RAD16z

Manual Version v1.0

Introduction & Support

Thanks for purchasing the **Rane RAD16z**. It's a finely crafted interface for the HAL system, converting analog audio to and/or from 24-bit, 48 kHz digital audio. RAD16z is an alternative to standard switch boxes for impractical areas such as stage floor pockets or above ceilings. The operating manual and all related software documentation can be found at **rane.com/hal**

For system applications, design examples and related HAL information, please see the **HAL Notes** library at **rane.com/library**

If you need additional assistance, please contact our HAL technical agents at **halogen@rane.com**

For additional product support, visit **rane.com/support**

Panels (Front & Rear)

Technical Specifications

Digital Codec		24-bit, 48 kHz	
Inputs	**Connectors**	1	Euroblock, 6 pins, 3.81 mm pitch, green
Microphone (level set in software)	**Impedance**	2.16 kΩ	1%, balanced, 1.08 kΩ + 1.08 kΩ
	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, RS = 150 Ω, 26 dB gain
	CMRR	-70 dB	Typical, RS = 150 Ω, 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, Rs = 150 Ω, -6 dBFS output, 26 dB gain
	Phantom Power	+24 V	2%, 10 mA maximum
Line/Line+ (balanced)	**Impedance**	10 kΩ	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, Rs = 150 Ω, 1 kHz
	Frequency Response	20 Hz – 20 kHz	Typical, +0.0/-0.5 dB

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Outputs	**Connectors**	1	Euroblock, 6 pins, 3.81 mm pitch, orange
	Impedance	200 Ω	1%, each leg
	Maximum Output	14 dBu	Minimum, < 1% THD, 10 kΩ 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 Cat 5e 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 kΩ, 5.0 V	Protected to +24 V
	High-Input Level	> 2.0 V	Minimum, normal state
	Low-Input Level	< 0.9 V	Maximum, external circuit must sink > 80 µA 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 kΩ, 5.0 V	Protected to +30 V, reverse-polarity-protected
	Sink Current	200 mA	Maximum, output FET on
	LED Drive Current	2 mA	Output FET off, driving an LED with Vf = 2.0 V
	High-Output Level	4.7 V	Minimum, output FET off, 0 mA output current
	Low-Output Level	0.1 V	Maximum, output FET on, < 200 mA sink current
Dimensions		4.92” x 3.31” x 1.05” 12.5 x 8.4 x 2.7 cm	Width x depth x height
Weight		11.9 oz. 337 g	