

6-Bit Digital Attenuator

1dB LSB/6 Bit/ 0.5-6GHz

TLDA0.5G6G-63-6

The TURDA0.5G6G-636 is an broadband digitally controlled electrical attenuator operating from 0.5 to 6 GHz. The attenuator exhibits 3.5 dB typical insertion loss and offers 63 dB nominal attenuation control range in 1 dB steps under a 6-bit digital control. The control speed of the attenuator is typically 1 us. The RF input and output ports are female SMA coax connectors, and a male J30J-9ZKP port is employed for providing the control signal and DC bias.

Features:

- Frequency range: 0.5-6GHz
- 6-Bit, 1 dB LSB, 63 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	0.5-6			GHz
插损 Insertion Loss		3.5	5	dB
衰减范围 Attenuation Range	63			dB
控制位数 Control Bit TTL	6			Bit
衰减步进 Attenuation Step	1			dB
切换速度 Switch Speed		1		us
输入驻波 Input VSWR		1.5	1.8	:1
输出驻波 Output VSWR		1.5	1.8	: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
逻辑:0 Logic:0	0-0.8			V
逻辑:1 Logic:1	3.3-5			V

机械特性 Mechanical Specifications:

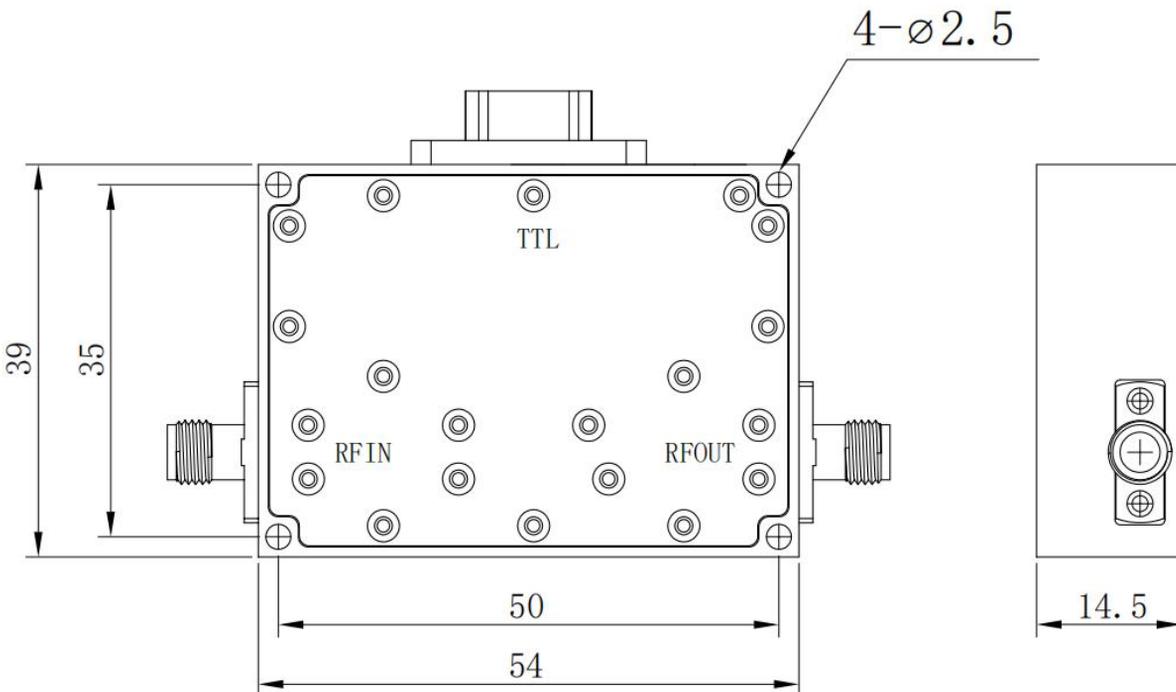
描述 Description	参数 Parameter	单位 Units
输入/输出接口 Input /Output Connector	SMA Female/SMA Female	
DC控制接口 DC control interface	J30J-9ZKP	
尺寸 Size	54*39*14.5	mm

