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LEADER OF RF BROADBAND SOLUTIONS

RFDAT0015G6RUSB

USB / Ethernet Absorptive Digital Control Attenuator 0.1 - 15GHz



Note: The photo is for illustration purposes only.
Please refer to outline drawing

Features

- Wide Band Operation 0.1-15GHz
- USB Controlled and Powered
- 0.5dB LSB Steps to 31.5dB

Typical Applications

- Wireless Infrastructure
- Test and Measurement
- Military and Aerospace

Electrical Specifications, TA = +25°C, USB Powered

Description	PN: RFDAT0015G6RUSB						
	Absorptive Digital Attenuator						
Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.1		5	5		15	GHz
Attenuation Range		31.5			31.5		dB
Attenuation Flatness: (Referenced to Insertion Loss)		±2.0			±2.0		dB
Control Bits			6			6	Bit
Control Step Size	0.5			0.5			dB
Insertion Loss		3.5	4.0		5.0	5.5	dB
Insertion Loss Temperature Coefficient		0.005			0.005		dB/°C
Input VSWR(All States)		1.8	2.0		1.8	2.0	: 1
Output VSWR(All States)		1.8	2.0		1.8	2.0	: 1
Input 0.1dB Compression Point (Po.1dB)		23			23		dBm
RF Input Power		30			30		dBm
Input IP3		40			38		dBm
Weight	0.71						Ounces
Impedance	50						Ω
Bias Current	210						mA
Power Supply	USB(+5.0V)						
Input / Output Connectors	SMA - Female						
Control Interface	USB2.0 & Ethernet(IPv4) (Control Cable Included)						
Finish	Gold Plated						
Material	Aluminum						
Sealing	Hermetically Sealed (Optional)						

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Ordering Information

Part No.	Description
RFDAT0015G6RUSB	0.1-15GHz Digital Control Attenuator

Environmental Specifications and Test Standards

Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-40°C~+85°C
Storage Temperature		-50°C~+105°C
Thermal Shock		1 Hour@ -40°C → 1 Hour @ +85°C (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & Temperature Burn In		Temperature +85°C for 72 Hours
Shock		1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s 2. Weight <=20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s 3. Total 18 times (6 directions, 3 repetitions per direction).
Altitude		Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)	MIL-STD-883	MIL-STD-883 (For Hermetically Sealed Units)



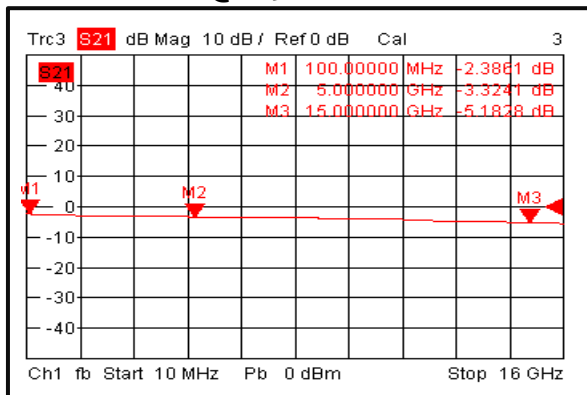
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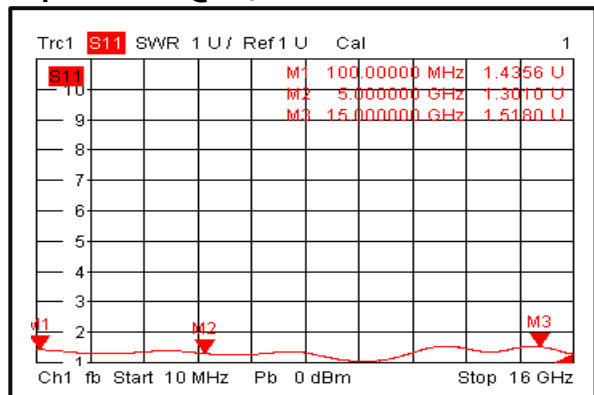
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Typical Performance Plots

