

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

电气特性 Electrical Characteristics:

参数 Parameter	Min	Typ	Max	单位 Units
频率范围 Frequency range	0.1-40			GHz
插损 Insertion Loss		6		dB
衰减范围 Attenuation Range	31			dB
控制位数 Control Bit TTL	5			Bit
衰减步进 Attenuation Step	1			dB
切换速度 Switch Speed		100		ns
输入驻波 Input VSWR		2.0		:1
输出驻波 Output VSWR		2.0		:1
最大输入功率 Input Max Power	25			dBm
直流电压 DC Voltage	+5			V DC
直流电流 DC Supply Current		20		mA
阻抗 Impedance	50			Ohms

机械特性 Mechanical Specifications:

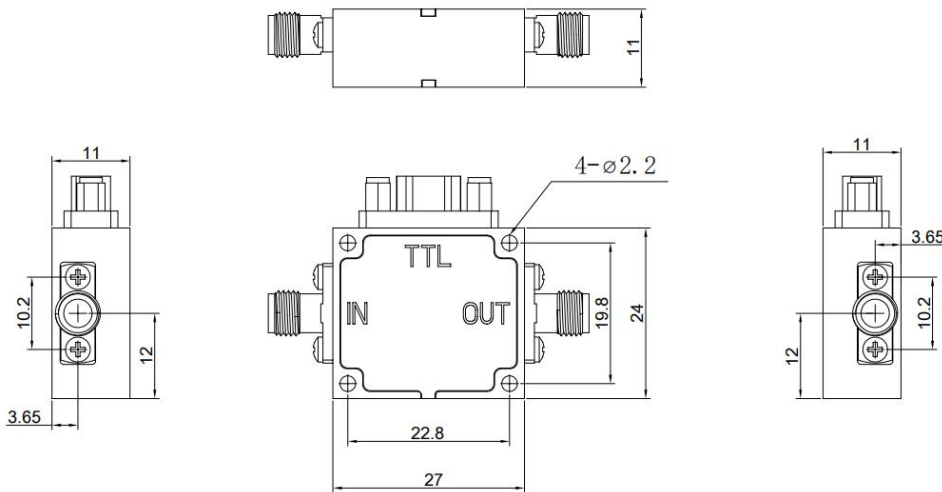
描述 Description	参数 Parameter	单位 Units
输入/输出接口 Input /Output Connector	2.92mm Female/2.92mm Female	
DC控制接口 DC control interface	J30J-9ZKP	
尺寸 Size	27*24*11	mm

绝对最大值 Absolute Maximum Ratings :

描述 Description	参数 Parameter	单位 Units
供电偏置电压 Supply Bias Voltage	+5 (±5%)	V
射频输入功率 RF Input Power	25	dBm
ESD灵敏度 ESD sensitivity (HBm)	Class 0, passed 150V	

外形图 Outline Drawing:

Unit:mm



真值表 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.

加电接口 Supply Conector(J30J-15ZKP):

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

温度环境 Environmental Conditions:

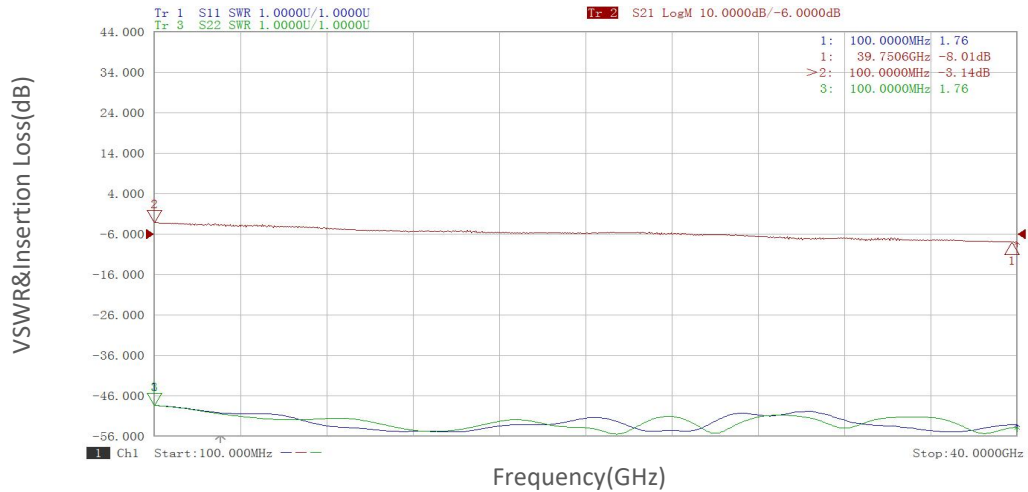
参数 Parameter	Min	Typ	Max	单位 Units
操作温度 Operating Temperature	-10		+65	℃
存储温度 Non-operating Temperature	-45		+85	℃
相对湿度 Relative humidity		95		%
海拔 Altitude	10,000			feet
震动 Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis			
冲击 Shock(non operating)	20G for 11msc half sin wave,3 axis both directions			

订货信息 Ordering Information:

标准型号 Base Number	描述 Description	版本号 Revision
TLDA0.1G40G-31-5	5-Bit Digital Digital Attenuator,0.1-40GHz,2.92mm Female	Rev.1.0

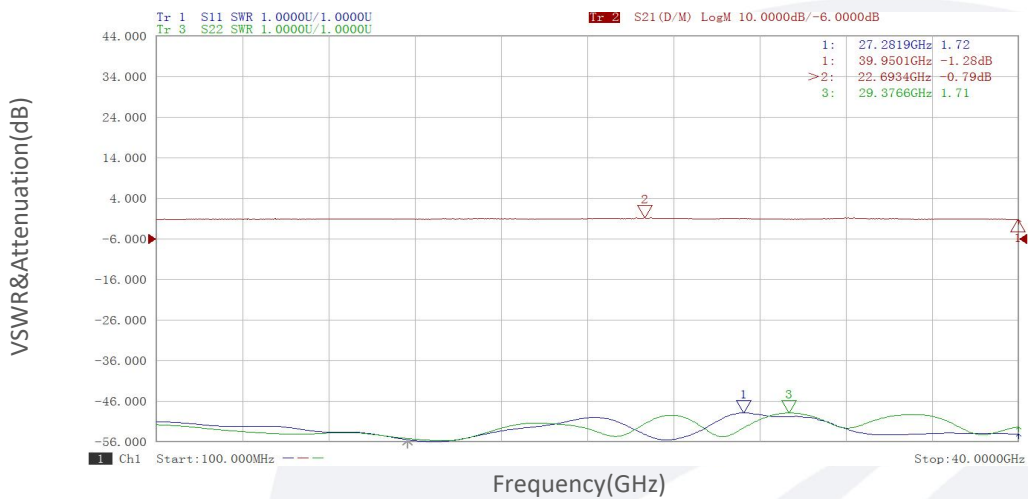
典型曲线 Typical Performance Data:

VSWR&Insertion Loss vs Frequency



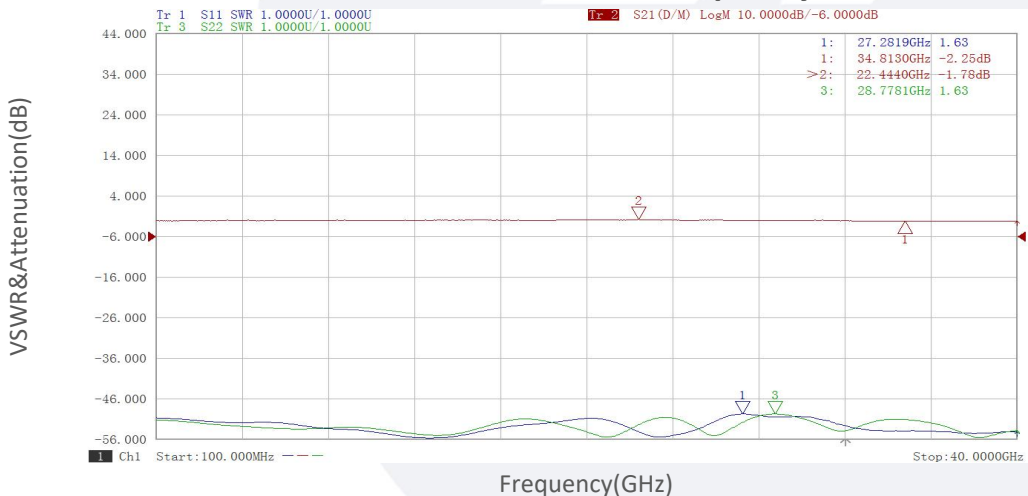
1dB:

VSWR&Attenuation vs Frequency



2dB:

VSWR&Attenuation vs Frequency

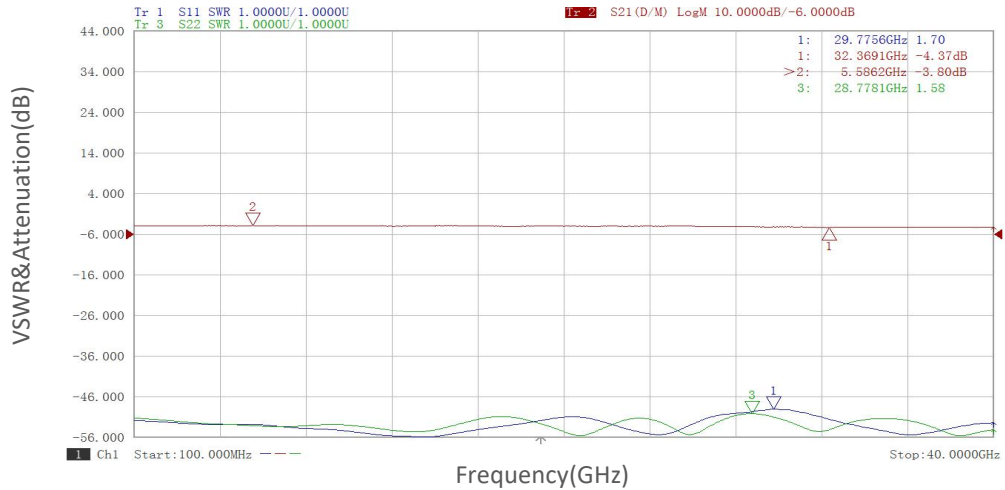


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

典型曲线 Typical Performance Data:

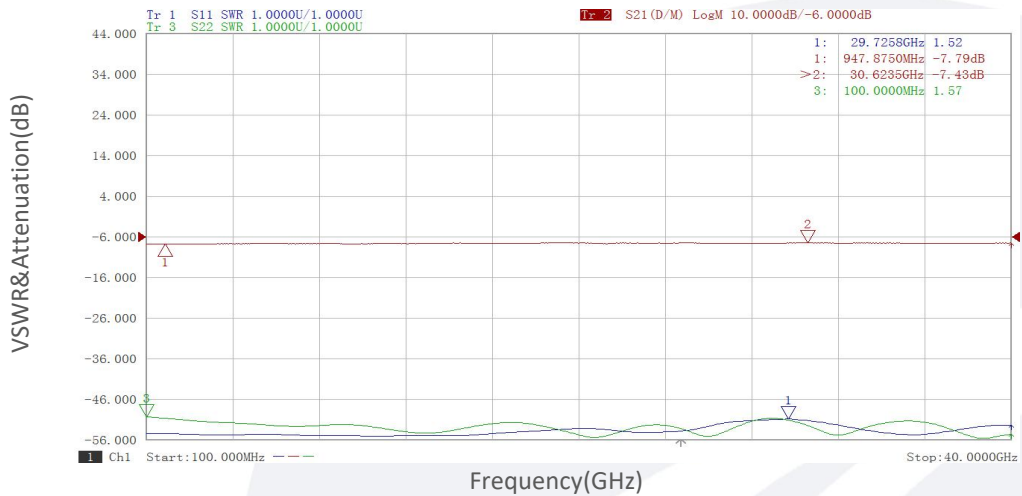
4dB:

VSWR&Attenuation vs Frequency



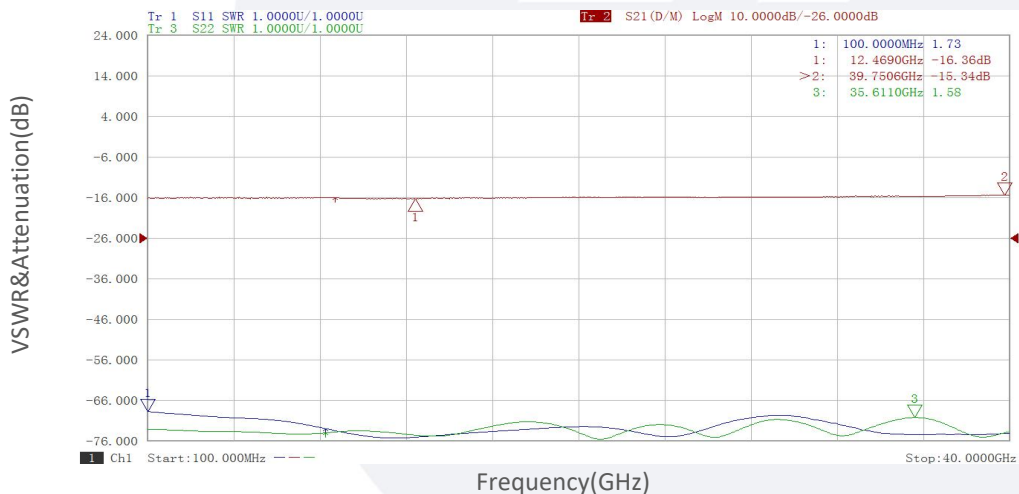
8dB:

VSWR&Attenuation vs Frequency



16dB:

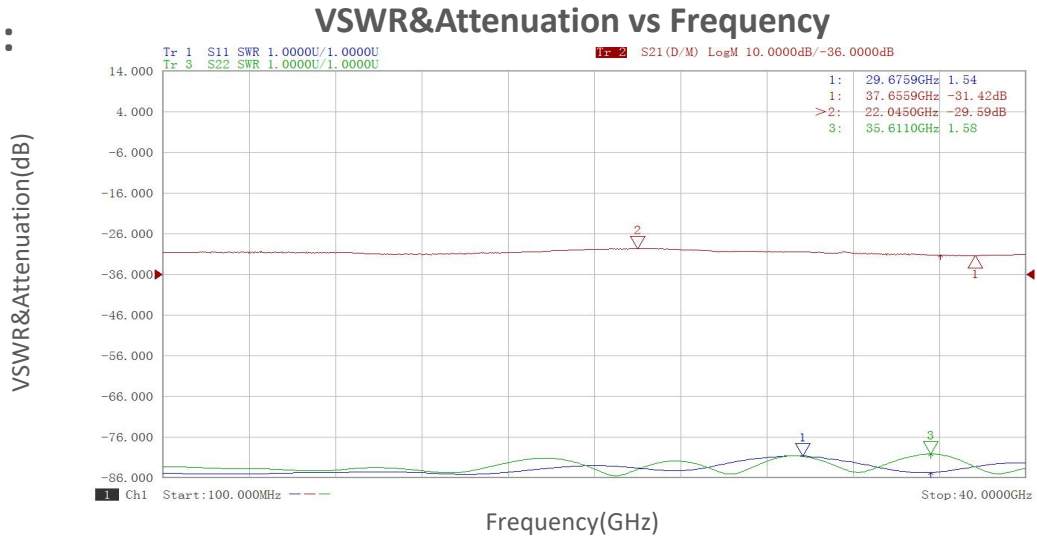
VSWR&Attenuation vs Frequency



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.

典型曲线 Typical Performance Data:

31dB:



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