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



加电接口和真值表 Supply Conector and Truth Table(J30J-9ZKP):

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

真值表 Truth Table						
TTL Control Input						Signal Path State
C1	C2	C3	C4	C5	C6	
0	0	0	0	0	0	Reference
1	0	0	0	0	0	1
0	1	0	0	0	0	2
0	0	1	0	0	0	4
0	0	0	1	0	0	8
0	0	0	0	1	0	16
0	0	0	0	0	1	32
1	1	1	1	1	1	63

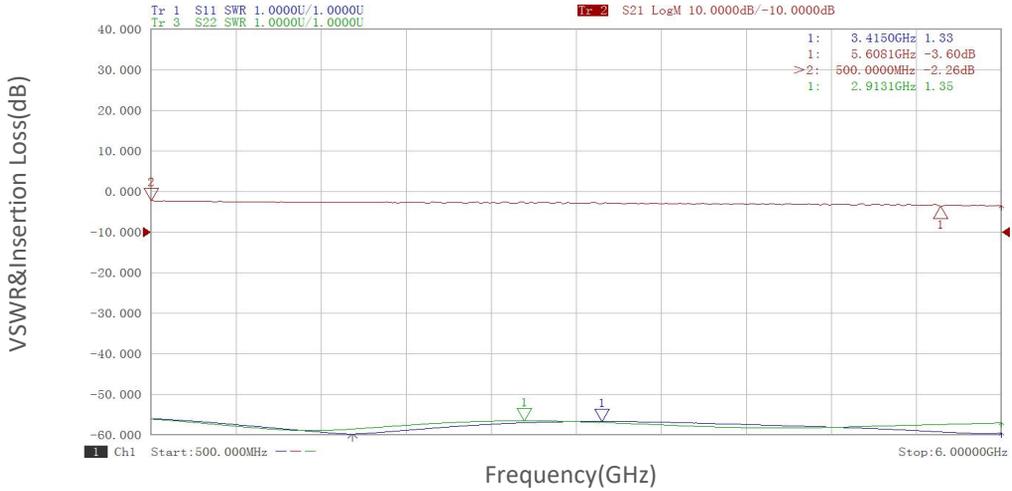
温度环境 Environmental Conditions:

参数 Parameter	Min	Typ	Max	单位 Units
操作温度 Operating Temperature	-10		+65	°C
存储温度 Non-operating Temperature	-45		+85	°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:

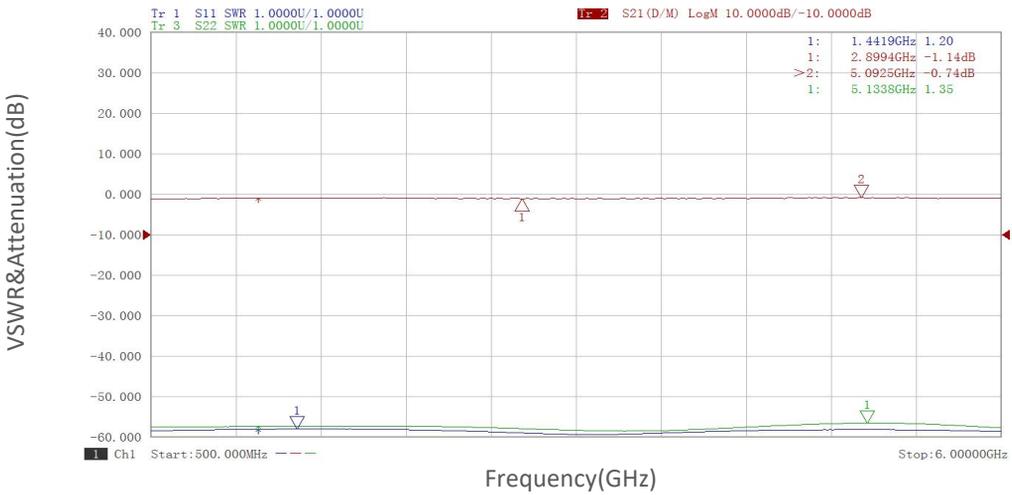
典型曲线 Typical Performance Data:

