

6-Bit Digital Attenuator

0.5dB LSB/6 Bit/0.1-18GHz

Model: TLDA0.1G18G-31.5-6

The TLDA0.1G18G-31.5-6 is an broadband digitally controlled electrical attenuator operating from 0.1 to 18 GHz. The attenuator exhibits 4 dB typical insertion loss and offers 31.5 dB nominal attenuation control range in 0.5 dB steps under a 6-bit digital control. The control speed of the attenuator is typically 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:

- Frequency range: 0.1-18GHz
- 6-Bit, 0.5 dB LSB, 31.5 dB Range
- Low Insertion Loss
- High Attenuator Accuracy

Applications:

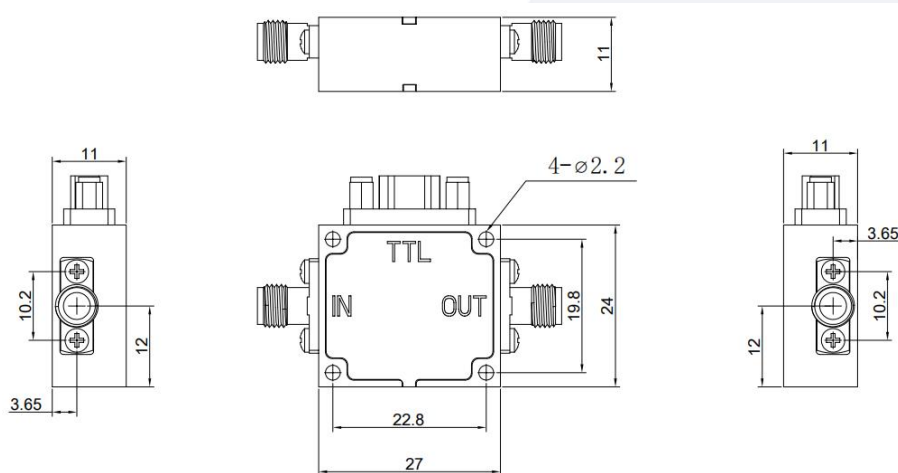
- Radar Systems
- Communication Systems
- Testing Equipment

电气特性 Electrical Characteristics:

参数 Parameter	Min	Typ	Max	单位 Units
频率范围 Frequency range	0.1		18	GHz
插损 Insertion Loss		4	5	dB
衰减范围 Attenuation Range	31.5			dB
控制位数 Control Bit TTL	6			Bit
衰减步进 Attenuation Step	0.5			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		30		mA
阻抗 Impedance	50			Ohms

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

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	

Unit:mm; Tolerance: ± 0.1 mm

真值表 Truth Table						
TTL Control Input						Signal Path State
C1	C2	C3	C4	C6	C6	
0	0	0	0	0	0	Reference
1	0	0	0	0	0	0.5
0	1	0	0	0	0	1
0	0	1	0	0	0	2
0	0	0	1	0	0	4
0	0	0	0	1	0	8
0	0	0	0	0	1	16
1	1	1	1	1	1	31.5



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

加电接口 Supply Conector(J30J-9ZKP):

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

温度环境 Environmental Conditions:

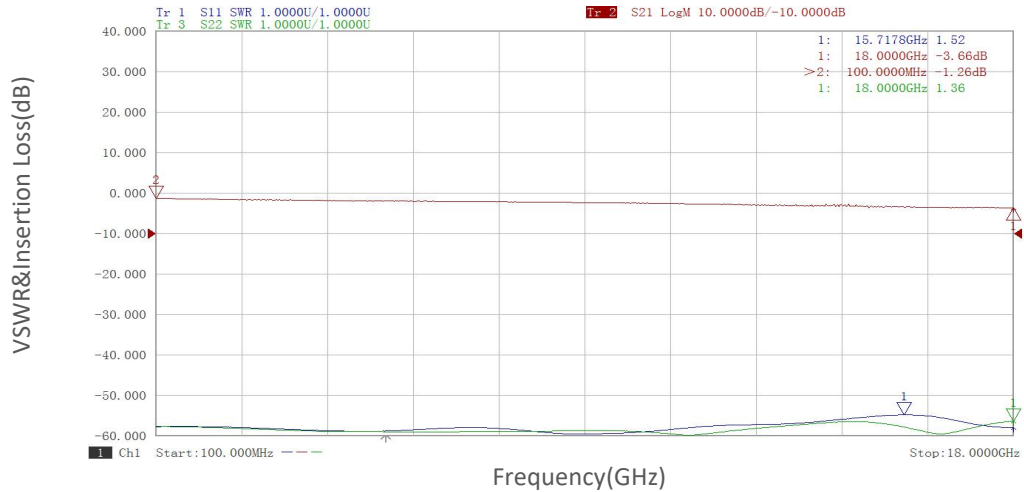
参数 Parameter	Min	Typ	Max	单位 Units
操作温度 Operating Temperature	-45		+85	°C
存储温度 Non-operating Temperature	-55		+125	°C
相对湿度 Relative humidity		95		%
海拔 Altitude	10,000			feet
震动 Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis			
冲击 Shock(non operating)	20G for 11msc 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
TLDA0.1G18G-31.5-6	6-Bit Digital Digital Attenuator,0.1-18GHz,SMA Female	Rev.1.0

典型曲线 Typical Performance Data:

VSWR&Insertion Loss vs Frequency



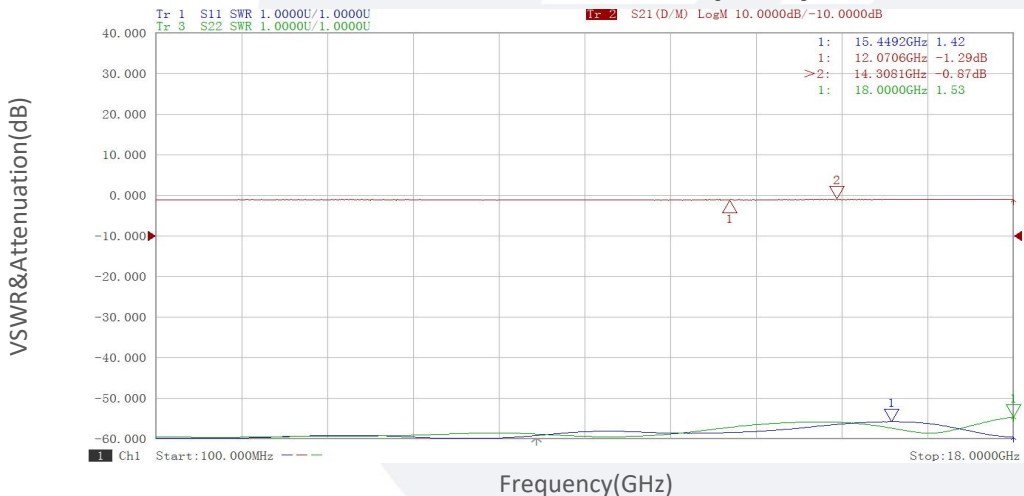
0.5dB:

VSWR&Attenuation vs Frequency



1dB:

VSWR&Attenuation vs Frequency

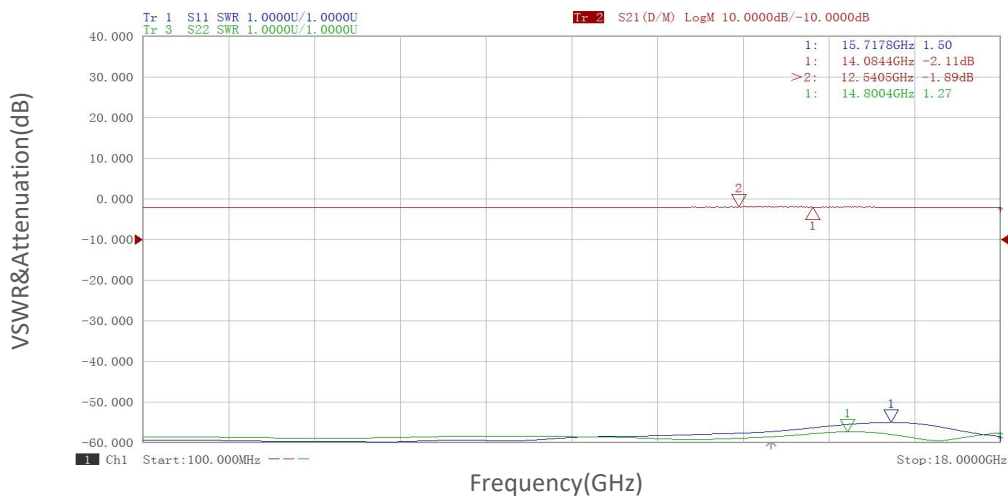


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

典型曲线 Typical Performance Data:

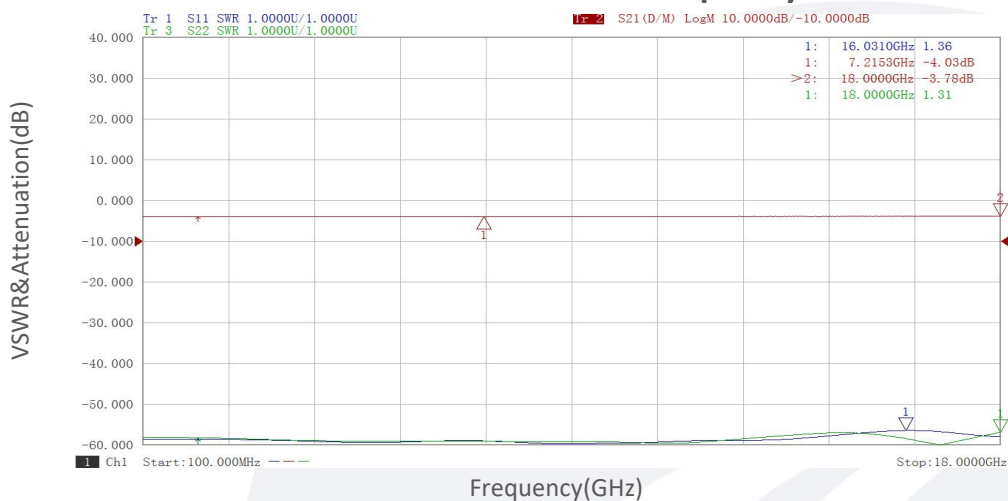
2dB:

VSWR&Attenuation vs Frequency



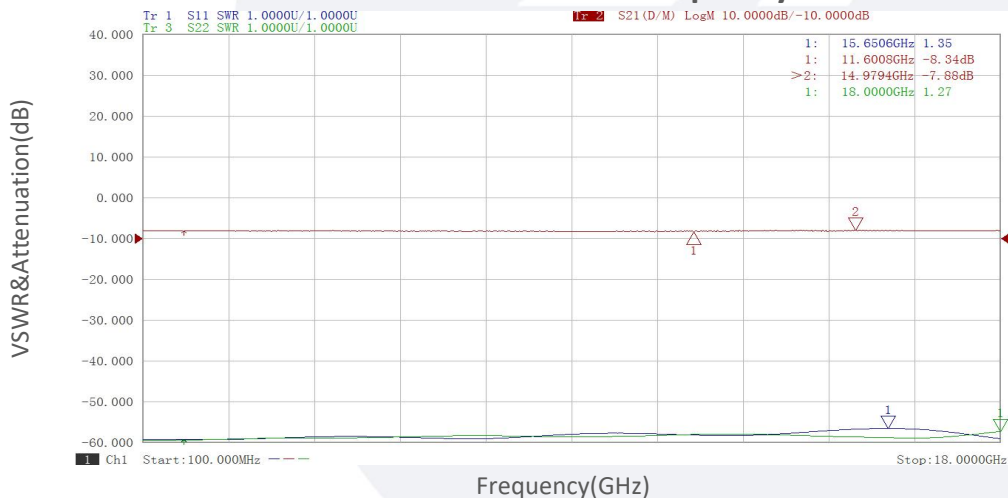
4dB:

VSWR&Attenuation vs Frequency



8dB:

VSWR&Attenuation vs Frequency

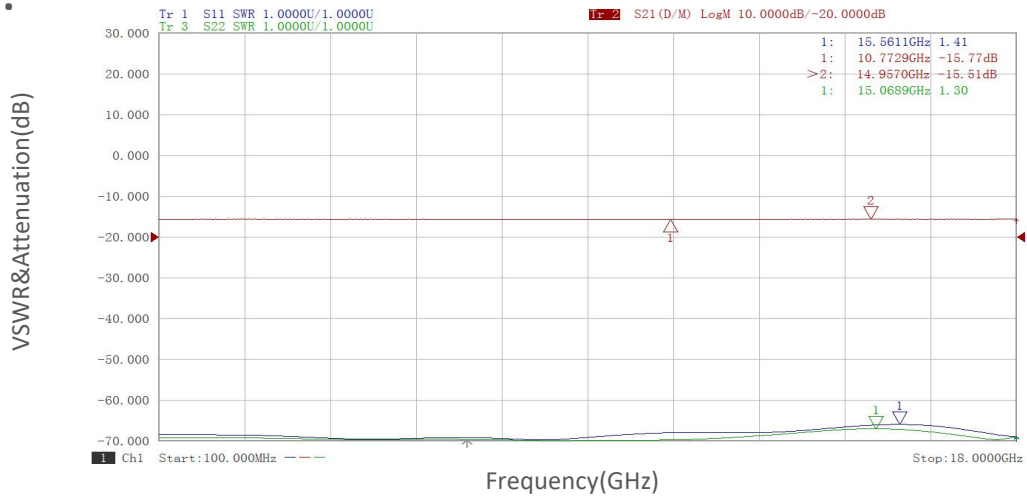


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典型曲线 Typical Performance Data:

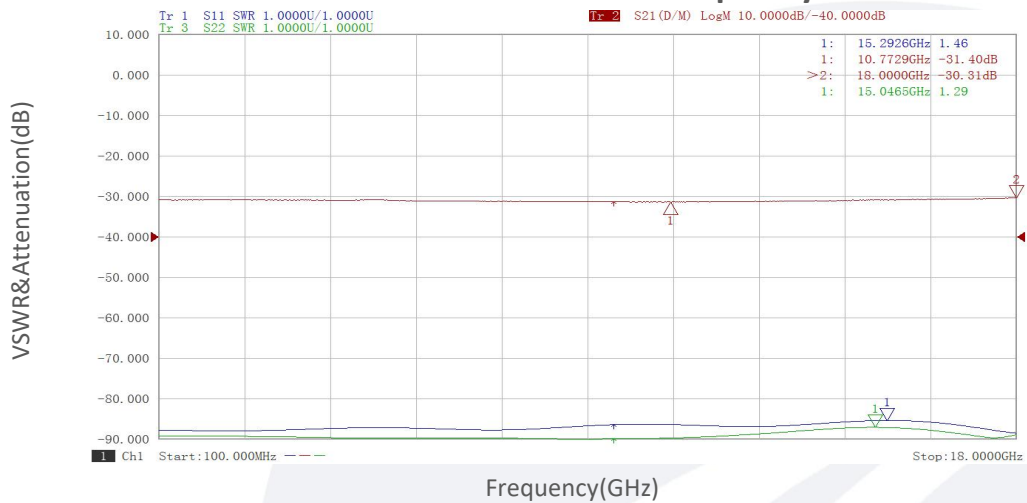
16dB:

VSWR&Attenuation vs Frequency



31.5dB:

VSWR&Attenuation vs Frequency



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