

AD-USB2AR38G95



USB/Ethernet Programmable RF Attenuator

95dB, 8Ghz, 0.25dB Step size

Key Features

- 2 RF channels in single enclosure
- Dynamic range of 95dB
- Attenuation resolution of 0.25dB
- Frequency range of 50 - 8000Mhz
- USB powered & controlled
- Ethernet for Telnet and HTTP control
- Power Over Ethernet (POE)
- Easy USB control via VCP & HID
- Very compact size
(130 x 89.30 x 23.70) mm



Ideal for

- 6Ghz WiFi 6E
- Cellular (3G, 4G, LTE, & more)
- IoT
- MIMO
- Engineering Development and Automated Manufacturing Test

Included Accessories

- USB flash drive containing software, drivers, manuals, and sample scripts/programs
- 5 ft. USB type A to type B cable
- 5 ft. CAT5E Ethernet cable

Overview

The AD-USB2AR38G95 is Adaura Technologies' latest design in the AD-USB series of programmable RF attenuators. Combining all the best features of the previous models, the R3 is the new series flag ship. With a completely custom machined aluminum enclosure, the AD-USB2AR38G95 boasts 95dB of attenuation with over 120dB of interchain isolation. The addition of Ethernet allows EASY implementation into the most modern of test setups by allowing network control via HTTP web interface or direct Telnet while the USB port powers the device and allows for serial communication.

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Specifications

Attenuation Step Size (dB)	0.25				
Number of individually controlled RF chains	2				
Operating Frequency (Mhz)	50 - 8,000				
Attenuation Range (dB)	0 - 95				
Input 0.1dB Compression Power (dBm)	31				
Impedance (Ω)	50				
Attenuation Accuracy (dB)	50 - 2000 Mhz	Frequency	Conditions	Typical	Max
			0.25 - 20	± 0.25	$\pm (5.5\% \text{ of Atten.} + 0.25)$
			20.25 - 60	± 0.50	$\pm (2.0\% \text{ of Atten.} + 0.90)$
	2000 - 4000 Mhz		60.25 - 90	± 0.75	$\pm (3.5\% \text{ of Atten.} + 0.70)$
			0.25 - 20	± 0.20	$\pm (5.5\% \text{ of Atten.} + 0.25)$
			20.25 - 60	± 0.30	$\pm (2.0\% \text{ of Atten.} + 0.70)$
	4000 - 6000 Mhz		60.25 - 90	± 0.40	$\pm (3.0\% \text{ of Atten.} + 0.90)$
			0.25 - 20	± 0.15	$\pm (6.5\% \text{ of Atten.} + 0.15)$
			20.25 - 60	± 0.35	$\pm (3.5\% \text{ of Atten.} + 0.45)$
	6000 - 8000 Mhz		60.25 - 90	± 0.65	$\pm (3.5\% \text{ of Atten.} + 0.90)$
			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 (μsec) ²	72				
Min. Dwell Time for all Channels (μsec) ³	288				
Attenuation Transition Time (ns) ⁴	568				
VSWR	50 - 2000 Mhz	1.15	:1		
	2000 - 4000 Mhz	1.20			
	4000 - 6000 Mhz	1.25			
	6000 - 7200 Mhz	1.50			
	7200 - 8000 Mhz	1.80			
Max Input RF Power (dBm)	+28				
Power Use (mA)	91				
Power Over Ethernet ⁵	IEEE802.3at Class 2 compliant				
Operating Temperature ($^{\circ}\text{C}$)	0 to 60				
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)	>115				
External Isolation (dB)	>120				
Insertion Loss (dB)		Typical	Max		
	50 Mhz	4.2	5.0		
	2400 Mhz	5.5	6.3		
	6000 Mhz	8.2	9.0		
	8000 Mhz	9.7	10.8		

^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 1 MHz 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 Power Over Ethernet (POE) available by optional configuration.

⁶ USB support for simultaneous HID and Serial connections.

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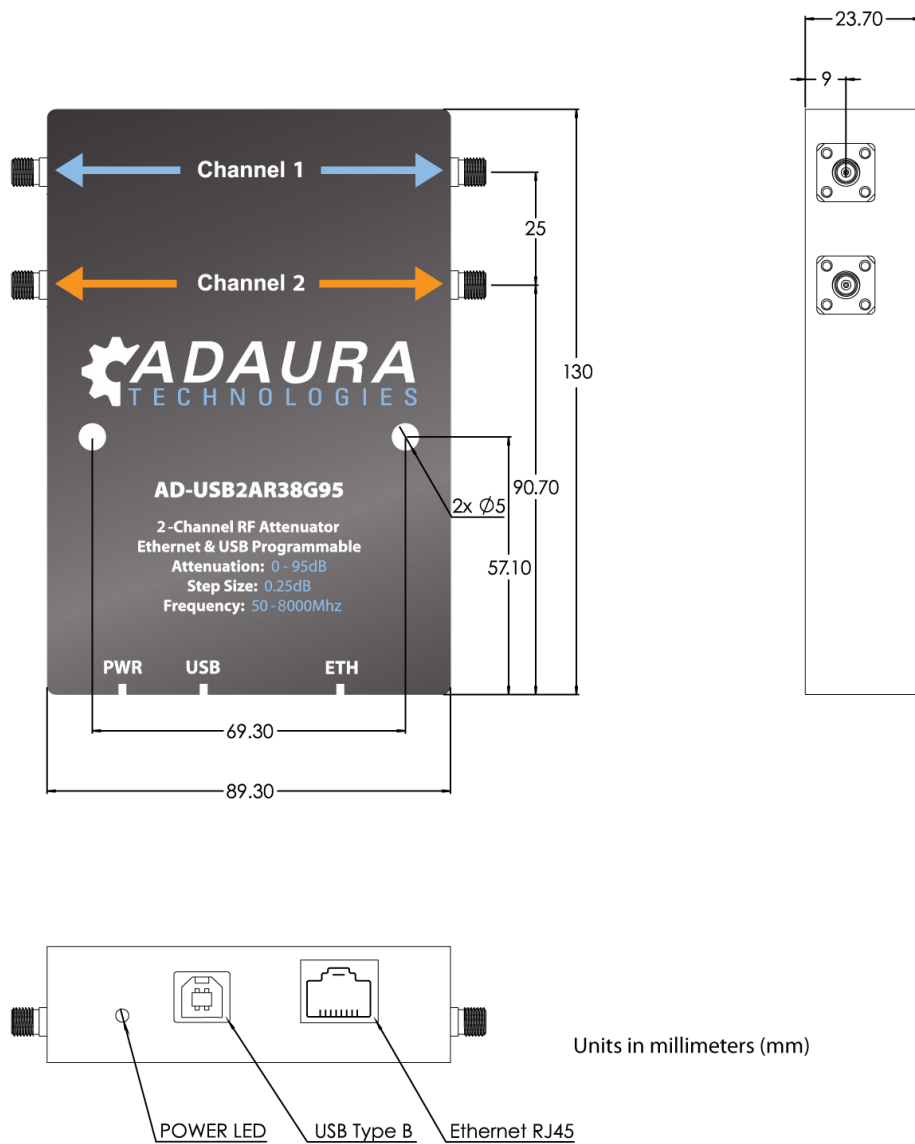