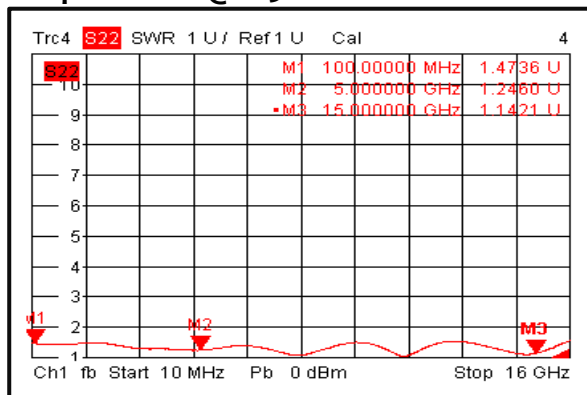
Insertion Loss @+25°C



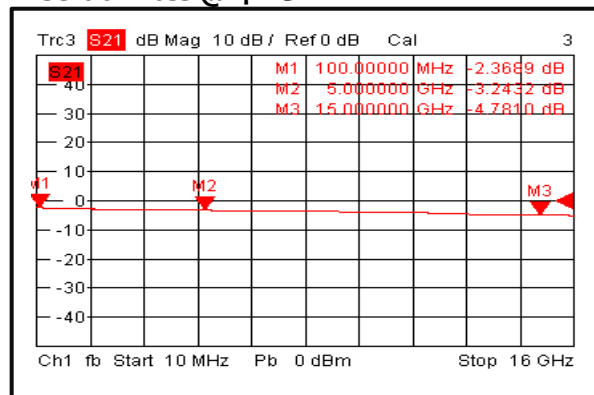
Input VSWR @+25°C



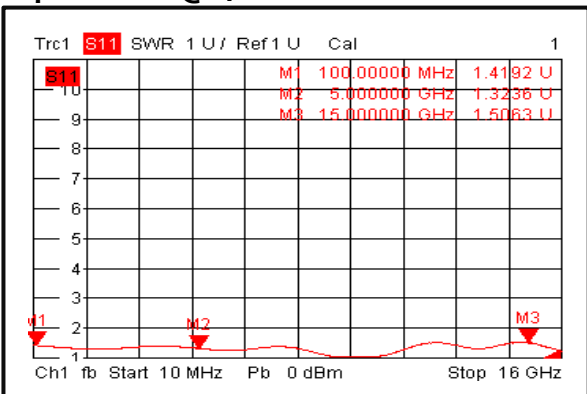
Output VSWR @+25°C



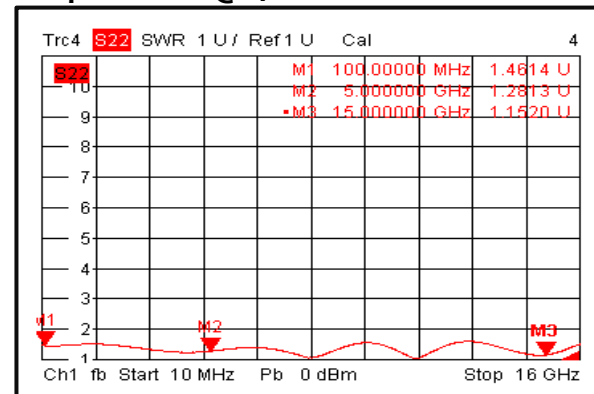
Insertion Loss @-40°C



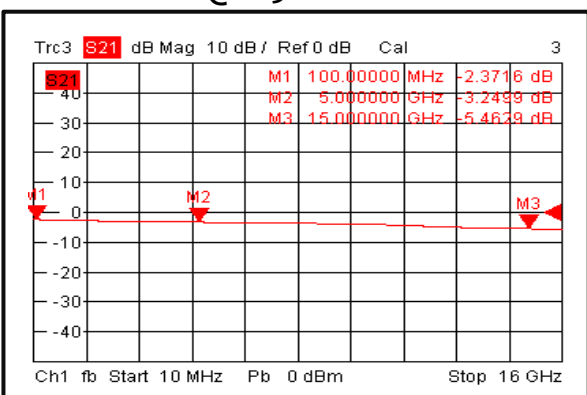
Input VSWR @-40°C



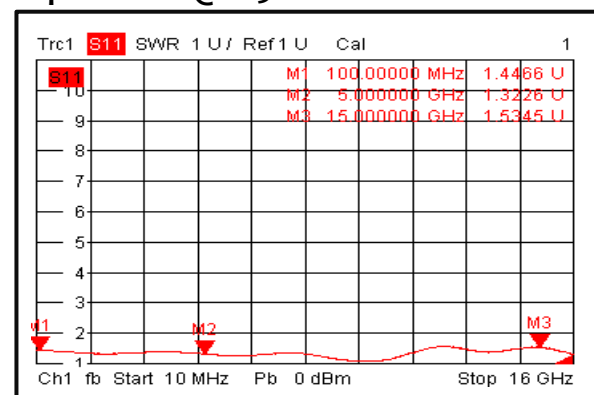
Output VSWR @-40°C



Insertion Loss @+85°C



Input VSWR @+85°C



