

LDA-908V-8 Lab Brick® High Resolution Digital Attenuator

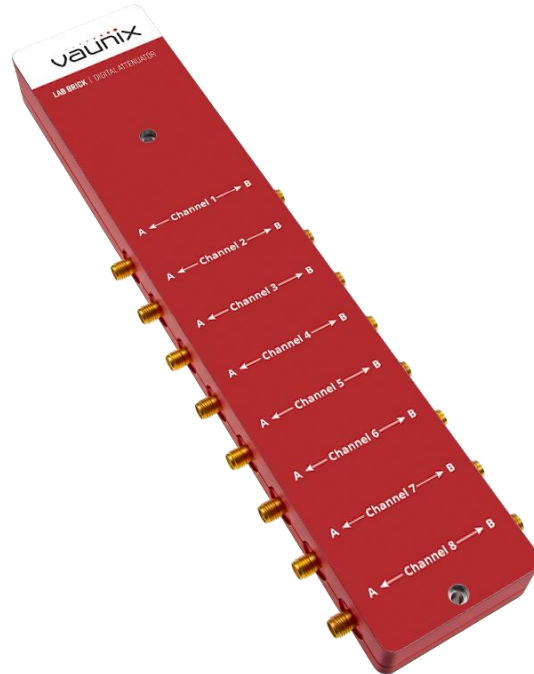
200 – 8000 MHz Frequency | 90 dB Attenuation Range | 8 Channels | 0.1 Step Size

Features/Benefits

- USB and Ethernet Interfaces
- Reliable and Repeatable solid state digital attenuation
- Includes Windows GUI and SDK, macOS GUI and SDK, Linux SDK, LabVIEW driver, Python examples and more
- Configurable Static IP or DHCP
- Password protected Ethernet interface
- Programmable attenuation ramp and fading profiles
- Operate multiple devices directly from a PC or self powered hub
- Easily portable USB powered device

Applications

- Wi-Fi, Wi-Fi 6E, 3G, 4G, 5G, LTE, Microwave Radio Fading Simulators
- Engineering/Production Test Labs
- Automated Test Equipment (ATE)



The Lab Brick LDA series of Digital Attenuators bring affordability, functionality, reliability and simplicity to the microwave test bench. The LDA products range from 6 MHz to 40 GHz with input level tolerance to 2 Watts and step size as small as 0.1 dB.

The LDA-908V-8 offers both USB and Ethernet interfaces. The USB port uses a native HID interface to avoid the difficulties inherent in using older serial or IEEE-488 interfaces implemented over USB. As a result, Lab Brick users can get to work faster without having to install kernel level drivers, and Lab Brick devices can be easily used on any system that supports USB HID devices, including low cost embedded computers using Linux or similar operating systems. The Ethernet interface is configurable for Static IP or DHCP with the ability to assign the HTTP port for extra security.

The LDA-908V-8 Digital Attenuator is a highly accurate, bidirectional, 50 Ohm step attenuator with 8 independently controlled attenuator paths. The LDA-908V-8 provides calibrated attenuation from 200 to 8000 MHz with an amazing step size of 0.1 dB and typical accuracy <0.25 dB over 90 dB of control range. The attenuators are easily programmable for fixed attenuation, swept attenuation ramps and fading profiles directly from the included Windows or macOS Graphical User Interface (GUI). Alternatively, for users wishing to develop their own interface, Vaunix supplies LabVIEW drivers, Windows API DLL files, macOS .dylib files, Linux drivers, Python examples and much more.

