

7-Bit Digital Attenuator

0.5dB LSB/7 Bit/ 0.8-18GHz

Model: TLDA0.8G18G-63-7

The TLDA0.8G18G-63-7 is an broadband digitally controlled electrical attenuator operating from 0.8 to 18 GHz. The attenuator exhibits 8 dB typical insertion loss and offers 63 dB nominal attenuation control range in 0.5 dB steps under a 7-bit digital control. The control speed of the attenuator is 100 ns. The RF input and output ports are female SMA female coax connectors, and a male J30J-9ZKP port is employed for providing the control signal and DC bias.

Features:

- Ultra Wide Band: 0.8-18GHz
- 7-Bit, 0.5 dB LSB, 63 dB Range
- Low Insertion Loss
- High Attenuator Accuracy

Applications:

- Radar Systems
- Communication Systems
- Testing Equipment

Electrical Characteristics:

Parameter	Min	Typ	Max	Units
Frequency range	0.8-18			GHz
Insertion Loss		8	9	dB
Attenuation Range	63			dB
Control Bit TTL	7			Bit
Attenuation Step	0.5			dB
Switch Speed			100	ns
Input VSWR		1.8	2.0	:1
Output VSWR		1.8	2.0	:1
Input Max Power	25			dBm
DC Voltage	+5			V DC
DC Supply Current			50	mA
Impedance	50			Ohms

Mechanical Specifications:

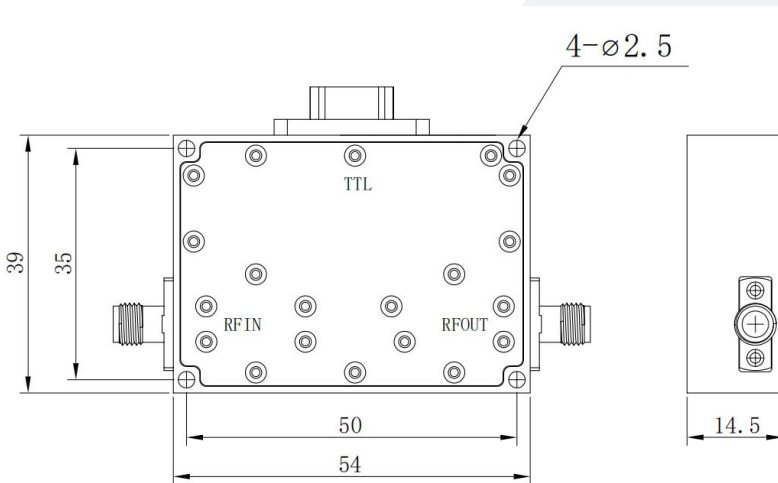
Description	Parameter	Units
Input /Output Connector	SMA Female/SMA Female	
DC control interface	J30J-9ZKP	
Size	54*39*14.5	mm
Weight	/	g

Absolute Maximum Ratings :

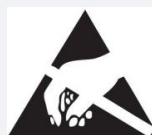
Description	Parameter	Units
Supply Bias Voltage	± 5 (+5%)	V
RF Input Power	25	dBm
ESD sensitivity (HBm)	Class 0, passed 150V	

Outline Drawing:

Unit:mm



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	63



OBSERVE PRECAUTIONS
ELECTROSTATIC SENSITIVE
DEVICES

DC Supply Conector(J30J-9ZKP):

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

Environmental Conditions:

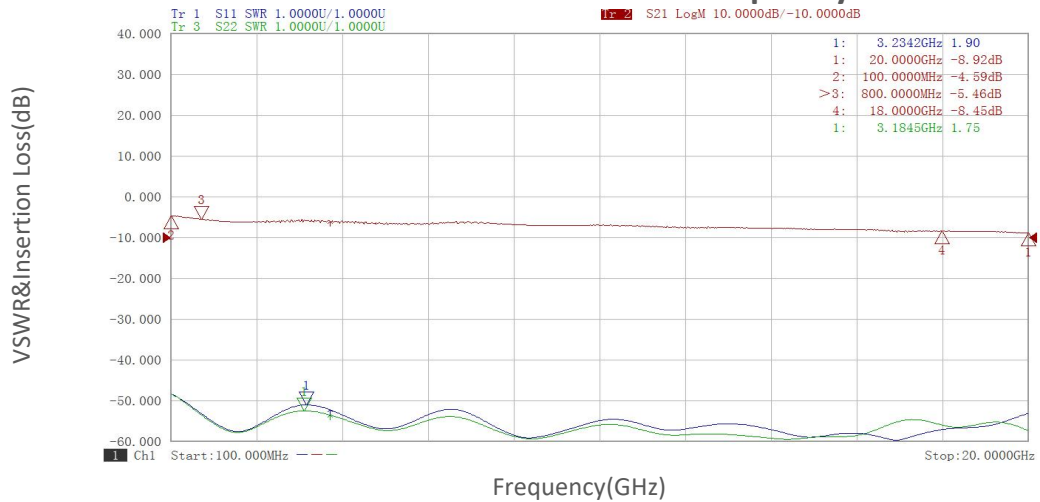
Parameter	Min	Typ	Max	Units
Operating Temperature	-10		+65	°C
Non-operating Temperature	-45		+85	°C
Relative humidity		95		%
Altitude	10,000			feet
Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis			
Shock(non operating)	20G for 11msc half sin wave,3 axis both directions			

