Suzhou Talent Microwave,Inc
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5-Bit Digital Attenuator

1dB LSB/5 Bit/ 0.1-40GHz

Model: TLDA0.1G40G-31-5

The TLDA0.1G40G-31-5 is an broadband digitally controlled electrical attenuator operating from 0.1 to 40 GHz. The attenuator exhibits 6 dB typical insertion loss and offers 31 dB nominal attenuation control range in 1 dB steps under a 5-bit digital control. The control speed of the attenuator is typically 100 ns. 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:

- Frequency range: 0.1-40GHz
- 5-Bit, 1 dB LSB, 31 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		6		dB
Attenuation Range		31		dB
Control Bit TTL		5		Bit
Attenuation Step		1		dB
Switch Speed		100		ns
Input VSWR		2.0		:1
Output VSWR		2.0		:1
Input Max Power		25		dBm
DC Voltage		+5		V DC
DC Supply Current		20		mA
Impedance		50		Ohms

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Mechanical Specifications:

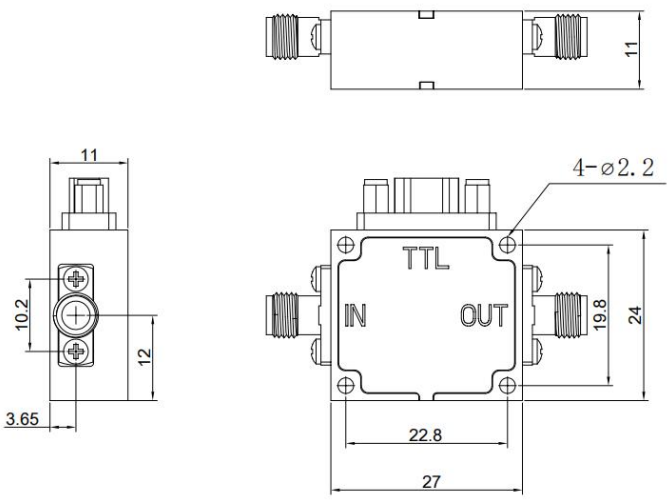
Description	Parameter	Units
Input /Output Connector	2.92mm Female/2.92mm Female	
DC control interface	J30J-9ZKP	
Size	27*24*11	mm

Absolute Maximum Ratings :

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

Outline Drawing:

Unit:mm



Regulatory Compliance:

Truth Table					
TTL Control Input					Signal Path State
C1	C2	C3	C4	C5	
0	0	0	0	0	Reference
1	0	0	0	0	1
0	1	0	0	0	2
0	0	1	0	0	4
0	0	0	1	0	8
0	0	0	0	1	16
1	1	1	1	1	31

ESD Protection: Strictly adhere to ESD precautions to prevent electrostatic damage.

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Supply Conector(J30J-15ZKP):

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

Environmental Conditions:

Parameter	Min	Typ	Max	Units
Operating Temperature	-10		+65	℃
Non-operating Temperature	-45		+85	℃
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-31-5	5-Bit Digital Digital Attenuator,0.1-40GHz,2.92mm Female	Rev.1.0

