LDA-602 Lab Brick® High Resolution Digital Attenuator

10 – 6000 MHz Frequency | 63 dB Attenuation Range | 0.5 Step Size

Features/Benefits

- USB Powered and Controlled
- 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

Applications

- Wi-Fi, 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 10 MHz to 40 GHz with input level tolerance to 2 Watts and step size as small as 0.1 dB.

The LDA-602 offers an easy to use USB interface. 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 LDA-602 Digital Attenuator is an accurate, programmable, bidirectional, 50 Ohm step attenuator. The LDA-602 provides 63 dB of attenuation range from 10 to 6000 MHz with a step size of 0.5 dB. 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.
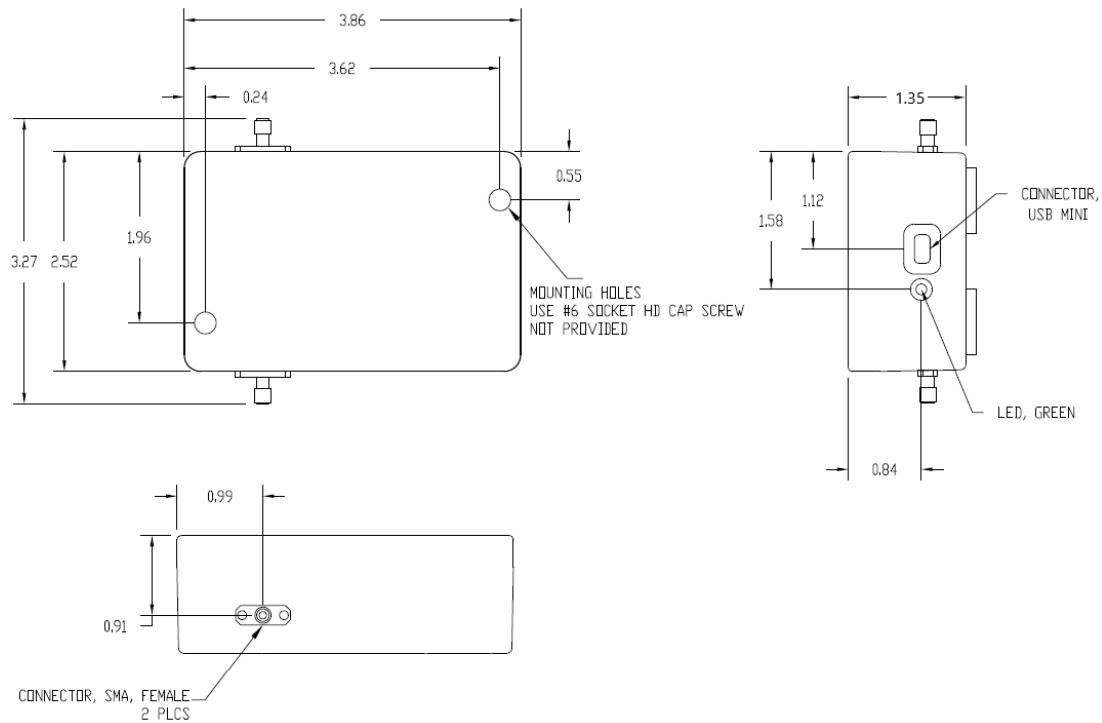
LDA-602 Specifications

Parameter	Test Conditions	Min	Typ	Max
Frequency Range (MHz)		10		6000
Impedance (Ω)			50	
Channels			1	
Attenuation Range (dB)		63		
Step Size (dB)		0.5		
Insertion Loss (dB)	< 1 GHz		6	7
	< 4 GHz		7	8
	< 6 GHz		8	10
Attenuation Accuracy (dB)			2	+/- 0.3+5%
Switching Speed (ns)			70	
Maximum Input Level (dBm)			22	
Input IP3 (dBm)			32	
VSWR			1.5:1	

Parameter	Test Conditions/Notes	
Power Requirements	From the USB connection	+5 VDC 50 mA
Environmental	Operating Temperature	0 °C to +50 °C
	Relative Humidity (non-condensing)	<95%
Physical Connections	Power	USB miniB – female
	Control	USB miniB – female
	RF Connectors	SMA – female
Operating Modes	Manual Attenuation Control Swept Attenuation – uni/bi directional – one time/repeat Profile	
Mechanical	Size	3.86 x 2.52 x 1.35 inches 98 x 54 x 34 millimeters
	Weight	0.3 pounds 136 grams

LDA-602 Performance Plots

LDA-602 Insertion Loss

LDA-602 Attenuation Accuracy

LDA-602 VSWR
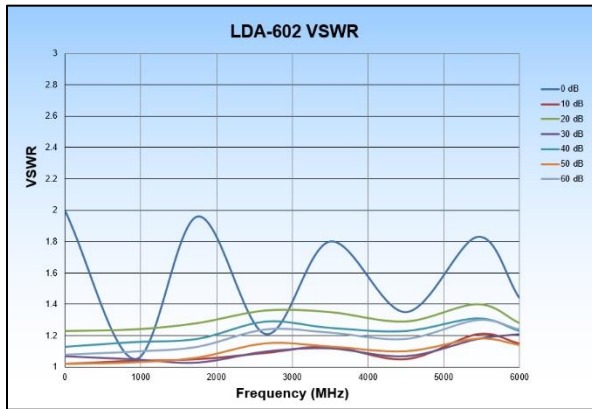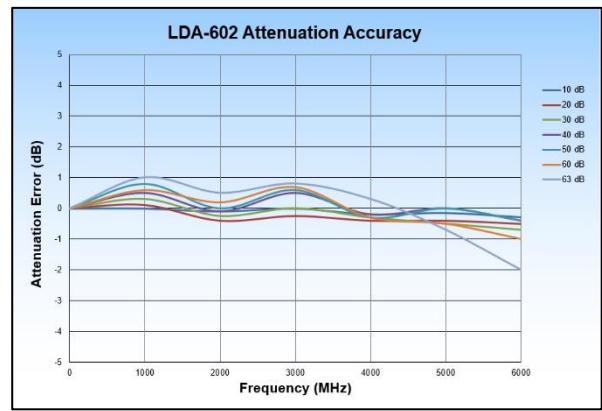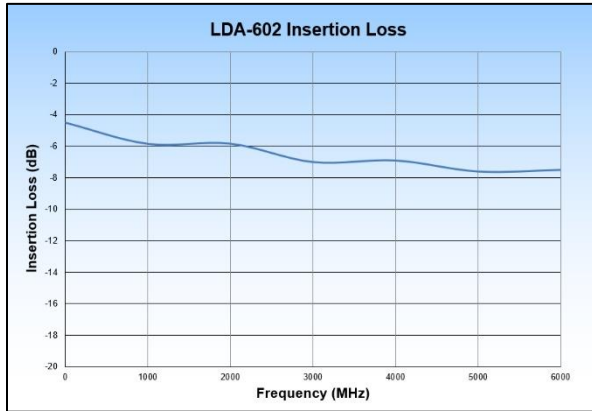
LDA-602 Mechanical Outline

LDA-602 USB Software Interface