: HAL1x Theater with Dante



Example 2: HAL1x Auditorium with Dante



rane.com/hal

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