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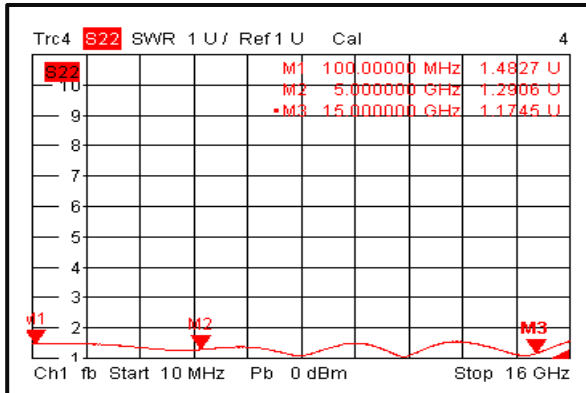


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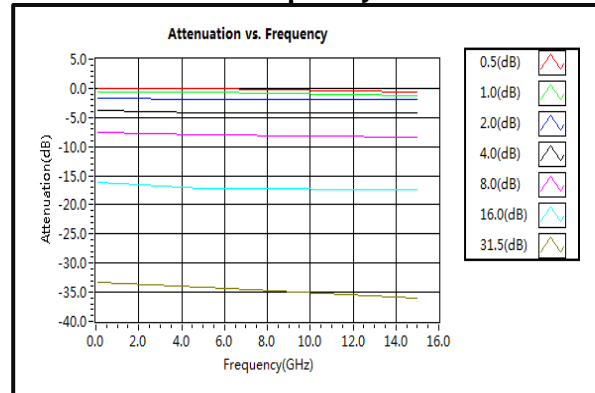
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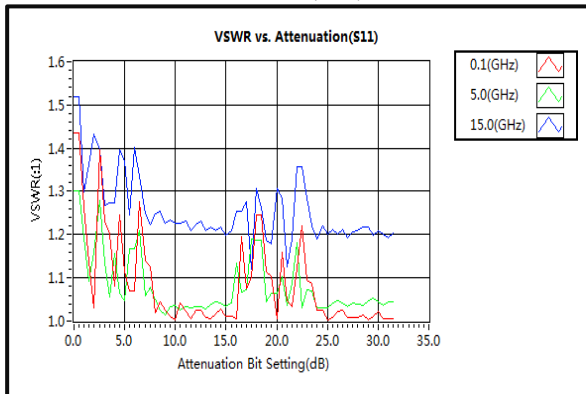
Output VSWR @+85°C



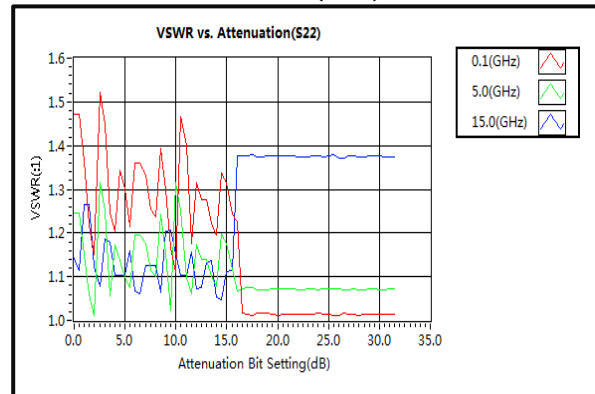
Attenuation vs. Frequency



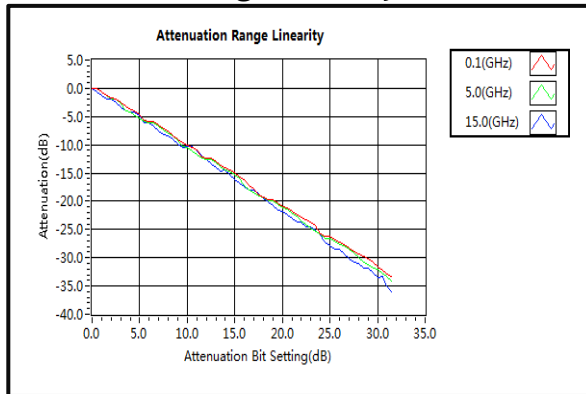
VSWR vs. Attenuation(S11)



