



Absorptive Digital Control Attenuator 1-18GHz

Features

- Ultra Wide Band Operation 1-18GHz
- 1dB LSB Steps to 63dB
- Single Positive Control Line Per Bit
- Customization available upon request



Parameters	Min.	Typ.	Max.	Units
Frequency Range	1		18	GHz
Attenuation Range		63	68	dB
Attenuation Flatness: (Referenced to Insertion Loss)		±3.0		dB
Control Bits			6	Bit
Control Step size		1		dB
Insertion Loss		7.3	7.8	dB
Insertion Loss Temperature Coefficient		0.005		dB/ °C
Input VSWR (All Atten. States)		1.6	2.0	: 1
Output VSWR (All Atten. States)		1.6	2.0	: 1
Input 0.1 dB Compression Point (P0.1dB)		30		dBm
Input IP3		45		dBm
Switching Speed		100		ns
Weight		0.9 Max.		ounces
Impedance		50		Ω
Bias Current (+5V/-5V)		130/130 Max.		mA
Input / Output Connectors		SMA - Female		
Interface and Control Connector		MICRO-D9(Female)		
Finish		Gold Plated		
Material		Aluminum		
Sealing		Hermetically Sealed (optional)		



Absolute Maximum Ratings

Biasing	+5V±10%/-5V±10% @25°C
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Environmental Specifications

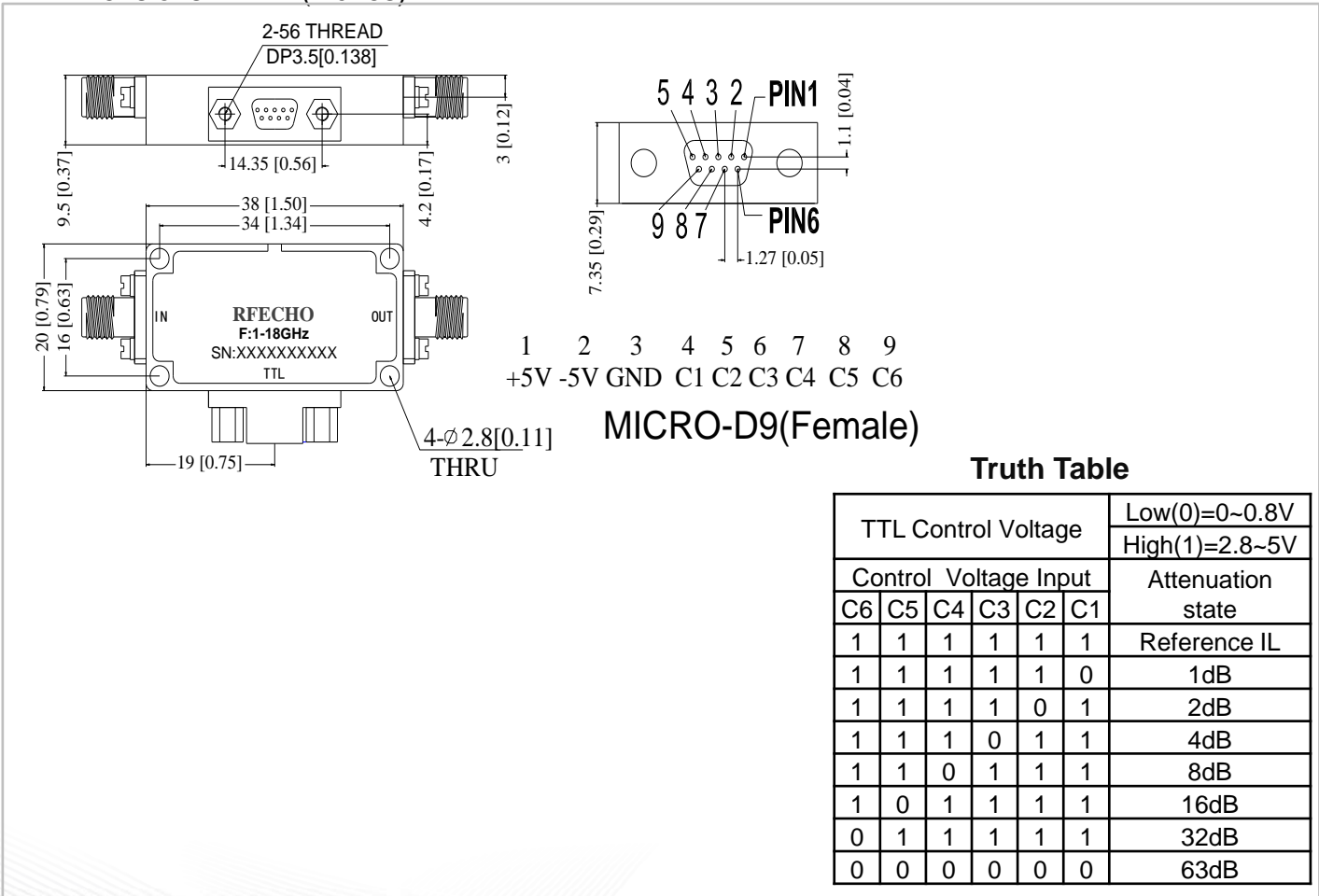
Operational Temperature	-40°C~+85°C
Storage Temperature	-50°C~+105°C
Altitude	30,000 ft. (Epoxy Sealed Controlled environment)
	60,000 ft. 1.0psi min (Hermetically Sealed Un-controlled environment) (Optional)
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35°C, 95%RH at 40°C
Shock	20G for 11msec half sine wave, 3 axis both directions