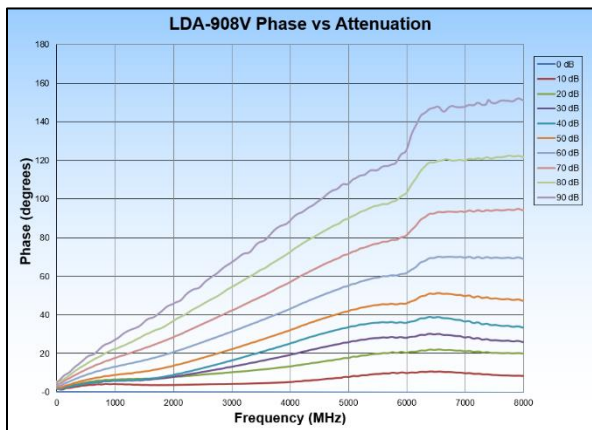
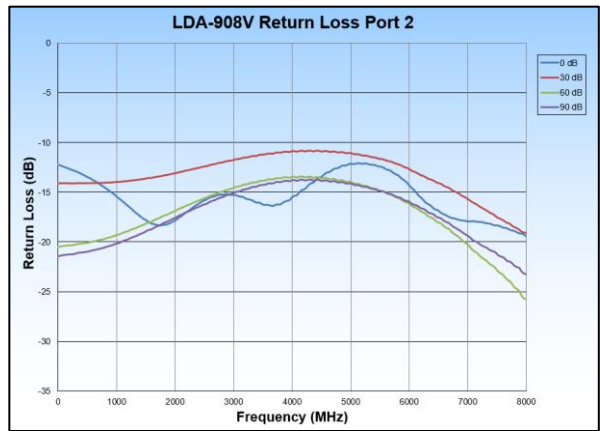
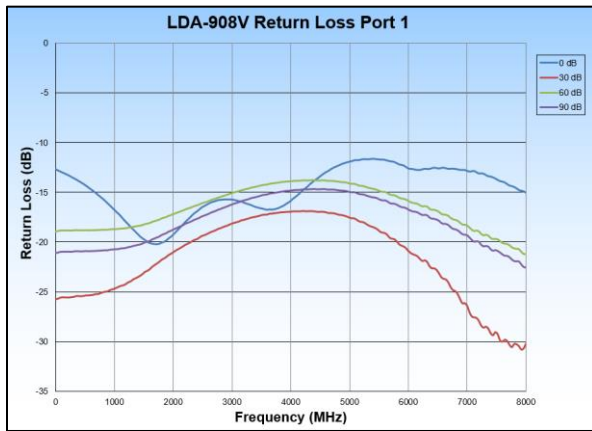
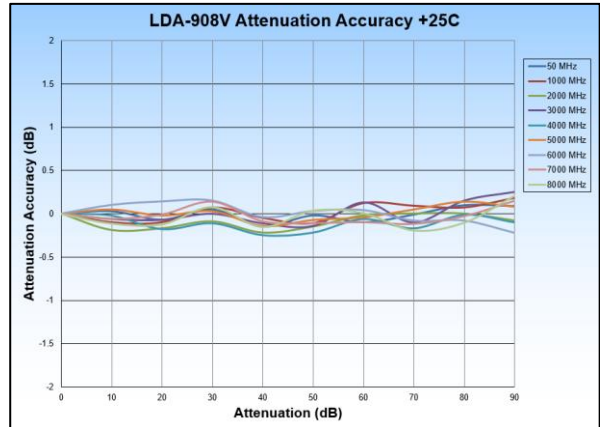
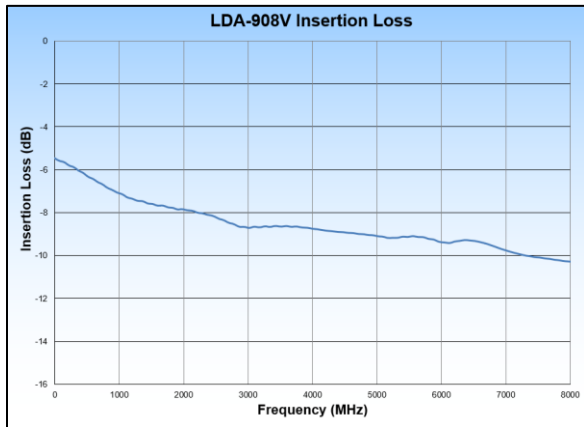
LDA-908V-8 Specifications

Parameter	Test Conditions	Min	Typ	Max
Frequency Range (MHz)		200		8000
Impedance (Ω)			50	
Channels			8	
Attenuation Range (dB)		90		
Step Size (dB)		0.1		
Insertion Loss (dB)	< 2 GHz		7	8.5
	< 4 GHz		8.5	9.5
	< 8 GHz		9.5	10.5
Attenuation Accuracy (dB)	+25 °C		0.25	1.5
	-30 °C to +70 °C		1	3
Switching Speed (μ s)			15	
Maximum Input Level (dBm)			23	
Input IP3 (dBm)		38	45	
VSWR			1.5:1	

