

# AD-USB4AR48G120



## USB/Ethernet Programmable RF Attenuator

120dB, 0.1-8GHz, 0.05dB Step size, Power Over Ethernet (POE), 4 Independent Channels

### Key Features

- 4 individual RF channels in single enclosure
- Dynamic range of 120dB
- Very fine attenuation resolution of 0.05dB
- Frequency range of 100 - 8000MHz
- USB powered & controlled
- Ethernet for Telnet and HTTP control
- Power Over Ethernet (POE)
- Easy USB control via COM and HID
- Very compact size  
(296.20 x 89.30 x 23.70) mm



### Ideal for

- Cellular (3G, 4G, LTE, & more)
- IoT
- WiFi MIMO
- Engineering Development and Automated Manufacturing Test
- U-NII-6 through U-NII-8 (5.925 to 7.125GHz)

### 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-USB4AR48G120 is Adaura Technologies' latest design in the AD-USB series of programmable RF attenuators. Combining all the best features of the previous models, the R4 is the new series flag ship. With a completely custom machined aluminum enclosure, the AD-USB4AR48G120 boasts 120dB of attenuation with over 130dB 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 and HID communication. Optional Power Over Ethernet (POE) can be configured to the device.

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### Specifications

Attenuation Step Size (dB)	0.05		
Number of individually controlled RF chains	4		
Operating Frequency (MHz)	100 – 8,000		
Attenuation Range (dB)	0 - 120		
Impedance ( $\Omega$ )	50		
IP3 Input (dBm) <sup>1</sup>	40		
Attenuation Accuracy (dB)	Frequency	Atten.	Typical Accuracy
	100 – 8000 MHz	3	$\pm 0.2$
		15	$\pm 0.4$
		30	$\pm 0.8$
		45	$\pm 1.2$
		60	$\pm 1.9$
		75	$\pm 2.1$
		90	$\pm 2.6$
105		$\pm 3.4$	
120	$\pm 3.9$		
Dwell Time per Channel ( $\mu\text{sec}$ ) <sup>2</sup>	126		
Min. Dwell Time for all Channels ( $\mu\text{sec}$ ) <sup>3</sup>	550		
Attenuation Transition Time (ns) <sup>4</sup>	680		
VSWR	>1:1 All states		
Max Input RF Power (dBm)	+28		
Power Use (mA)	195		
Power Over Ethernet	IEEE802.3at Class 2 compliant		
Operating Temperature ( $^{\circ}\text{C}$ )	0 to 60		
Communication <sup>5</sup>	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
	100 MHz	5.5	6.5
	2400 MHz	6.5	7.6
	6000 MHz	9.8	11.0
	8000 MHz	11.5	12.5

<sup>A</sup> 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.

<sup>B</sup> Attenuator RF ports are interchangeable bidirectional signal transmission.

<sup>1</sup> Tested with 1 MHz span between signals.

<sup>2</sup> 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).

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

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

<sup>5</sup> USB support for simultaneous HID and Serial connections.

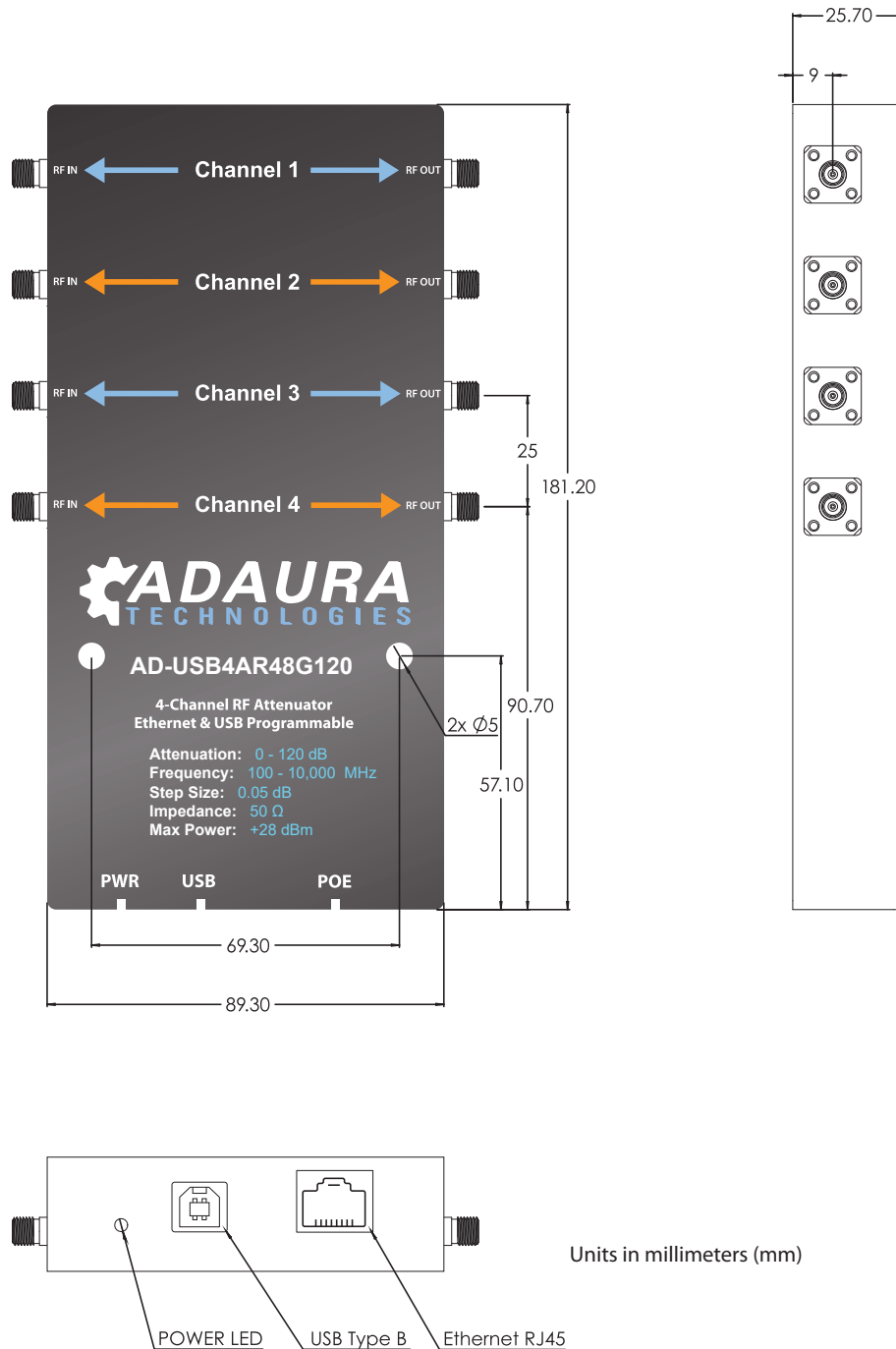
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### Drawing



