

LDA-802-16 Lab Brick® High Resolution Digital Attenuator

200 – 8000 MHz Frequency | 120 dB Attenuation Range | 0.1 Step Size

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
- Single shot or repeating programmable attenuation ramps
- Fading profiles programmable from GUI or SDK
- USB and Ethernet Control
- Configurable Static IP or DHCP
- Password-protected Ethernet Interface
- Sized to fit into a single rack unit for ATE applications



Applications

- WiFi, WiFi6E, 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 40 GHz with an input level tolerance of 2 Watts and step size as small as 0.1 dB.

The LDA-802-16 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.

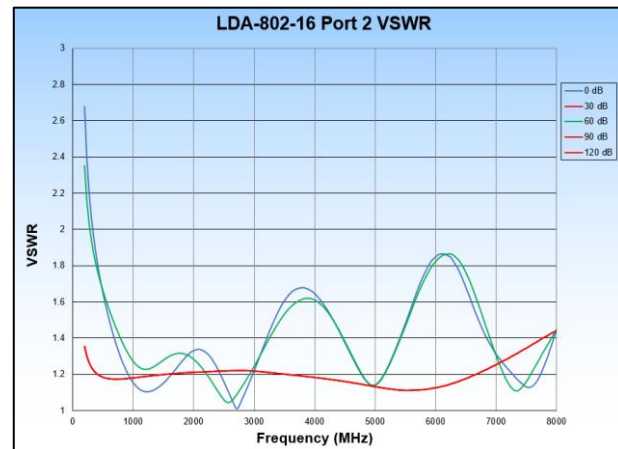
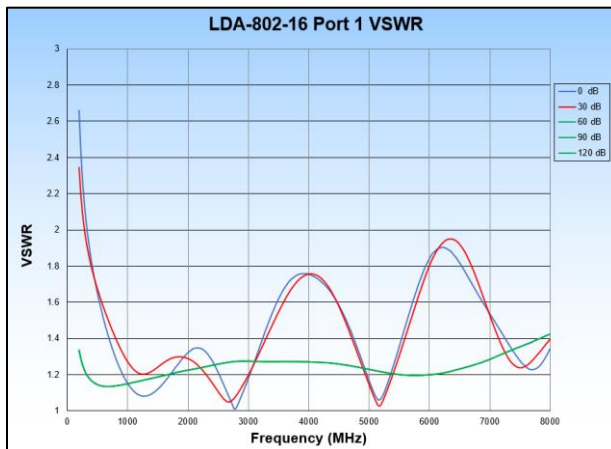
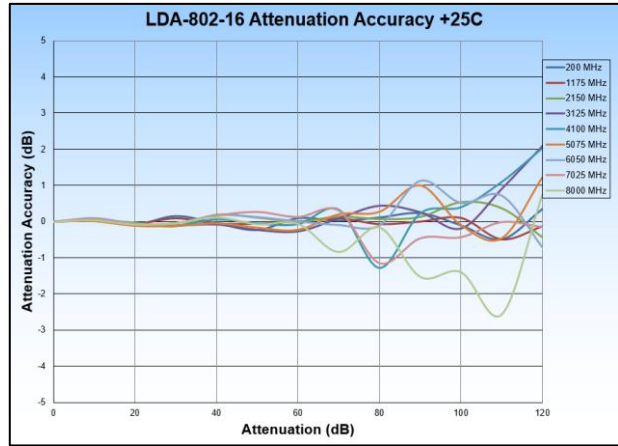
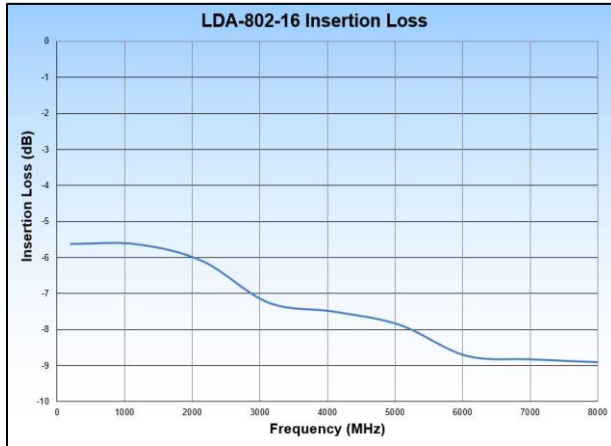
The LDA-802-16 Digital Attenuator is a rack-mounted 16-channel high dynamic range, bidirectional, 50 Ohm step attenuator. The LDA-802-16 provides 120 dB of attenuation control range from 200 to 8000 MHz with a step size of 0.1 dB. The attenuators are easily programmable for fixed attenuation, swept attenuation ramps, and user-defined 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.

