

7-Bit Digital Attenuator

0.5dB LSB/7 Bit/ 0.1-40GHz

Model: TLDA0.1G40G-62-7-V2

The TLDA0.1G40G-62-7-V2 is an broadband digitally controlled electrical attenuator operating from 0.1 to 40 GHz. The attenuator exhibits 14 dB typical insertion loss and offers 62 dB nominal attenuation control range in 0.5 dB steps under a 7-bit digital control. The control speed of the attenuator is typically 100ns. The RF input and output ports are female 2.92mm female coax connectors, and a male J30J-9ZKP port is employed for providing the control signal and DC bias.

Features:

- Ultra Wide Band: 0.1-40GHz
- 7-Bit, 0.5 dB LSB, 62 dB Range
- Low Insertion Loss
- High Attenuator Accuracy

Applications:

- Radar Systems
- Communication Systems
- Testing Equipment

Electrical Characteristics:

Parameter	Min	Typ	Max	Units
Frequency range	0.1-40			GHz
Insertion Loss		14	18	dB
Attenuation Range	62			dB
Control Bit TTL	7			Bit
Attenuation Step	0.5			dB
Switch Speed		100		ns
Input VSWR		2.0	2.5	:1
Output VSWR		2.0	2.5	:1
Input Max Power	25			dBm
DC Voltage	-5			V DC
DC Supply Current		20		mA
Impedance	50			Ohms

Mechanical Specifications:

Description	Parameter	Units
Input /Output Connector	2.92mm Female/2.92mm Female	
DC control interface	J30J-9ZKP	
Size	28*20*9.5	mm

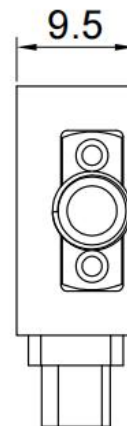
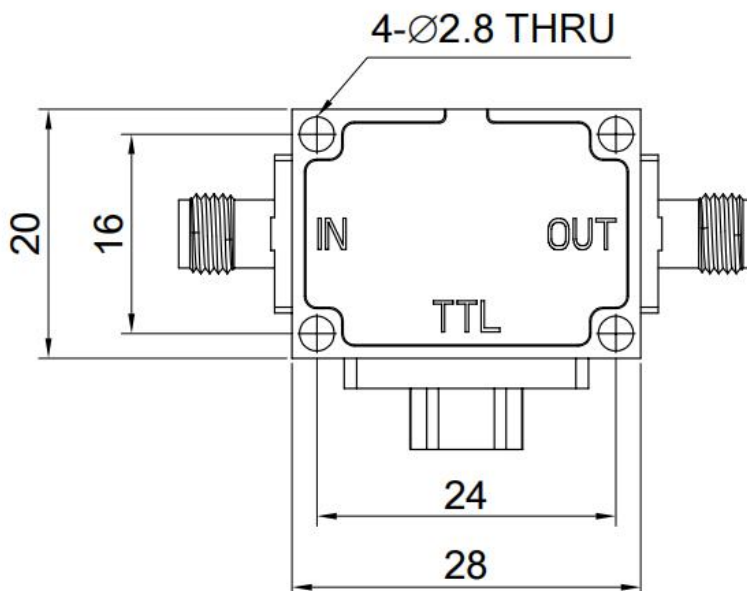
Absolute Maximum Ratings :

Description	Parameter	Units
Supply Bias Voltage	-5 (±5%)	V
RF Input Power	25	dBm
ESD sensitivity (HBm)	Class 0, passed 150V	

Outline Drawing:

Unit:mm

Regulatory Compliance:



OBSERVE PRECAUTIONS
ELECTROSTATIC SENSITIVE
DEVICES

Supply Conector and truth table(J30J-9ZKP):

J30J-15ZKP	
Pin#	Function
1	-5V
2	GND
3	C1
4	C2
5	C3
6	C4
7	C5
8	C6
9	C7

Truth Table							
TTL Control Input							Signal Path State
C1	C2	C3	C4	C5	C6	C7	
0	0	0	0	0	0	0	Reference
1	0	0	0	0	0	0	0.5
0	1	0	0	0	0	0	1
0	0	1	0	0	0	0	2
0	0	0	1	0	0	0	4
0	0	0	0	1	0	0	8
0	0	0	0	0	1	0	16
0	0	0	0	0	0	1	31.5
1	1	1	1	1	1	1	62
"0": Low level 0V; "1": High level 5V							

