

# LDA-802Q 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 GUI, Windows and Linux SDK, LabVIEW driver
- Single shot or repeating programmable attenuation ramps
- Fading profiles programmable from GUI or SDK
- Easily portable USB powered device
- USB or Ethernet Control
- Sized to fit into a single rack unit for ATE applications

## Applications

- Wi-Fi 6E, Wi-Fi, 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 input level tolerance to 2 Watts and step size as small as 0.1 dB.

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.

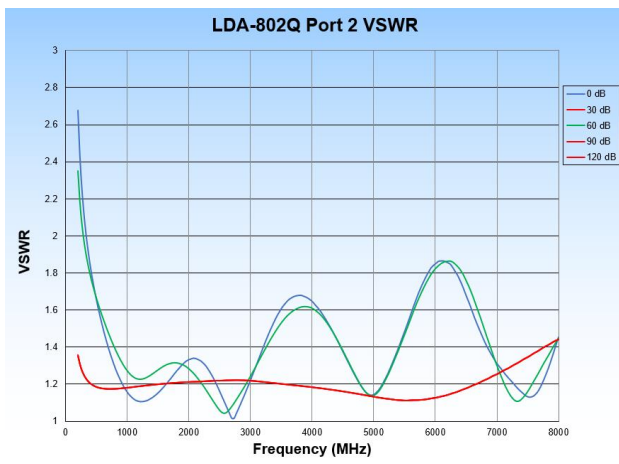
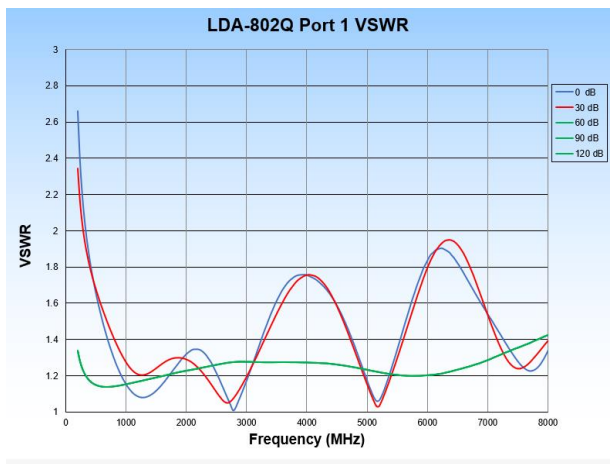
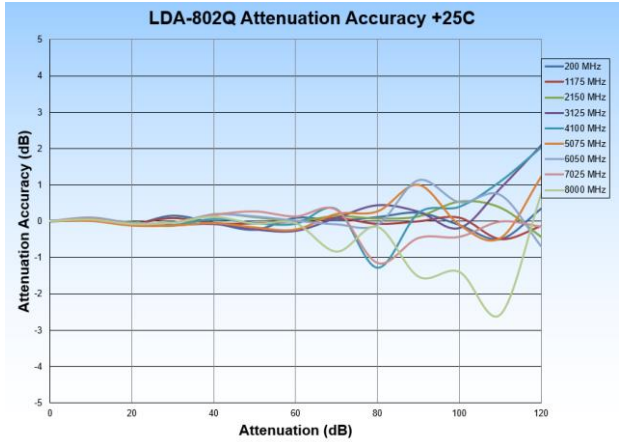
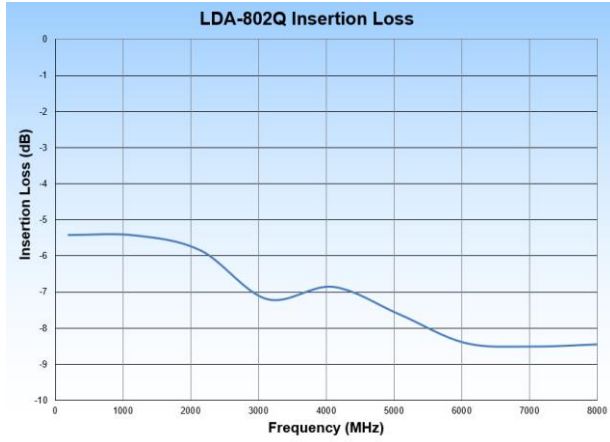
The LDA-802Q Digital Attenuator is a 4-channel high dynamic range, bidirectional, 50 Ohm step attenuator. The LDA-802Q provides 120 dB of attenuation control range from 200 to 8000 MHz with a step size of 0.1 dB. The attenuators are easily programmable for fixed attenuation, swept attenuation ramps and fading profiles directly from the included Graphical User Interface (GUI). Alternatively, for users wishing to develop their own interface, Vaunix supplies LabVIEW drivers, Windows API DLL files, Linux drivers, Python examples and much more.