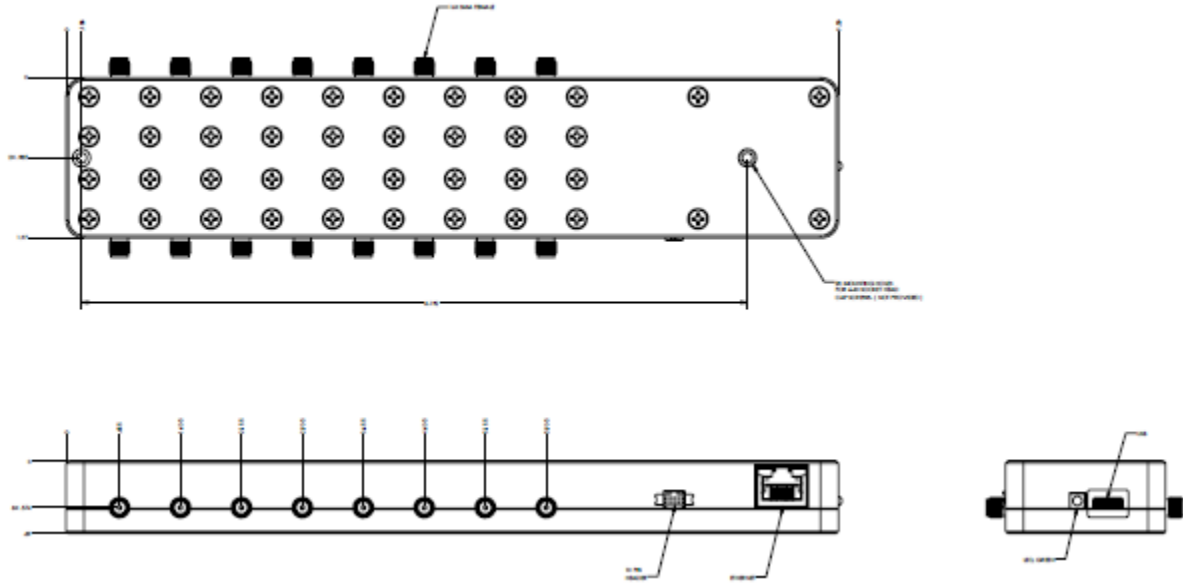
Parameter	Test Conditions/Notes	
Power Requirements	From the USB connection	+5 VDC 95 mA
Environmental	Operating Temperature	-30 °C to +70 °C
	Relative Humidity (non-condensing)	<95%
Physical Connections	Power	USB Type C – female
	Control	USB/Ethernet
	RF Connectors	SMA – female
	Expansion Bus ¹	10 pin
Operating Modes	Manual Attenuation Control Swept Attenuation – uni/bi directional – one time/repeat Profile	
Mechanical	Size	9.50 x 1.97 x 0.86 inches 241.3 x 50 x 21.8 millimeters
	Weight	0.6 pounds 0.273 kilograms

¹The expansion bus allows the user to link multiple LDA-908V-8 and LDA-908V-4 attenuators, providing a single point of power and control to a set of devices. Please contact Vaunix for expansion buss instructions, cable pricing, and availability.