Ordering Information:

Base Number	Description	Revision
TLDA0.8G18G-63-7	7-Bit Digital Digital Attenuator,0.8-18GHz,SMA Female	Rev.1.0

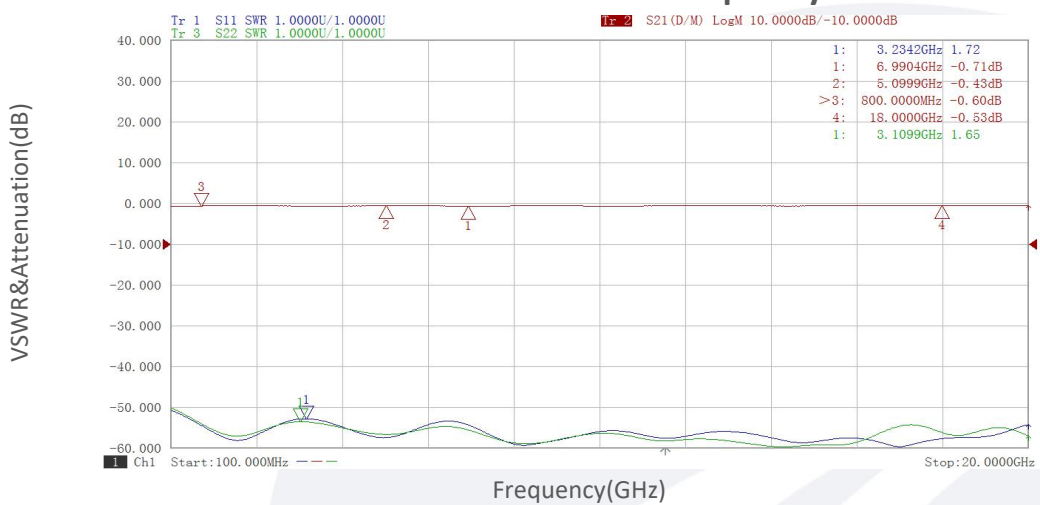
Typical Performance Data:

VSWR&Insertion Loss vs Frequency



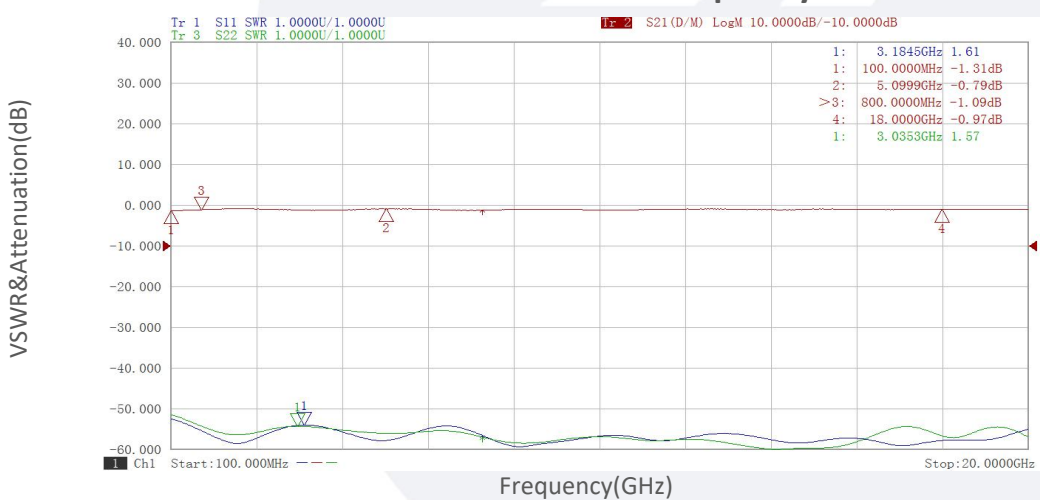
0.5dB:

VSWR&Attenuation vs Frequency



1dB:

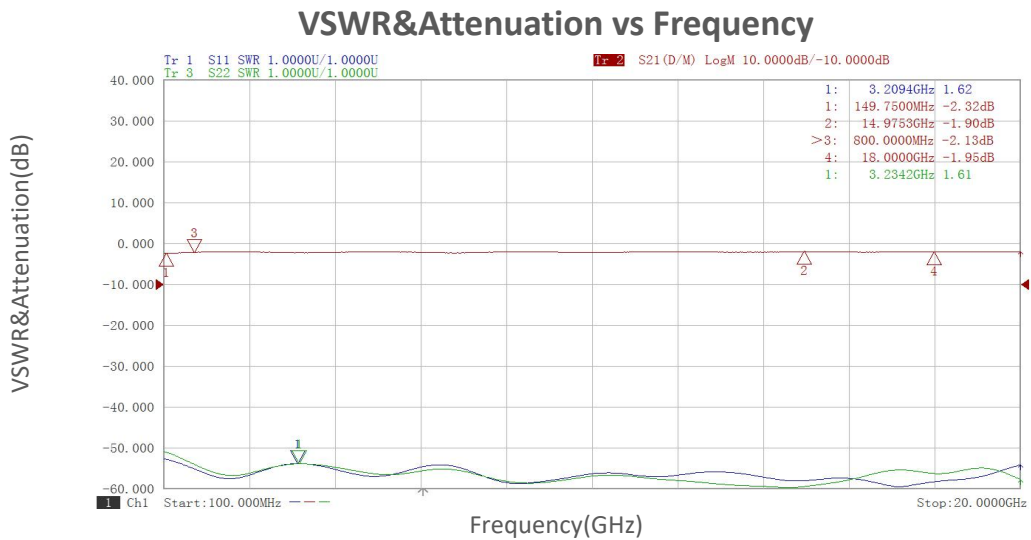
VSWR&Attenuation vs Frequency



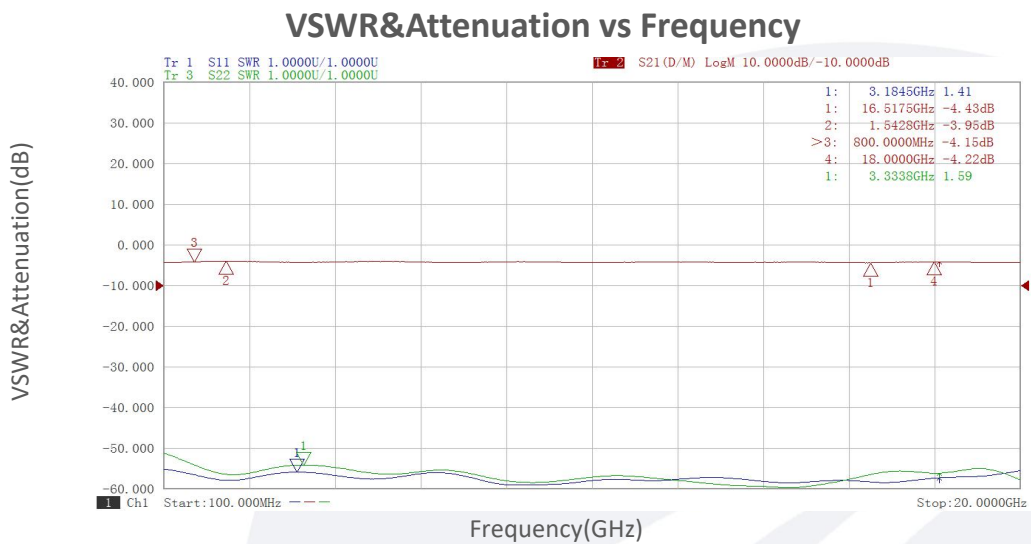
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