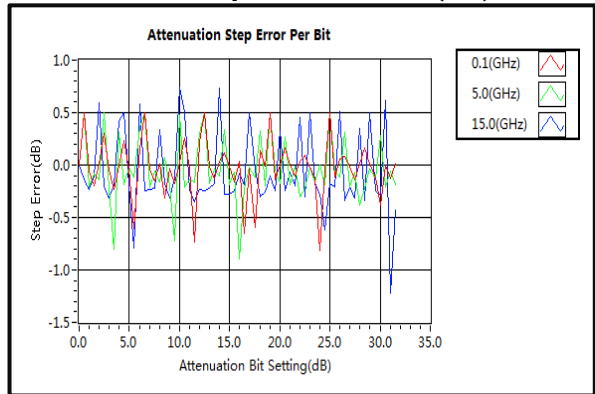
VSWR vs. Attenuation(S22)



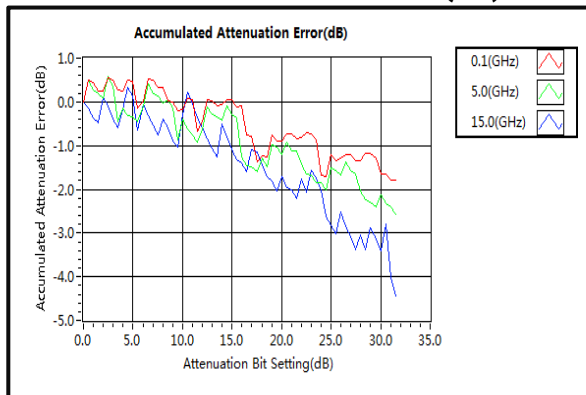
Attenuation Range Linearity



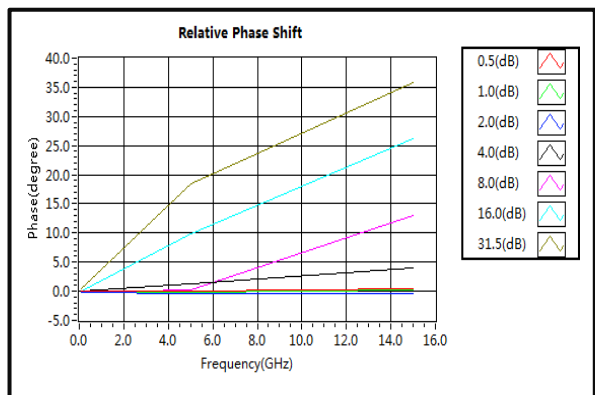
Attenuation Step Error Per Bit (dB)



Accumulated Attenuation Error(dB)



Relative Phase Shift

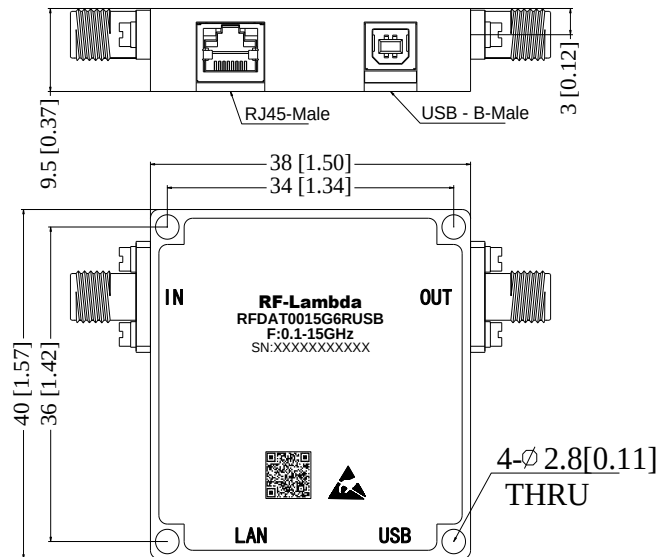


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Outline Drawing:

All Dimensions in mm [inches]



Note:
Outline drawing for reference only.

ID	Packing List	QTY
1	Fig a. USB/Ethernet Control RF Attenuator	1
2	Fig b. USB2.0 Cable (5 feet / 1.5 meter)	1
3	Fig c. Network Cable (6 feet / 2 meter)	1



Fig b.



Fig c.



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Control Content Description

Format Requirement	USB (virtual serial port) Configuration	LAN Interface	Range of Parameters
a.All commands must end with a semicolon. b.All commands are case insensitive. c.Comma is used to separate multiple parameters in commands. d.All commands are suitable for USB(virtual serial port) and LAN interface.	Baud Rate :115200 Data bits : 8 Parity : None Stop bits : 1 Flow Type :None	IP address and Port. Default:192.168.1.225 :5100; use 'USB Control panel.exe' to update.	x(Step): 1~2 ⁿ ,n is control bits.

