

1U Rackmounts



R3 Series Programmable RF Attenuators

4 to 20-Channels, 95dB, 8GHz, 0.25dB Step size, USB/Ethernet Programmable, Power Over Ethernet

Specifications

Attenuation Step Size (dB)	0.25							
Number of individually controlled RF chains	4, 8, 12, 16, or 20							
Enclosure	1U Rackmount							
Operating Frequency (MHz)	50 – 8,000							
Attenuation Range (dB)	0 - 95							
Input 0.1dB Compression Power (dBm)	34							
Impedance (Ω)	50							
IP3 Input (dBm) ¹	+58							
Attenuation Accuracy (dB)	Frequency	Conditions	Typical	Max				
					50 – 2000 MHz	0.25 – 20	± 0.25	$\pm (5.5\% \text{ of Atten.} + 0.25)$
						20.25 – 60	± 0.50	$\pm (2.0\% \text{ of Atten.} + 0.90)$
	60.25 – 90	± 0.75	$\pm (3.5\% \text{ of Atten.} + 0.70)$					
	2000 – 4000 MHz	0.25 – 20	± 0.20	$\pm (5.5\% \text{ of Atten.} + 0.25)$				
		20.25 – 60	± 0.30	$\pm (2.0\% \text{ of Atten.} + 0.70)$				
		60.25 – 90	± 0.40	$\pm (3.0\% \text{ of Atten.} + 0.90)$				
	4000 – 6000 MHz	0.25 – 20	± 0.15	$\pm (6.5\% \text{ of Atten.} + 0.15)$				
		20.25 – 60	± 0.35	$\pm (3.5\% \text{ of Atten.} + 0.45)$				
		60.25 – 90	± 0.65	$\pm (3.5\% \text{ of Atten.} + 0.90)$				
	6000 – 8000 MHz	0.25 – 20	± 0.20	$\pm (6.5\% \text{ of Atten.} + 0.45)$				
		20.25 – 60	± 0.40	$\pm (6.7\% \text{ of Atten.} + 0.55)$				
	60.25 – 90	± 0.70	$\pm (7.0\% \text{ of Atten.} + 0.90)$					
Dwell Time per Channel (ms) ²	1							
Min. Dwell Time for all Channels (ms) ³	2							
Attenuation Transition Time (ns) ⁴	425							
VSWR	< 2.0 : 1 (all states)							
Input RF Power	+28 dBm operating +33 dBm absolute max							
Power Source ⁵	AC/DC Adapter (5V / 3A) <i>See note 5 below</i> Power Over Ethernet (POE)							
Power Use (A)	Up to 0.5							
Power Over Ethernet (POE)	IEEE802.3at Class 2 compliant							
Operating Temperature ($^{\circ}\text{C}$)	0 to 40							
Communication ⁶	USB (Hybrid Serial COM Port and HID) Ethernet (Telnet, HTTP, HTTP Web GUI, DHCP & Static IP)							
Interchain Isolation (Chain-to-chain isolation)(dB)	>130							
External Isolation (dB)	>130							
Insertion Loss (dB)		Typical	Max					
	50 MHz	5.6	6.4					
	2400 MHz	6.7	7.5					
	6000 MHz	9.1	9.5					
	8000 MHz	10.9	12.0					

^A Exceeding absolute maximum ratings may cause permanent damage. Operation should be restricted to the limits in the Operating Ranges table.

Operation between operating range maximum and absolute maximum for extended periods may reduce reliability.

^B Attenuator RF ports are interchangeable bidirectional signal transmission.

¹ Tested with 10 kHz span between signals.

² Dwell Time per Channel is the time it will take an individual attenuator channel to transition to a new attenuation state (without PC communication delays).

³ Minimum Dwell Time for All Channels is the time it takes all channels to transition to a new attenuation state (without PC communication delays).

⁴ Attenuation Transition Time is the time it takes an attenuator to reach a new attenuation state.

⁵ AC/DC input is included for configurations with 10 or more channels. 8 or fewer channels are powered by solely USB or POE.

⁶ USB support for simultaneous HID and Serial connections.