LDA-802-16 Specifications

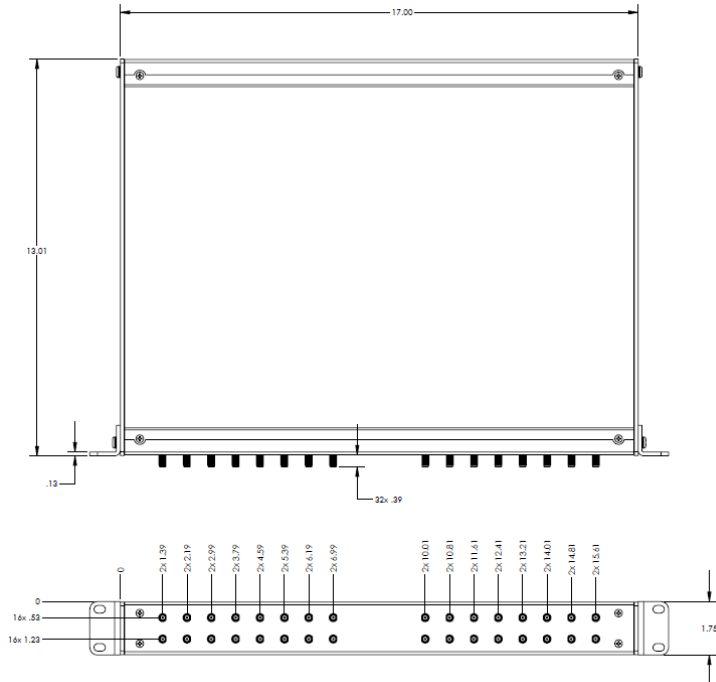
Parameter	Test Conditions	Min	Typ	Max
Frequency Range (MHz)		200		8000
Impedance (Ω)			50	
Channels			16	
Attenuation Range (dB)		110	120	
Step Size (dB)		0.1		
Insertion Loss (dB)	< 2 GHz		5.5	7
	< 4 GHz		7	9
	< 8 GHz		9	11
Attenuation Accuracy (dB)	<30 dB		0.2	1
	<60 dB		0.4	1.5
	<90 dB		0.6	2.5
	<110 dB		1	3
	<120 dB		2	7
Switching Speed (μ s)			2	
Maximum Input Level (dBm)	Average/Peak		25/30	
Input IP3 (dBm)		38	45	
VSWR			1.5:1	

Parameter	Test Conditions/Notes	
Power Requirements	From the USB connection	+5 VDC 200 mA
Environmental	Operating Temperature	-30 °C to +70 °C
	Relative Humidity (non-condensing)	<95%
Physical Connections	Power and Control	USB Type C – female
	Control	USB Type C or Ethernet
	RF Connectors	SMA – female
Operating Modes	Manual Attenuation Control Swept Attenuation – uni/bi directional – one time/repeat User Defined Profile up to 1000 Attenuation States	
Mechanical	Size (1RU)	17 x 13 x 1.73 inches 431.8 x 330.2 x 43.9 millimeters
	Weight	5.5 lbs 2.5 kg