VSWR&Insertion Loss vs Frequency



1dB:

VSWR&Attenuation vs Frequency



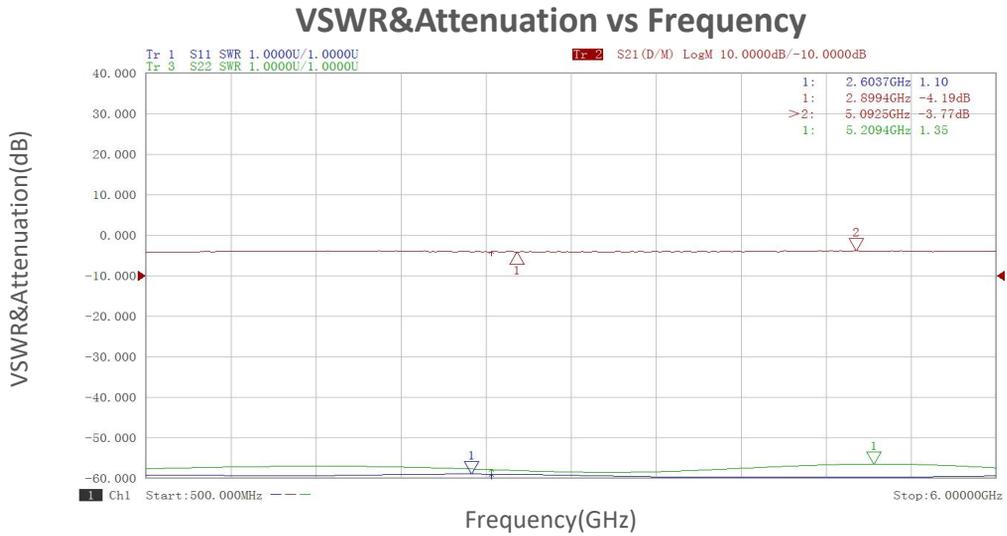
2dB:

VSWR&Attenuation vs Frequency

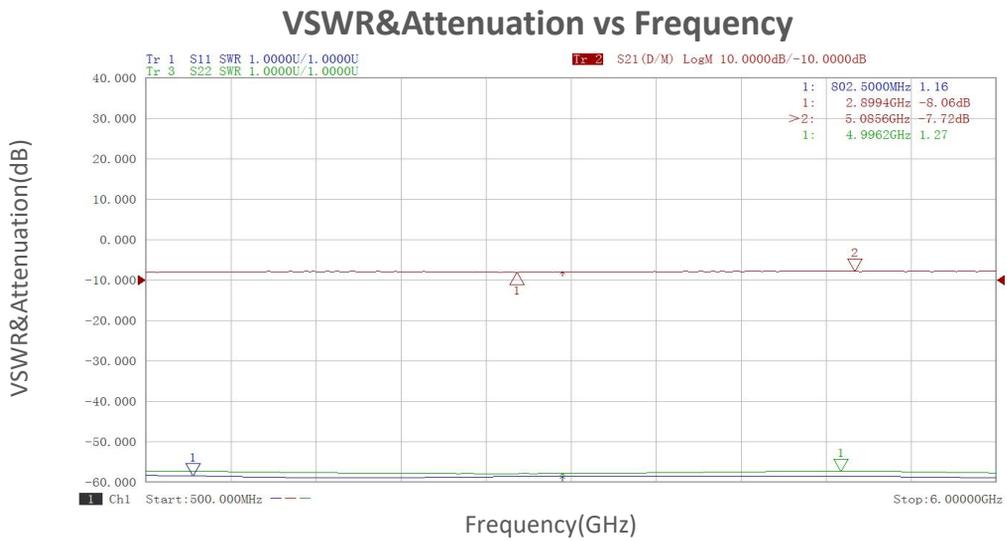
VSWR&Attenuation(dB)