Ordering Information

Part No.	Description
DBDA0601001800B	1-18GHz Digital Control Attenuator

Outline Drawing:

All Dimensions in mm (inches)

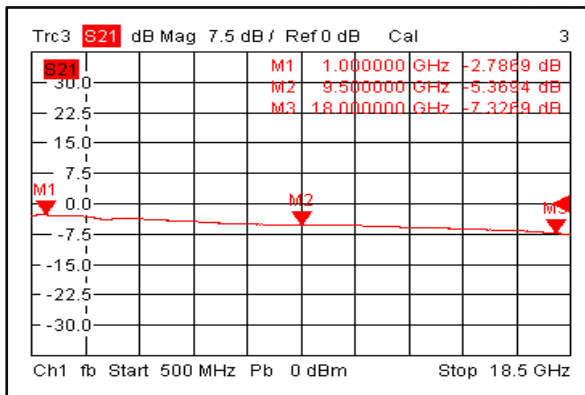


Truth Table

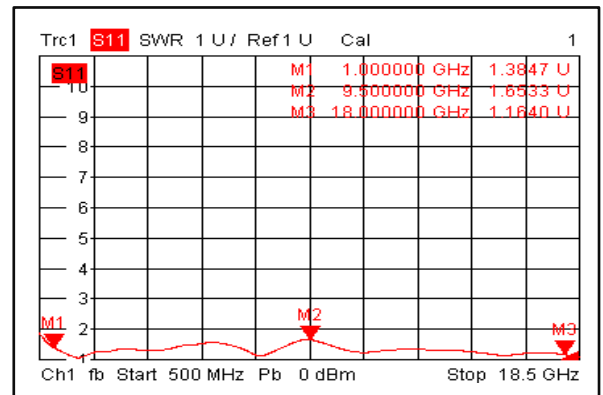
TTL Control Voltage						Low(0)=0~0.8V
						High(1)=2.8~5V
Control Voltage Input						Attenuation state
C6	C5	C4	C3	C2	C1	
1	1	1	1	1	1	Reference IL
1	1	1	1	1	0	1dB
1	1	1	1	0	1	2dB
1	1	1	0	1	1	4dB
1	1	0	1	1	1	8dB
1	0	1	1	1	1	16dB
0	1	1	1	1	1	32dB
0	0	0	0	0	0	63dB