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Drawing



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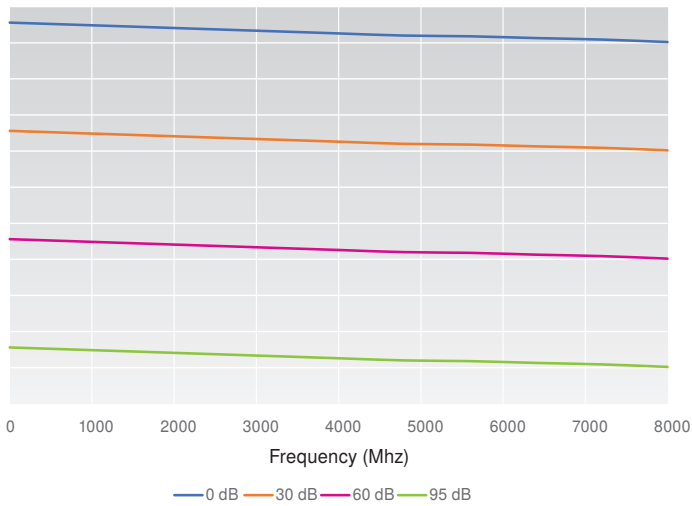
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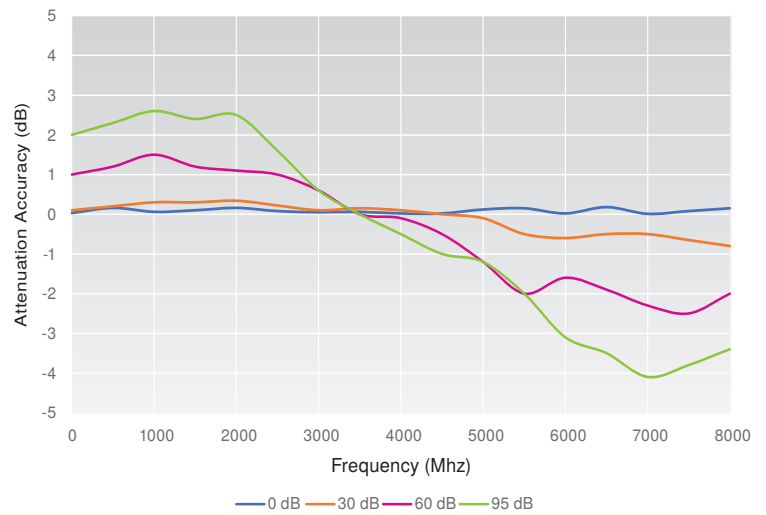


Performance

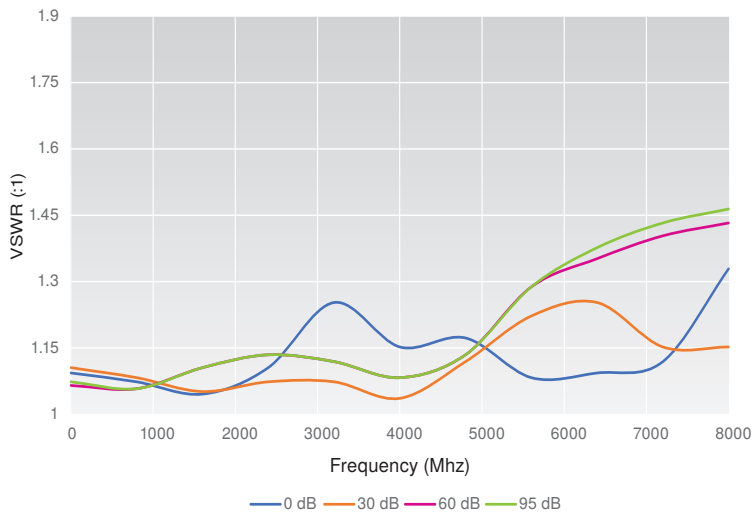
Attenuation



Attenuation Accuracy



Input VSWR



Output VSWR