典型曲线 Typical Performance Data:

4dB:



8dB:

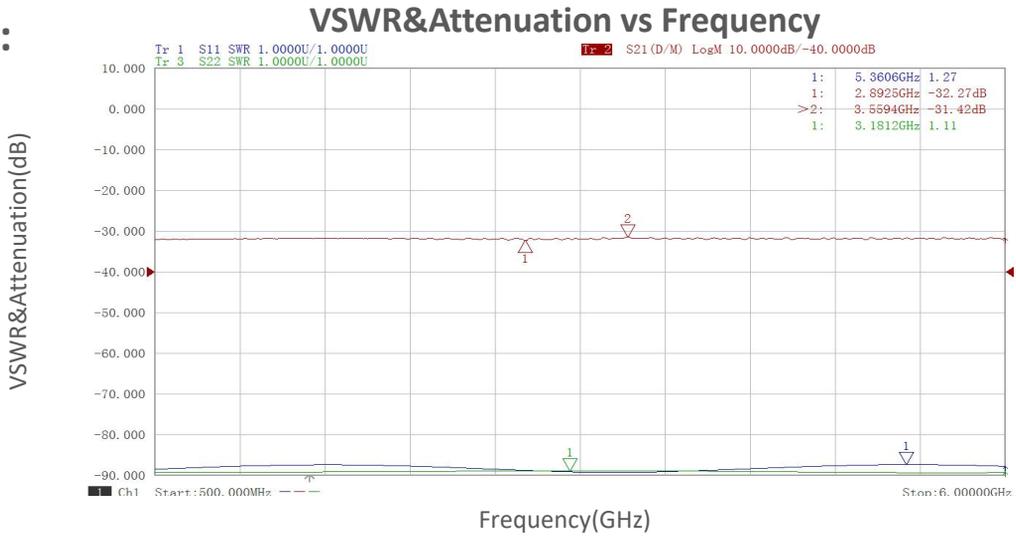


16dB:

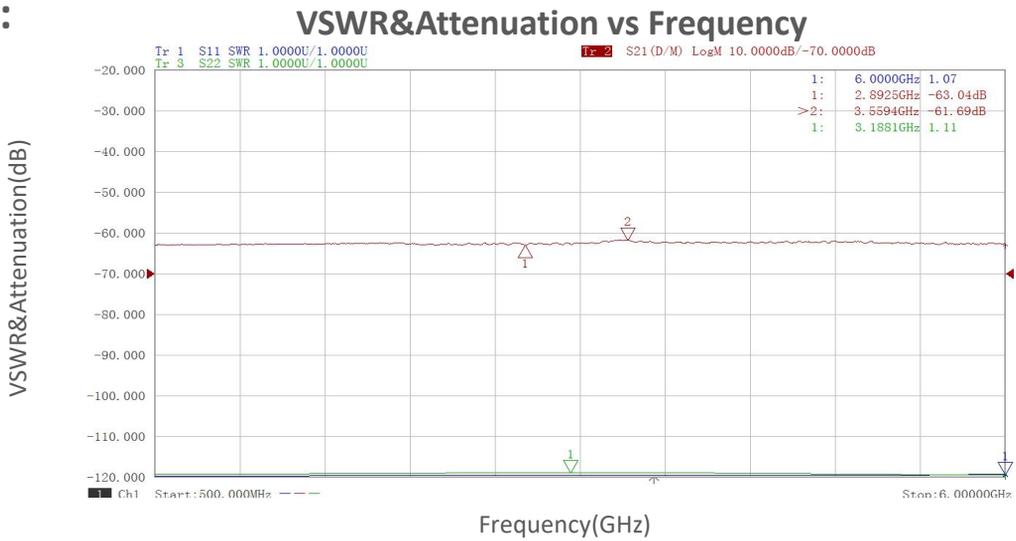


典型曲线 Typical Performance Data:

32dB:



63dB:



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.