Command Specification

ID	Order	Description	Return	Example
1	*IDN?;	Query product information	Product PN ,SN, Manufacturer ,version	*IDN?;
2	Reset;	Reset the product	/	Reset;
3	AT:ATT x;	Set attenuation step	Attenuation value	AT:ATT 2; Return : 2*step size
4	AT:ATT?;	Query current attenuation value	Attenuation step, attenuation value	AT:ATT? Return :2, 2*step size
5	AT:ATTS?	Query attenuation step size	Attenuation step size	AT:ATTS? Return : step size

Error Code Query

ID	Return	Description
1	E1	Missing semicolon
2	E2	Incorrect command
3	E3	Missing space character
4	E4	Out of range parameters



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USB Control Panel

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Download Quit Continue >>

Select Device

Digital Control Switch ☐

Digital Control Attenuator ☒

Digital Control Phase Shifter ☐

Control Interface

USB ☒ 1

ETHERNET ☐

Please select a COM port COM60 2

Connect Device 3

The device number is: 20040700161

Device IP: 192.168.1.235:5100

Note

1. Please refer to the product manual for power supply.

2. Please refer to the product manual to configure the port.

2020.03 v2.01

USB Control Panel

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<< Goback

Control Bits 6 Attenuation Step(dB) 1

Select the Attenuation Value(dB) 63

OFF

Device Name: Digital Control Attenuator

Part Number: RFDAT0102G6AUSB

Serial Number: 20032600365

Control Model: USB

Control Port: COM6

Send String AT:ATT 63;

Recevie String 63.000

2020.03.02 v1.01

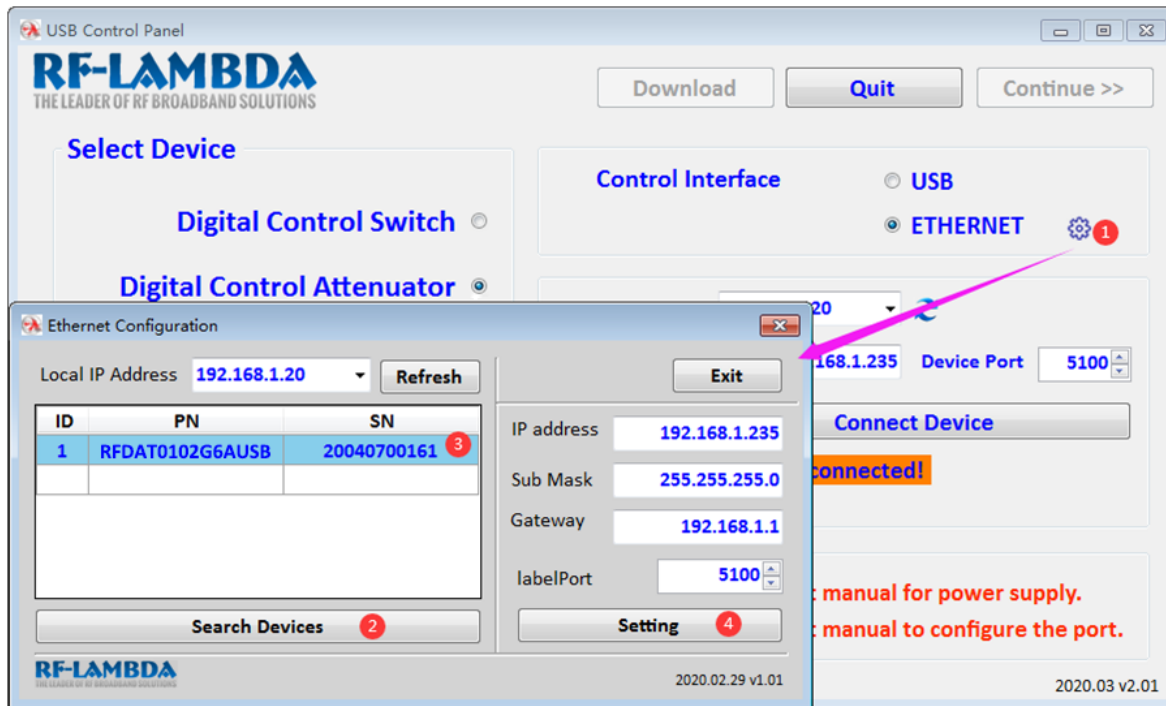
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