## LDA-802Q Specifications

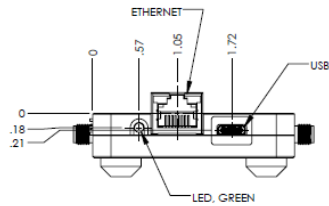
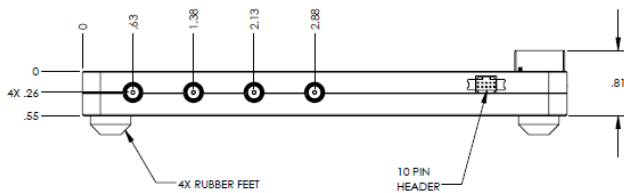
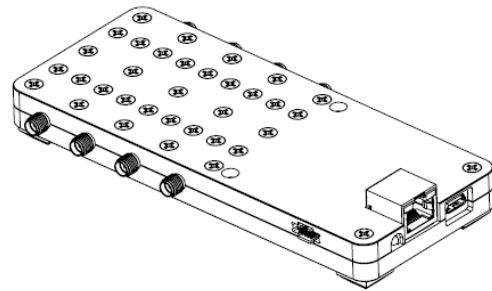
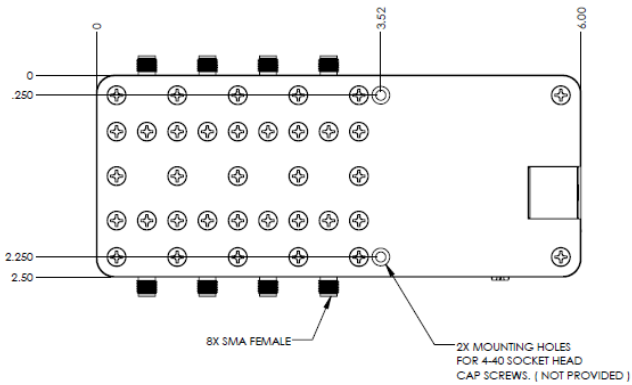
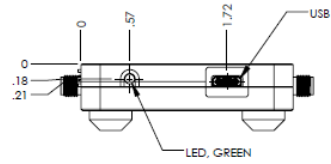
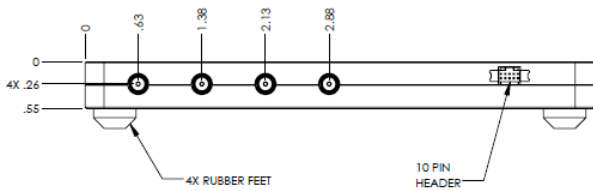
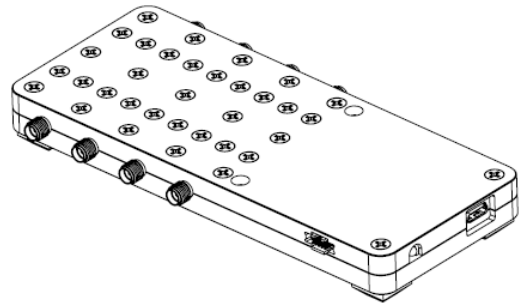
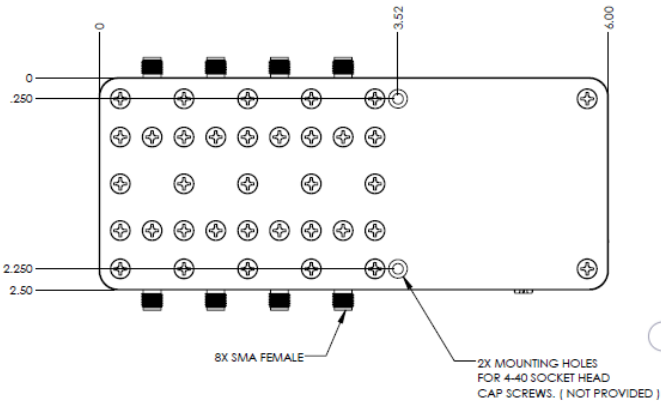
Parameter	Test Conditions	Min	Typ	Max
Frequency Range (MHz)		200		8000
Impedance ( $\Omega$ )			50	
Channels			4	
Attenuation Range (dB)		120		
Step Size (dB)		0.1		
Insertion Loss (dB)	< 2 GHz		5.5	6.5
	< 4 GHz		6.5	8
	< 8 GHz		8.5	10
Attenuation Accuracy (dB)	<30 dB		0.2	1
	<60 dB		0.4	1.5
	<90 dB		0.6	2.5
	<110 dB		1	3
	<120 dB		2	4.5
Switching Speed ( $\mu$ s)			2	
Maximum Input Level (dBm)	Avg/Peak		25/30	
Input IP3 (dBm)		38	45	
VSWR			1.5:1	

Parameter	Test Conditions/Notes	
Power Requirements	From the USB connection	+5 VDC 80 mA
Environmental	Operating Temperature	-30 °C to +70 °C
	Relative Humidity (non-condensing)	<95%
Physical Connections	Power	USB Type C
	Control	USB/Ethernet
	RF Connectors	SMA – female
Operating Modes	Manual Attenuation Control Swept Attenuation – uni/bi directional – one time/repeat Profile	
Mechanical	Size	6.0 x 2.5 x 0.55 inches 152.4 x 63.5 x 14 millimeters
	Weight	0.5 pounds 227 grams

# LDA-802Q Performance Plots



# LDA-802Q Mechanical Outline



# LDA-802Q Software Interface

