LDA-906V-8 Lab Brick® High Resolution Digital Attenuator

200 – 6000 MHz Frequency | 90 dB Attenuation Range | 0.1 Step Size | 8 - Channels

Features/Benefits

- Reliable and Repeatable solid-state digital attenuation

- Includes Windows GUI and SDK, macOS GUI and SDK, Linux SDK, LabVIEW driver, Python examples and more

- Programmable attenuation ramp and fading profiles

- Operate multiple devices directly from a PC or self-powered hub

- Easily portable USB-powered device

- Sized to fit into a single rack unit for ATE applications

Applications

- WiMAX, 3G, 4G, 5G, LTE, DVB, 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 20 GHz with an input level tolerance of 2 Watts and step size as small as 0.1 dB.

The LDA-906V-8 Digital Attenuator is a highly accurate, bidirectional, 8-channel digital step attenuator. The LDA-906V-8 provides calibrated attenuation from 200 to 6000 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 specifically designed for errorless attenuation transitions in ultra-high speed 5G, WiFi, and PTP networks. The devices are easily programmable for fixed attenuation, swept attenuation ramps, and fading profiles directly from the included Graphical User Interface (GUI). Alternatively, Vaunix supplies LabVIEW drivers, Windows API DLL files, macOS DYLIB files, Linux drivers, Python examples, and more for users wishing to develop their own interface.
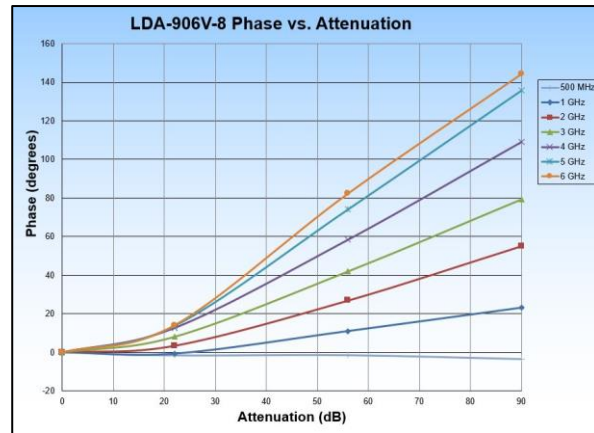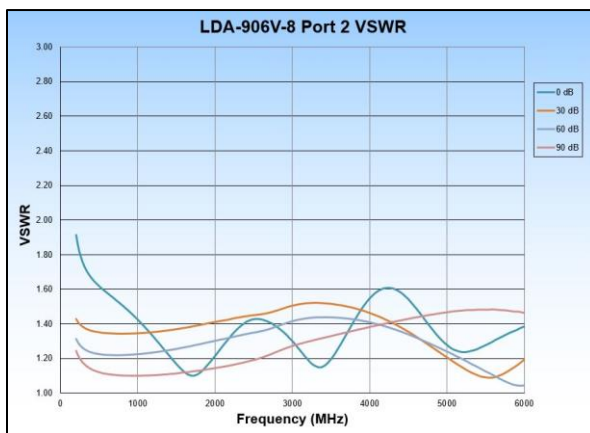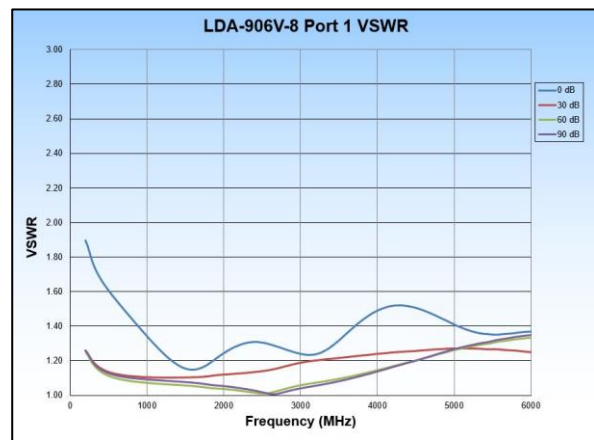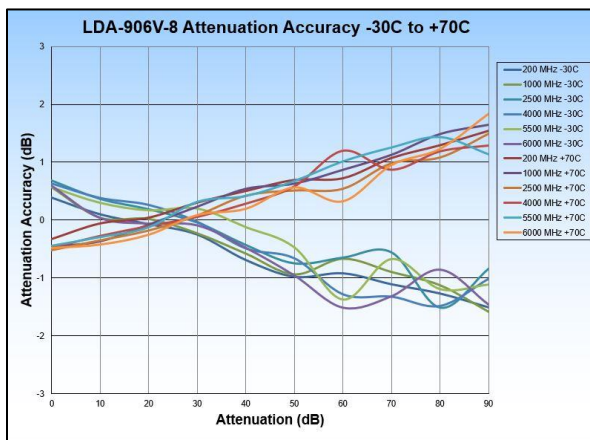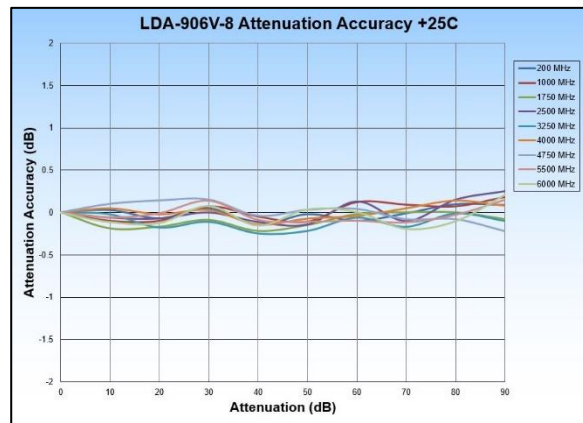
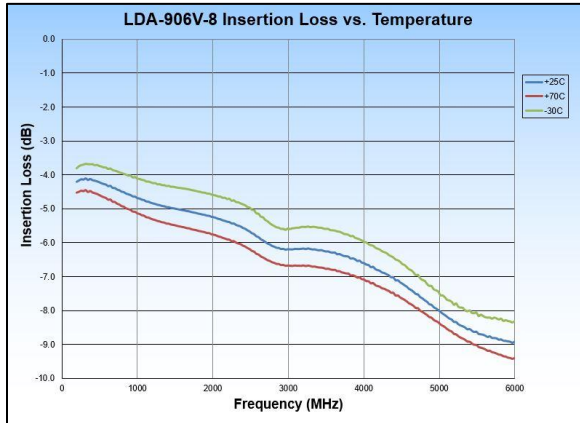Lab Bricks use a native USB HID interface to avoid the difficulties inherent in using older serial or IEEE-488 interfaces implemented over USB. As a result, Lab Brick users can get to work faster without having to install kernel level drivers, and Lab Brick devices can be easily used on any system that supports USB HID devices, including low-cost embedded computers using Linux or similar operating systems.
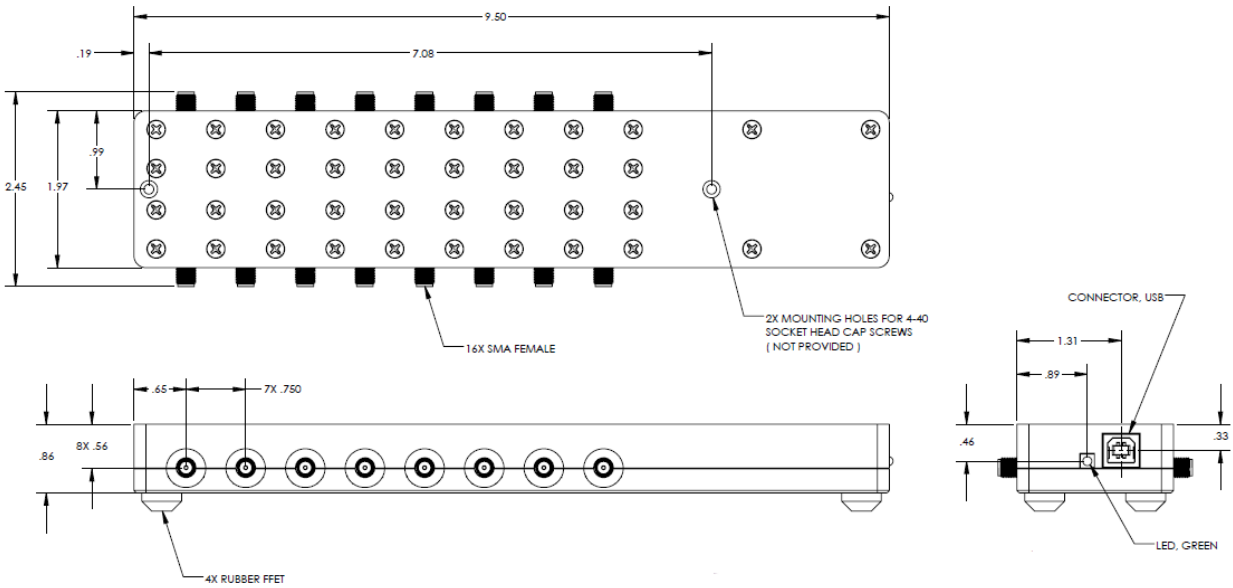
LDA-906V-8 Specifications