LDA-802-16 Performance Plots

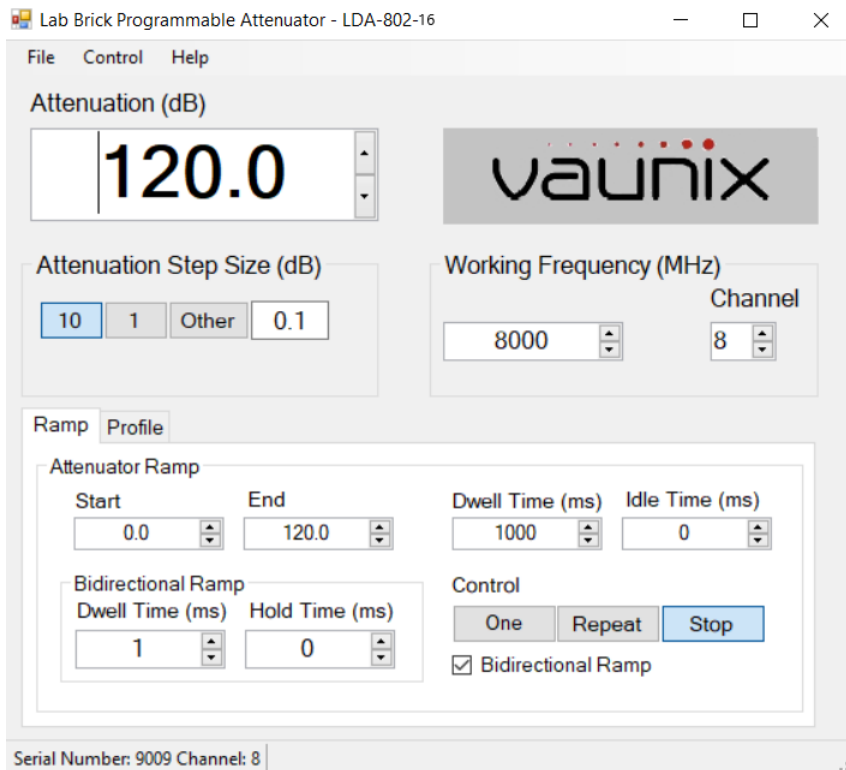


LDA-802-16 Mechanical Outline




LDA-802-16 Software Interface

Windows GUI



Ethernet GUI



LDA-802-16

STATUS
SETUP
LOGOUT

RF Settings

Advance Settings

Network Settings

Account Settings

Saves Config

Global Configuration

Frequency	<input style="width: 80%;" type="text" value="200"/> MHz (Valid range: 200-8000)	<input style="background-color: red; color: white; padding: 2px 5px;" type="button" value="Set All"/>
Attenuation	<input style="width: 80%;" type="text" value="0.0"/> dB (Valid range: 0.0-120.0)	<input style="background-color: red; color: white; padding: 2px 5px;" type="button" value="Set All"/>

Auto-Refresh

Attenuation 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-Ran
1	<input style="background-color: red; color: white; padding: 2px 5px;" type="button" value="Set"/>	<input style="width: 50px;" type="text" value="0.0"/>	<input style="width: 50px;" type="text" value="1.0"/>	<input style="width: 50px;" type="text" value="0.0"/>	<input style="width: 50px;" type="text" value="120.0"/>	<input style="width: 50px;" type="text" value="1000"/>	<input style="width: 50px;" type="text" value="0"/>	<input style="background-color: #ccc; padding: 2px 5px;" type="button" value="Stop"/> ▼	<input style="width: 50px;" type="text" value="1"/>	<input style="width: 50px;" type="text" value="0"/>	<input type="checkbox"/>
2	<input style="background-color: red; color: white; padding: 2px 5px;" type="button" value="Set"/>	<input style="width: 50px;" type="text" value="0.0"/>	<input style="width: 50px;" type="text" value="1.0"/>	<input style="width: 50px;" type="text" value="0.0"/>	<input style="width: 50px;" type="text" value="120.0"/>	<input style="width: 50px;" type="text" value="1000"/>	<input style="width: 50px;" type="text" value="0"/>	<input style="background-color: #ccc; padding: 2px 5px;" type="button" value="Stop"/> ▼	<input style="width: 50px;" type="text" value="1"/>	<input style="width: 50px;" type="text" value="0"/>	<input type="checkbox"/>
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