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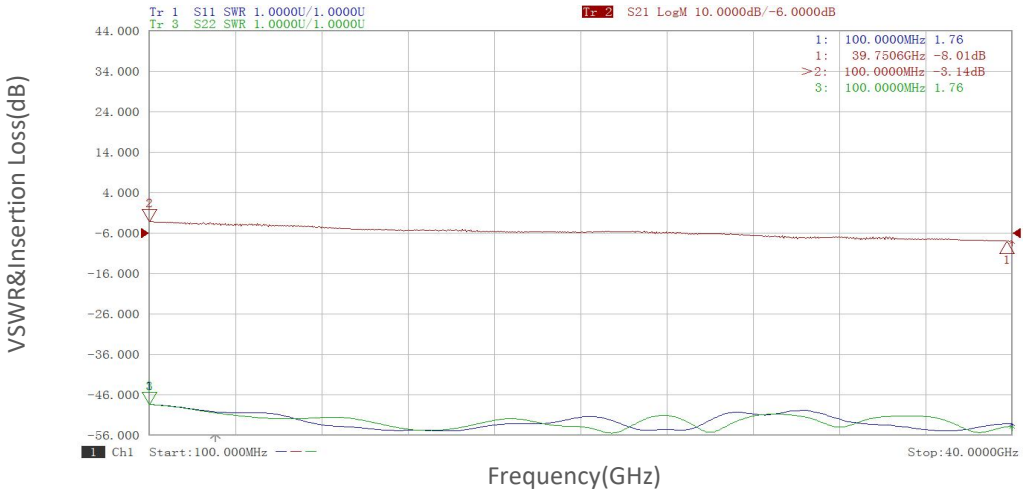
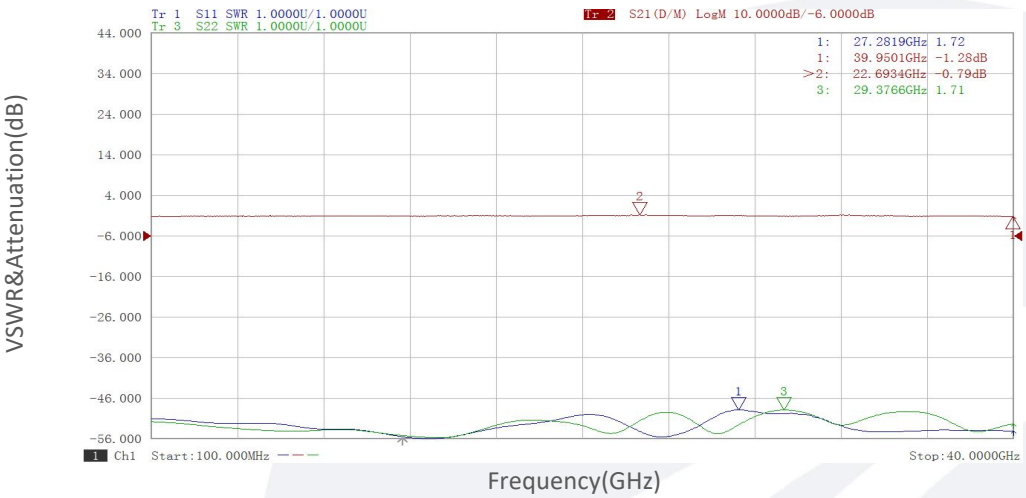
Typical Performance Data:

VSWR&Insertion Loss vs Frequency



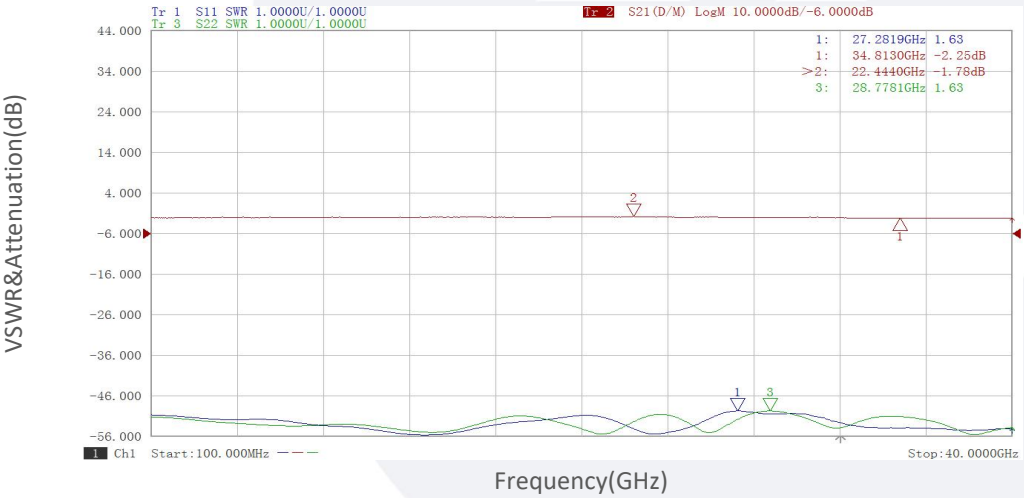
1dB:

VSWR&Attenuation vs Frequency



2dB:

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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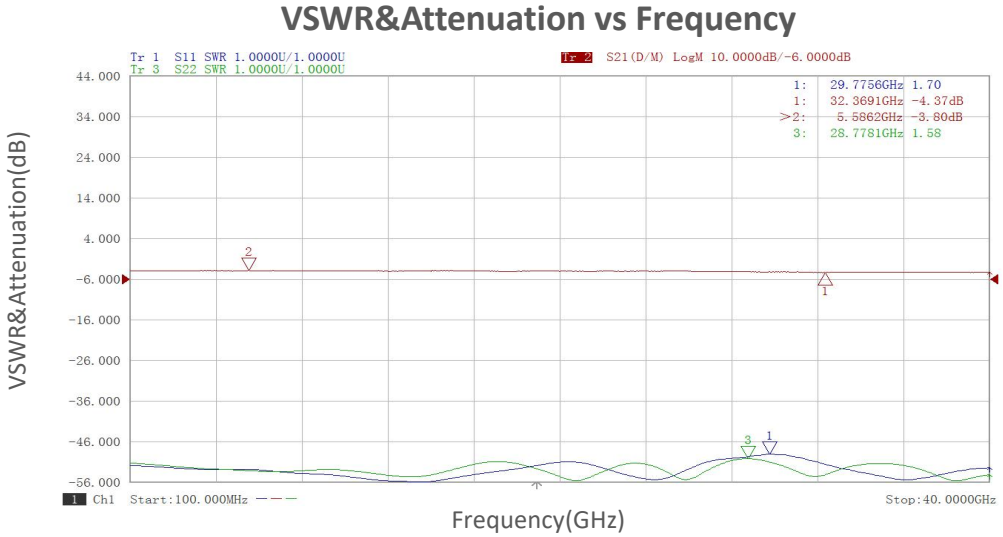
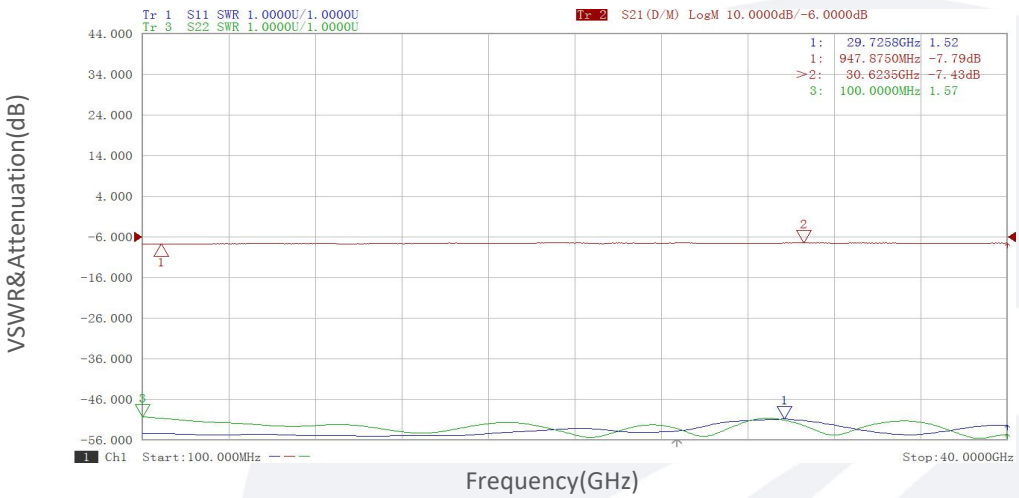
Typical Performance Data:

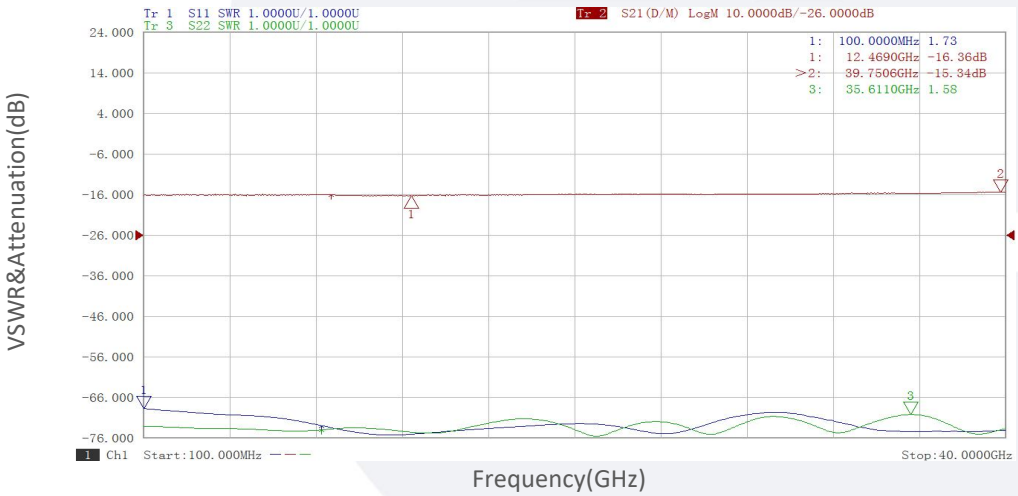
4dB:



8dB:



16dB:



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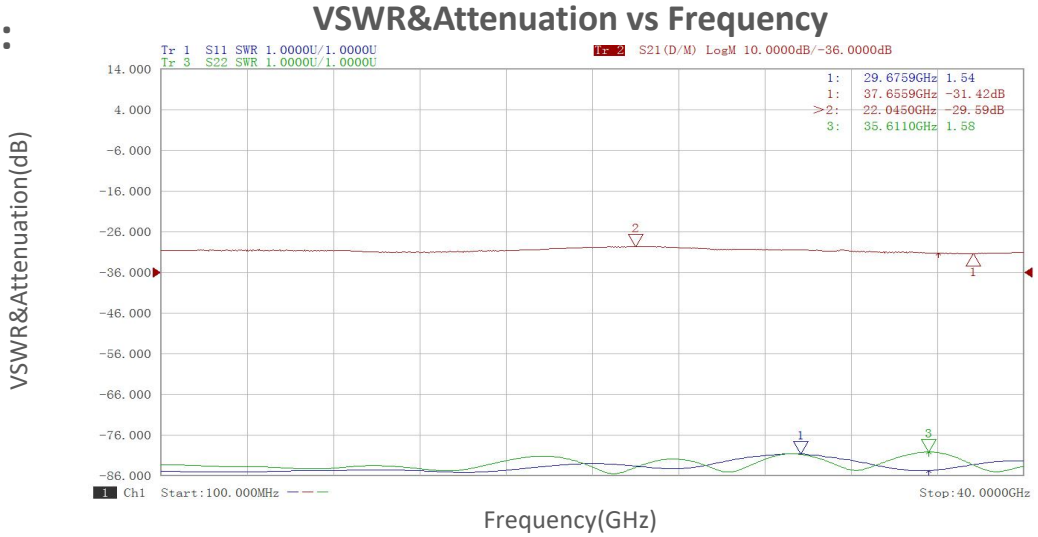
Typical Performance Data:

31dB:



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