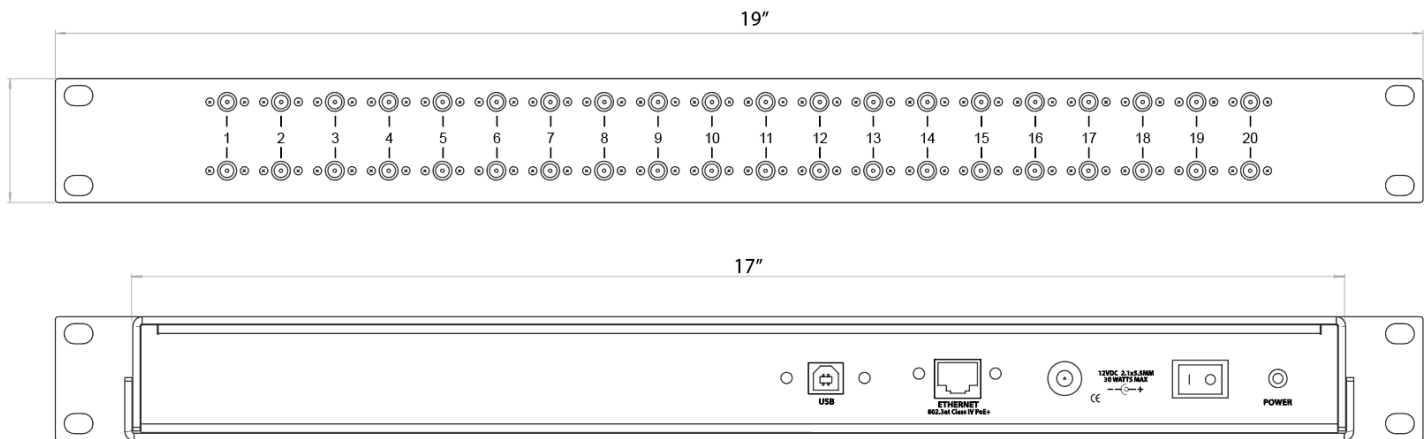
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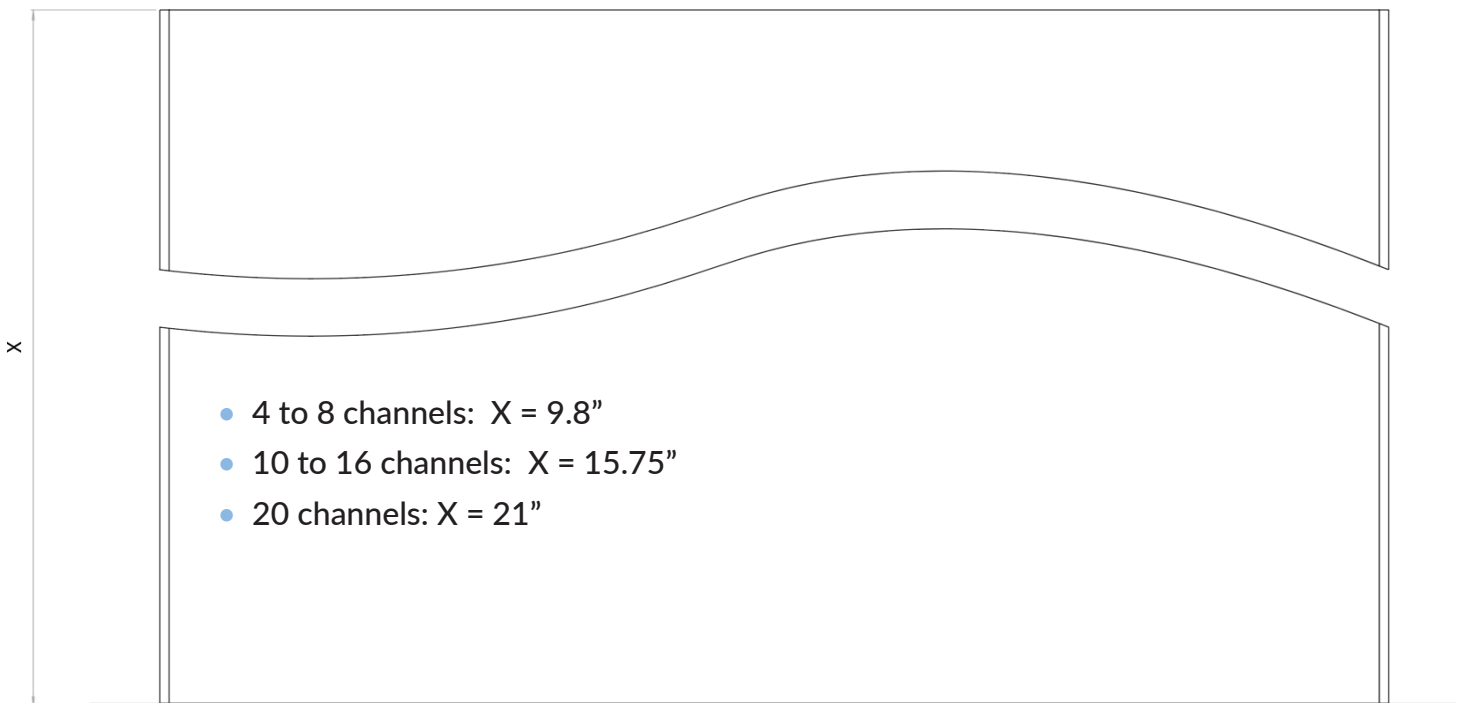
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Drawing



Enclosure Rear



Enclosure Front

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Configurations

Model format: AD-USBXXAR3YGZZ-1U-CR

XX = Number of channels (Options: 4 to 20)

Y = Frequency range (Options: 6, 8) Note: 6 = 5-6,000MHz and 8 = 50-8,000MHz

ZZ = Dynamic attenuation range in dB (Options: 31.5, 63, 95)

CR = *Optional configuration*, use for RF connectors to be placed on rear of enclosure and Communication connectors on the front of enclosure. Default: RF connectors on front.

Example 1: AD-USB16AR38G95-1U-CR

16-Channel, 50-8,000MHz, 0-95dB, SMA-F connectors on rear of enclosure

Example 2: AD-USB20AR36G95-1U

20-Channels, 5-6,000MHz, 0-95dB, SMA-F connectors on front of enclosure.