



# RAD16Z

## 2-Channel Input and Output for Halogen DSP

The RAD16z is an alternative to standard switch boxes for impractical areas such as stage floor pockets or above ceilings thanks to a compact rugged all-metal form factor with flexible surface mounting options. The RAD16z is plenum-rated UL 2043. It contains two balanced Mic / Line / Line-Plus inputs and two balanced line outputs on Euroblock connectors.

Line-Plus allows an unbalanced stereo source to connect to a single balanced input and be mono'ed. Inputs are individually software switchable to Mic, Line or Line-Plus. The Halogen software can enable 24V phantom power for a condenser mic on either input. LEDs indicate input mode, Input and Output level, as well as RAD connectivity to the HAL.

Two Logic Inputs and Outputs interface other devices to HAL with toggles or commands including push-to-talk or mute switches, projectors, lights, alarms and more. Logic In connects a device contact switch between pin 1 or 2 to ground. Logic Outs are 5V high or 0V low. Galvanic isolation prevents current flow between the RAD and host technical grounds from interfering with audio signals. The Euro connections accept wire between 30 and 14 AWG.

### Features

- Plenum-rated 2-ch I/O box with logic, single shielded CAT5e or better for up to 500 feet maximum distance
- Alternative to standard switch boxes for impractical areas such as floor pockets or above ceilings
- 2 balanced Mic / Line / Line-Plus inputs and 2 balanced line outputs on Euroblock connectors
- 2 Logic Inputs and Outputs interface other devices to HAL with toggles or commands, such as push-to-talk or mute switches, projectors, lights, alarms, etc.
- Power on/off transient suppression
- 500V galvanic isolation

Digital Codec		24-bit, 48kHz		
Inputs	Microphone (level set in software)	Connectors	1	Euroblock, 6 pins, 3.81 mm pitch, green
		Impedance	2.16 k $\Omega$	1%, balanced, 1.08 k $\Omega$ + 1.08 k $\Omega$
		Gain Range (dynamic)	+26 to +46 dB	Typical, 1 dB steps
		Gain Range (condenser)	+14 to +34 dB	Typical, 1 dB steps
		Maximum Input (dynamic)	-16 dBu	Minimum, balanced, gain = 26 dB
		Maximum Input (condenser)	-4 dBu	Minimum, balanced, gain = 14 dB
		Equivalent Input Noise	-121 dBu	Typical, 20 kHz BW, R <sub>S</sub> = 150 $\Omega$ , 26 dB gain
		CMRR	-70 dB	Typical, R <sub>S</sub> = 150 $\Omega$ , 1 kHz, 26 dB gain
		Frequency Response	20 Hz - 20 kHz	Typical, +0.0/-0.5 dB, at all gain settings
		THD+N	< 0.010%	Typical, @ 1 kHz, 20 kHz BW, R <sub>S</sub> = 150 $\Omega$ , -6 dBFS output, 26 dB gain
	Phantom Power	+24V	2%, 10 mA maximum	
	Line/ Line+ (balanced)	Impedance	10 k $\Omega$	1%, balanced
		Gain Range	0-20 dB	Typical
		Maximum Input (Line Mode)	14 dBu	Minimum, < 1% THD
		Maximum Input (Line+ Mode)	14 dBu	Typical, @ 1 kHz, active, left [+] & right [-] signals summed to mono
		Dynamic Range	103 dB	Typical, 0 dBFS, 20 kHz BW, A-weighted, unity gain
		CMRR	-50 dB	Typical, R <sub>S</sub> = 150 $\Omega$ , 1 kHz
Outputs		Connectors	1	Euroblock, 6 pins, 3.81 mm pitch, orange
		Impedance	200 $\Omega$	1%, each leg
		Maximum Output	14 dBu	Minimum, < 1% THD, 10 k $\Omega$ load
		Dynamic Range	106 dB	Typical, 0 dBFS, 20 kHz BW, A-weighted
		Frequency Response	20 Hz - 20 kHz	Typical, +0.0/-0.5 dB
		THD+N	0.008%	Typical, @ 1 kHz, 20 kHz BW, -6 dBFS output, RAD16z input to output
Indicators		Signal	-50 dBFS	Unbalanced/balanced output, green LED, peak-reading
		Overload	-0.5 dBFS	Unbalanced/balanced output, red LED, peak-reading
RAD Port		Connectors	1	RJ-45
		Cable Length	500 ft. / 152 m	Shielded Cat5e cable or better; must be shielded
Logic	Inputs	Connectors	1 (shared)	Euroblock, 6 pins, 3.81 mm pitch, black, contact closure to ground
		Internal Pull-Up	51.1 k $\Omega$ , 5.0V	Protected to +24V
		High-Input Level	> 2.0V	Minimum, normal state
		Low-Input Level	< 0.9V	Maximum, external circuit must sink > 80 $\mu$ A to assert
	Outputs	Connectors	1 (shared)	Euroblock, 6 pins, 3.81 mm pitch, black, relay drive, LED or logic level output
		Internal Pull-Up	1.0 k $\Omega$ , 5.0V	Protected to +30V, reverse-polarity-protected
		Sink Current	200 mA	Maximum, output FET on
		LED Drive Current	2 mA	Output FET off, driving an LED with V <sub>f</sub> = 2.0V
		High-Output Level	4.7V	Minimum, output FET off, 0 mA output current
		Low-Output Level	0.1V	Maximum, output FET on, < 200 mA sink current
Dimensions		Width x depth x height	4.92" x 3.31" x 1.05"	12.5 x 8.4 x 2.7 cm
Weight			11.9 oz.	337 g