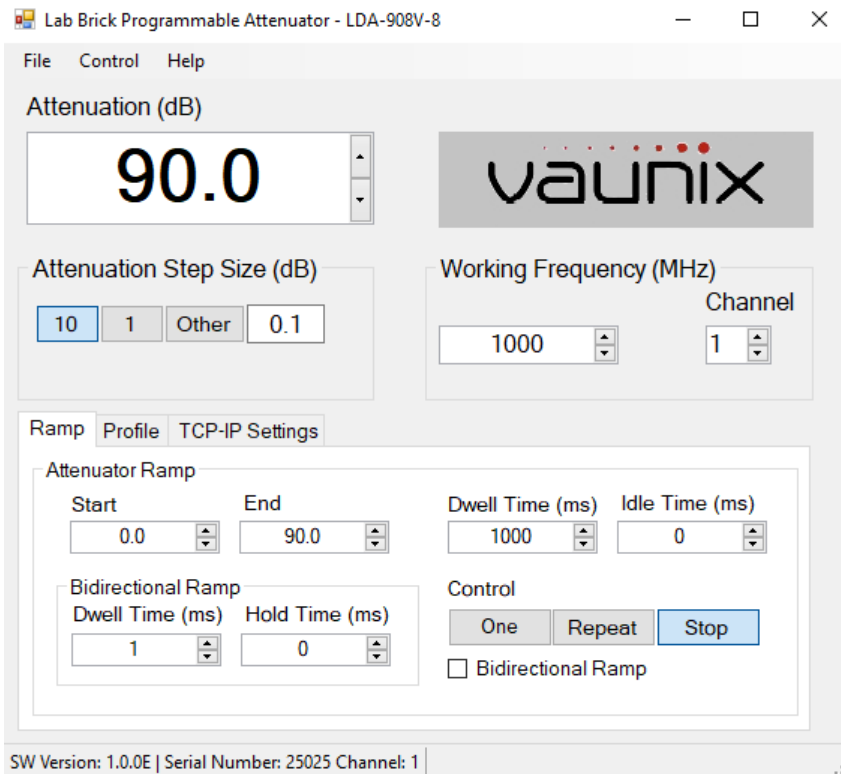
LDA-908V-8 Performance Plots



LDA-908V-8 Mechanical Outline



LDA-908V-8 USB Software Interface



LDA-908V-8 Ethernet Web Interface


Advance Settings Page

The screenshot displays the 'Advance Settings Page' for the LDA-908V-8 device. The interface includes a top navigation bar with 'STATUS', 'SETUP', and 'LOGOUT' buttons. A left sidebar contains menu items: 'RF Settings', 'Advance Settings' (highlighted), 'Network Settings', and 'Account Settings'. The main content area is titled 'Global Configuration' and contains two rows of settings: 'Frequency' set to 5800 MHz and 'Attenuation' set to 90 dB, each with a 'Set All' button. Below this are 'Read Config' and 'Apply Changes' buttons. The 'Attenuation Settings' section features a table with 13 columns: Chnl#, Action, Atten. (dB), Step Size(dB), Ramp Start(dB), Ramp End(dB), Dwell Time(ms), Idle Time(ms), Ramp Mode, Bi-Dwell Time(ms), Bi-Hold Time(ms), and Bi-Ramp. The table lists 8 channels with their respective settings.

Chnl#	Action	Atten. (dB)	Step Size(dB)	Ramp Start(dB)	Ramp End(dB)	Dwell Time(ms)	Idle Time(ms)	Ramp Mode	Bi-Dwell Time(ms)	Bi-Hold Time(ms)	Bi-Ramp
1	Set	90.0	10.0	.0	90.0	1000	0	Stop	1	0	<input type="checkbox"/>
2	Set	88.9	.0	.0	.0	1	0	Stop	0	0	<input type="checkbox"/>
3	Set	90.0	1.0	.0	90.0	1000	0	Stop	1	0	<input type="checkbox"/>
4	Set	32.1	.0	.0	.0	1	0	Stop	0	0	<input type="checkbox"/>
5	Set	.0	.0	.0	.0	1	0	Stop	0	0	<input type="checkbox"/>
6	Set	31.1	.0	.0	.0	1	0	Stop	0	0	<input type="checkbox"/>
7	Set	89.3	.0	.0	.0	1	0	Stop	0	0	<input type="checkbox"/>
8	Set	90.0	1.0	.0	90.0	1000	0	Stop	1	0	<input type="checkbox"/>

Network Settings Page

The screenshot displays the 'Network Settings Page' for the LDA-908V-8 device. The interface is similar to the Advance Settings page, with a top navigation bar and a left sidebar. The main content area is titled 'Network Configuration' and contains a form with the following fields: 'IP Type' (set to DHCP), 'IP Address' (192.168.1.178), 'Subnet Mask' (255.255.255.0), 'Gateway' (192.168.1.1), and 'HTTP Port' (80). A 'Save Changes' button is located below the form.


LDA-908V-8

STATUS
SETUP
LOGOUT

RF Status

Channel #:	1 ▾	
Frequency(MHz):	1000	[Min-Max(MHz):1-8000]
Attenuation(dB):	90.0	[Min-Max(dB):.0-90.0]
RF State:	On	
Active Bank#:	1	

Ramp Configuration

Control State:	Stop	
Ramp Mode:	Up	
Direction:	Unidirectional	
Start:	.0	
End:	90.0	
Dwell Time(ms):	1000	
Idle Time(ms):	0	
Bidirectional Dwell Time:	1	
Hold Time:	0	

Profile Configuration

Control State:	Stop	
Profile Length:	50	
Dwell Time(ms):	100	
Idle Time(ms):	0	

Network Details

Mode:	DHCP	
Ip Address:	192.168.1.178	
Subnet:	255.255.255.0	
Gateway:	192.168.1.1	
MAC:	70-b3-d5-ee-60-cc	

System Information

Model Number:	LDA-908V-8	
Serial Number:	25025	
Version:	1.0.0E	
Bank ID#:	1	