Parameter	Test Conditions	Min	Typ	Max
Frequency Range (MHz)		200		6000
Impedance (Ω)			50	
Channels			8	
Attenuation Range (dB)		90		
Step Size (dB)		0.1		
Insertion Loss (dB)	< 2 GHz		5	6
	< 4 GHz		6.5	7.5
	< 6 GHz		8.5	10.5
Attenuation Accuracy (dB)	+25 °C		0.25	1
	-30 °C to +70 °C		1	2.5
Channel to Channel Isolation (dB)			100	
Switching Speed (µs)			15	
Maximum Input Level (dBm)	<1 GHz		26	
	1 – 6 GHz		28	
Input IP3 (dBm)		44	47	
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 and Control	USB Type B – female
	RF Connectors	SMA – female
Operating Modes	Manual Attenuation Control Swept Attenuation – uni/bi directional – one time/repeat Profile	
Mechanical	Size	9.5 x 1.97 x 0.86 inches 241.3 x 50 x 21.8 millimeters
	Weight	1.0 pounds 0.45 kilograms

LDA-906V-8 Performance Plots

LDA-906V-8 Insertion Loss vs. Temperature

LDA-906V-8 Attenuation Accuracy +25C

LDA-906V-8 Attenuation Accuracy -30C to +70C

LDA-906V-8 Port 1 VSWR

LDA-906V-8 Port 2 VSWR

LDA-906V-8 Phase vs. Attenuation

LDA-906V-8 Mechanical Outline

LDA-906V Software Interface