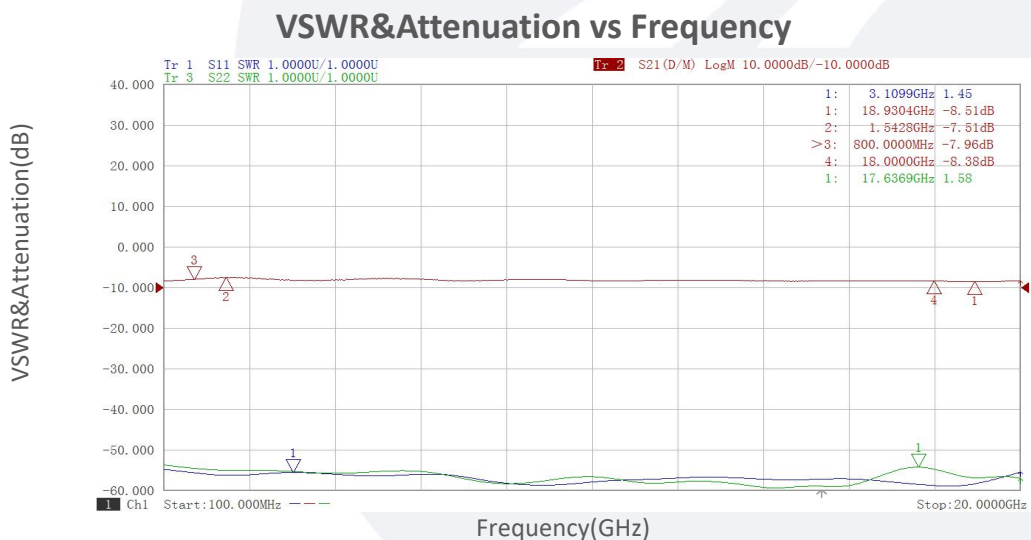
2dB:



4dB:



8dB:

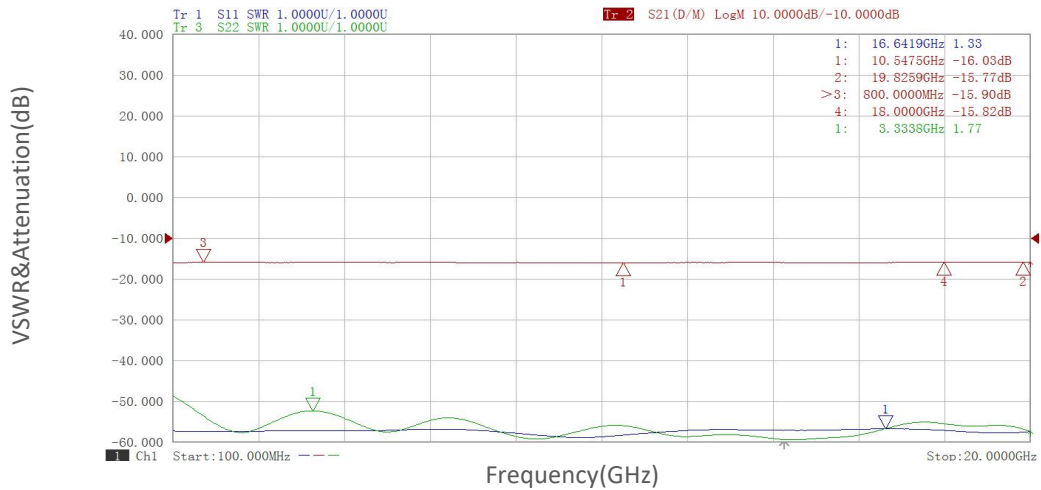


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Typical Performance Data:

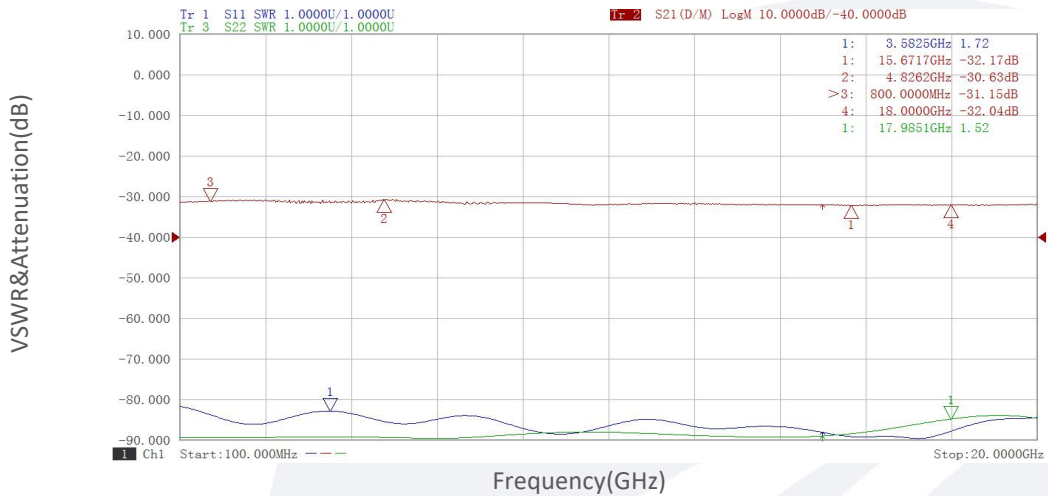
16dB:

VSWR&Attenuation vs Frequency



31.5dB:

VSWR&Attenuation vs Frequency



63dB:

VSWR&Attenuation vs Frequency



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