Environmental Conditions:

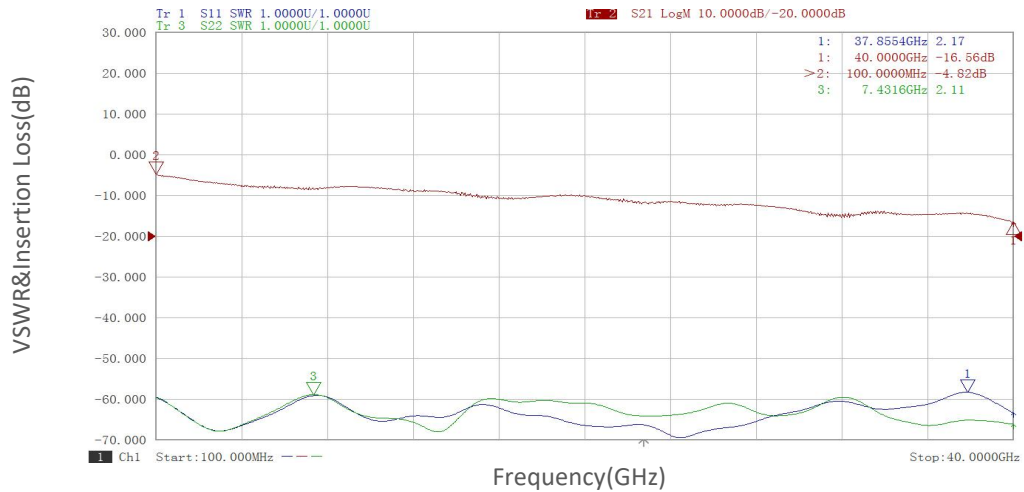
Parameter	Min	Typ	Max	Units
Operating Temperature	-10		+65	°C
Non-operating Temperature	-45		+85	°C
Relative humidity		95		%
Altitude	10,000			feet
Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis			
Shock(non operating)	20G for 11msc half sin wave,3 axis both directions			

Ordering Information:

Base Number	Description	Revision
TLDA0.1G40G-62-7-V2	7-Bit Digital Digital Attenuator,0.1-40GHz,2.92 Female	Rev.1.1

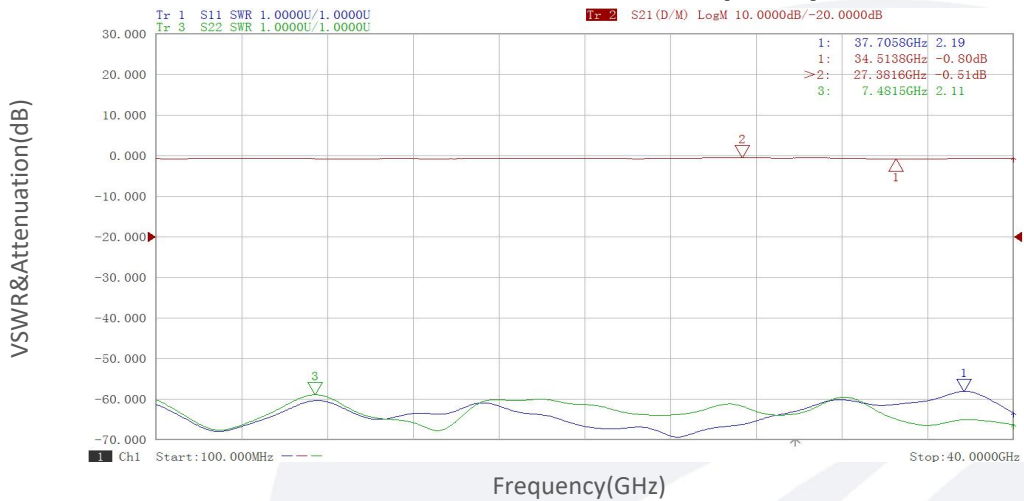
Typical Performance Data:

VSWR&Insertion Loss vs Frequency



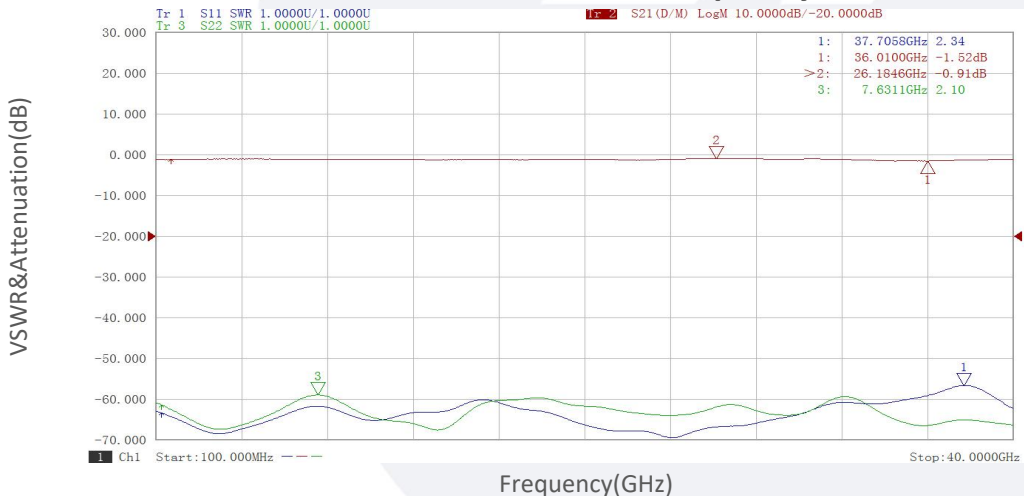
0.5dB:

VSWR&Attenuation vs Frequency



1dB:

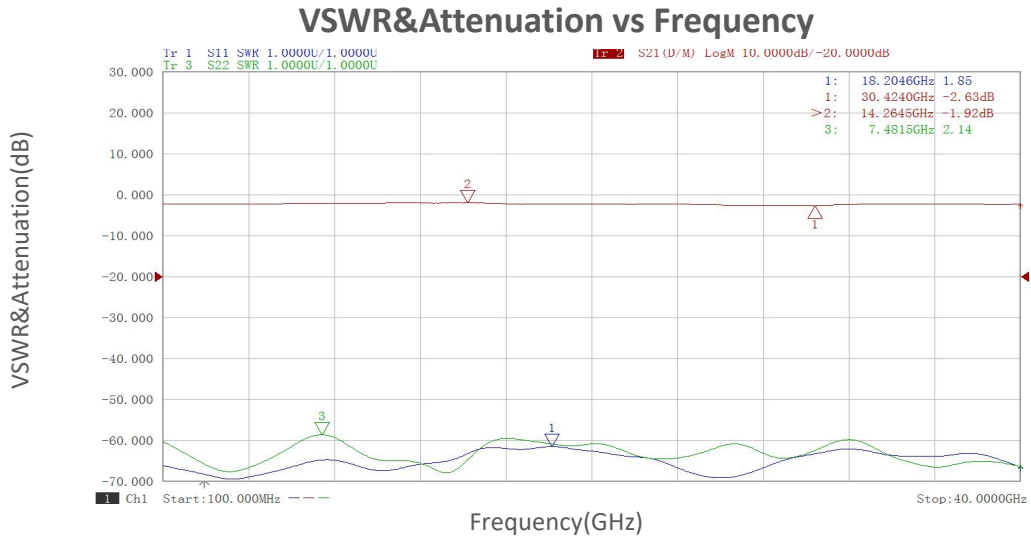
VSWR&Attenuation vs Frequency



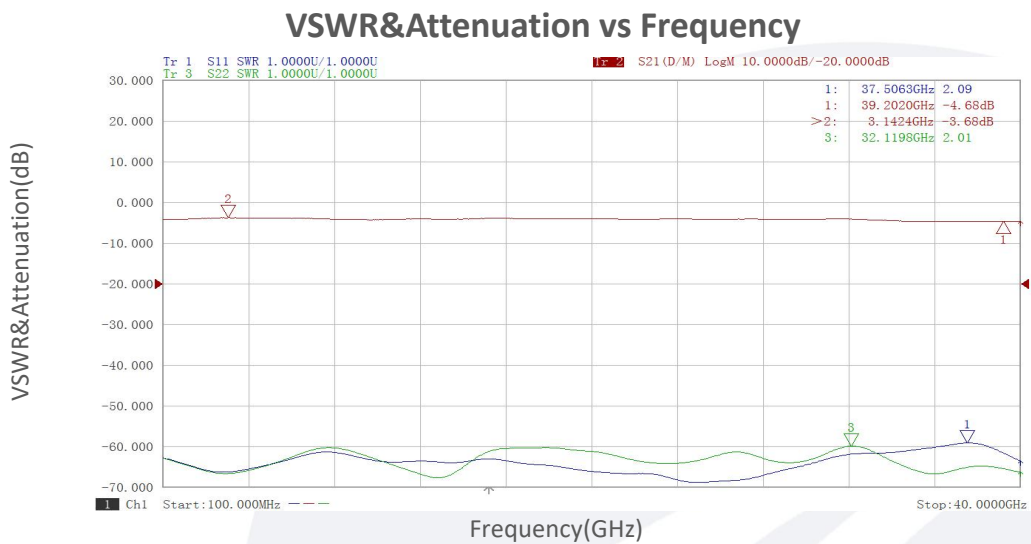
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

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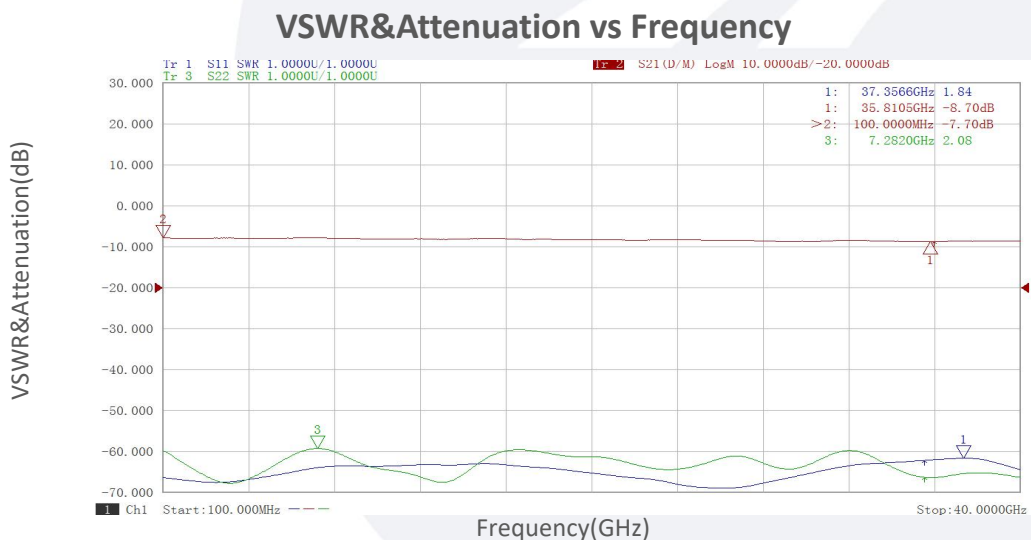
2dB:



4dB:



8dB:

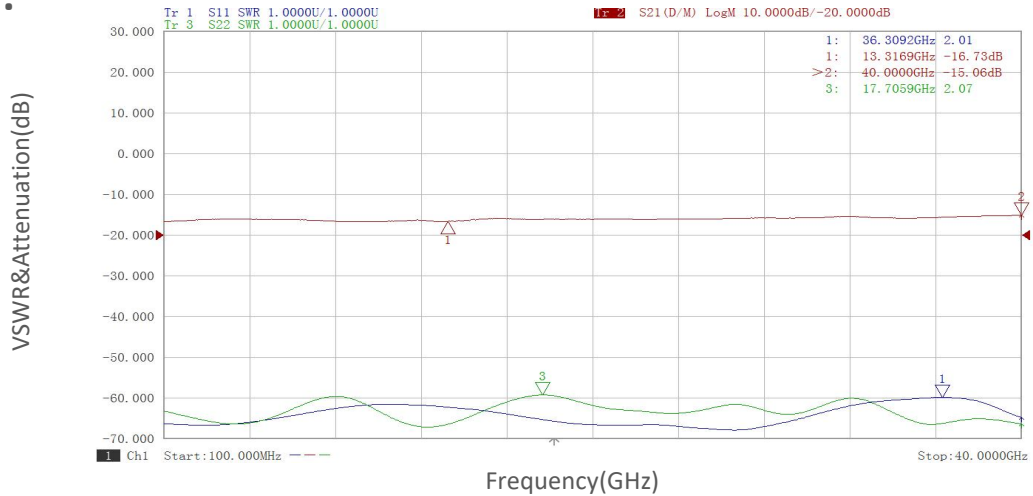


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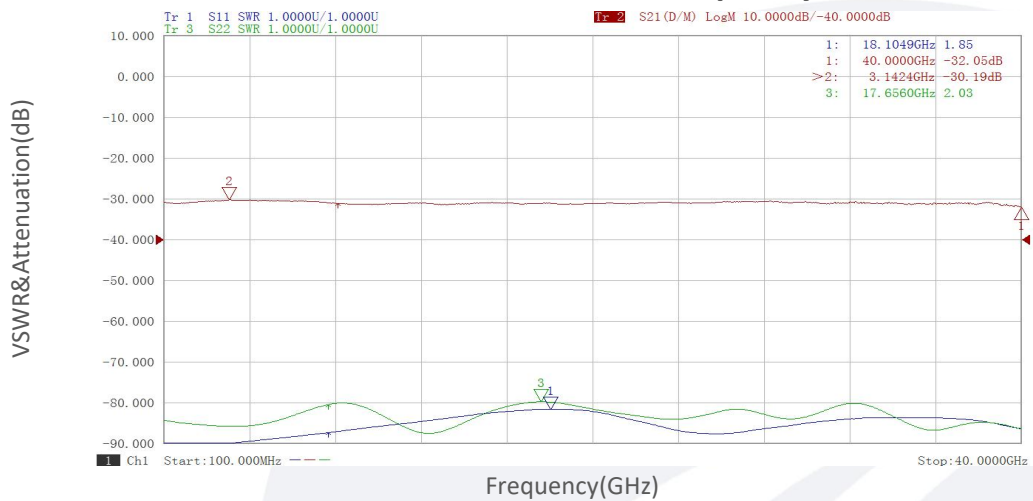
16dB:

VSWR&Attenuation vs Frequency



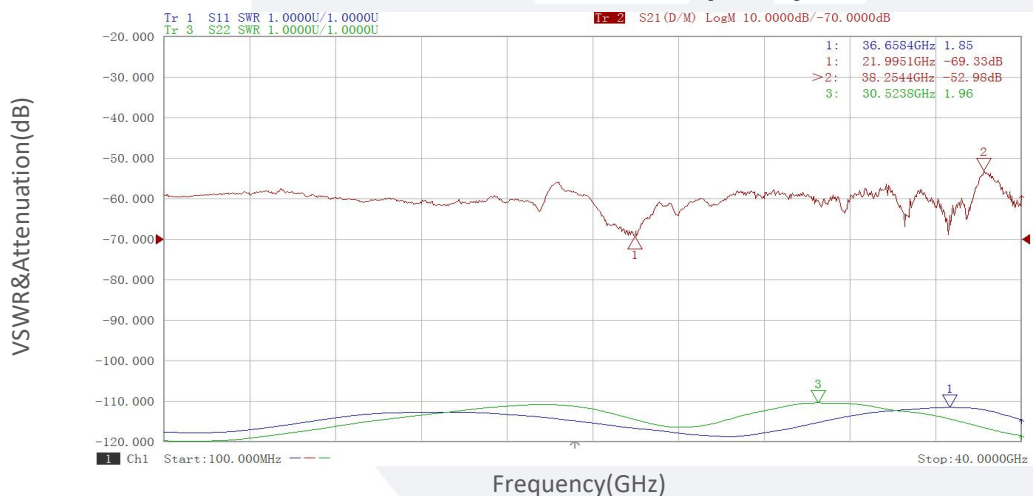
31.5dB:

VSWR&Attenuation vs Frequency



63dB:

VSWR&Attenuation vs Frequency



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