# AD-USB4AR48G120

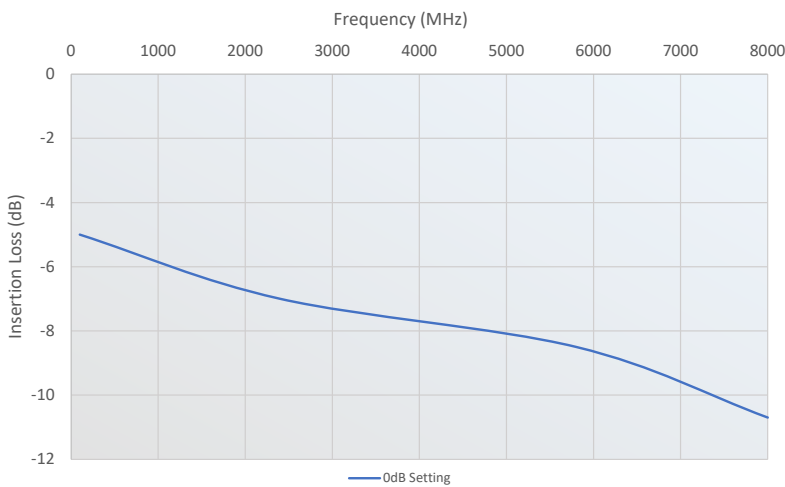


## USB/Ethernet Programmable RF Attenuator

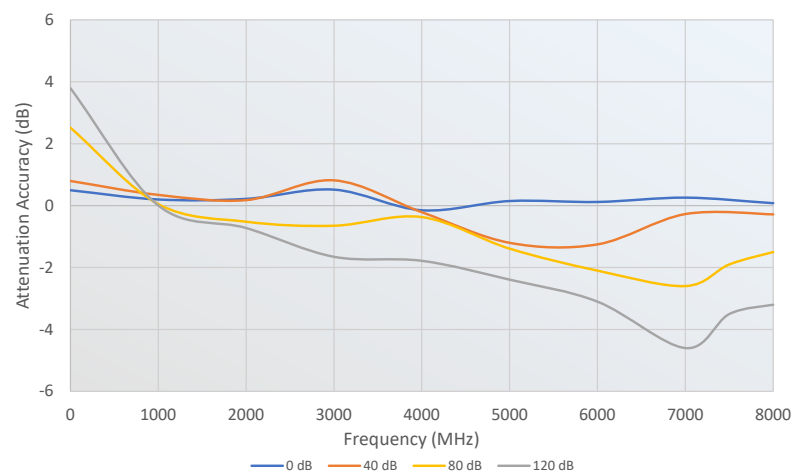
120dB, 0.1-8GHz, 0.05dB Step size, Power Over Ethernet (POE), 4 Independent Channels

### Performance

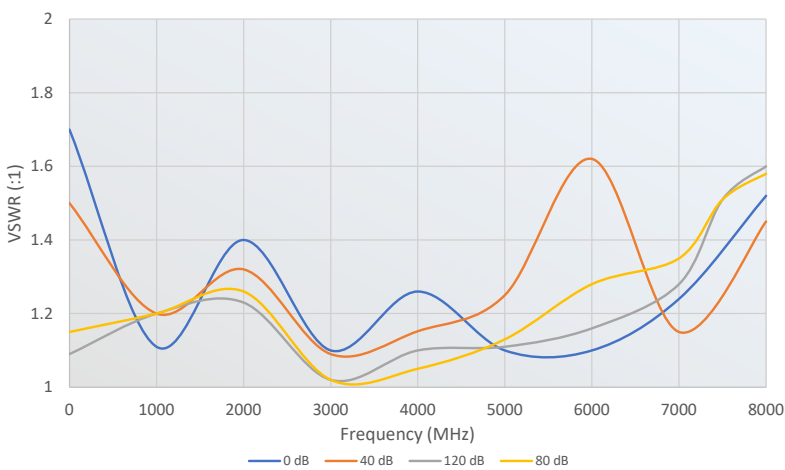
#### Insertion Loss (dB)



#### Attenuation Accuracy



#### Input VSWR



#### Output VSWR