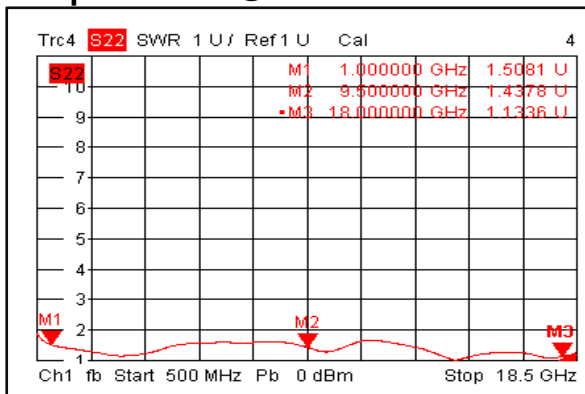
Insertion Loss @+25°C



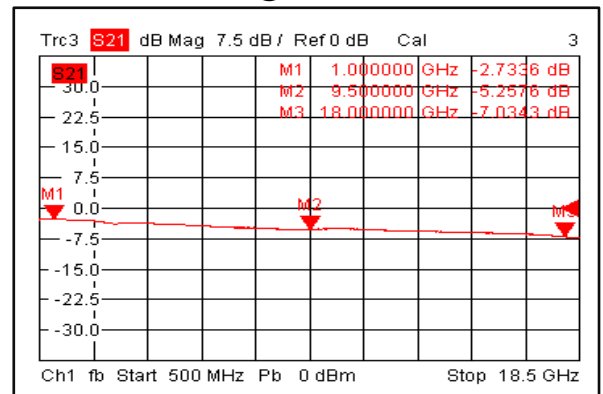
Input VSWR @+25°C



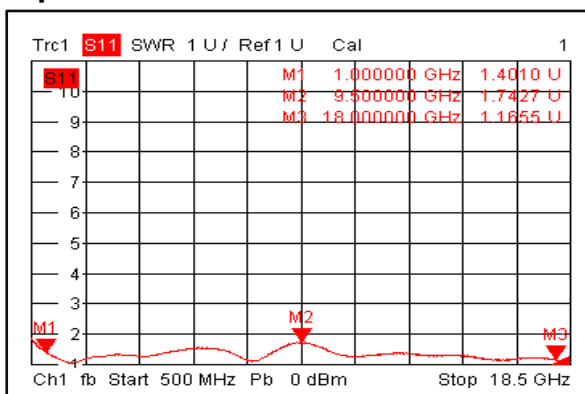
Output VSWR @+25°C



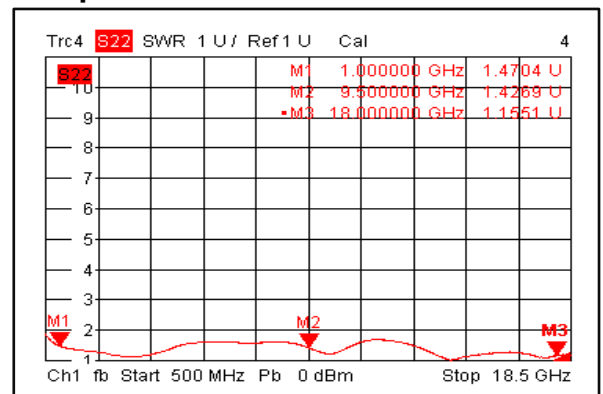
Insertion Loss @-40°C



Input VSWR @-40°C

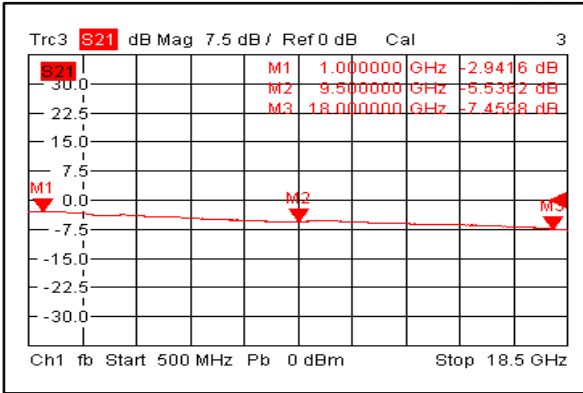


Output VSWR @-40°C

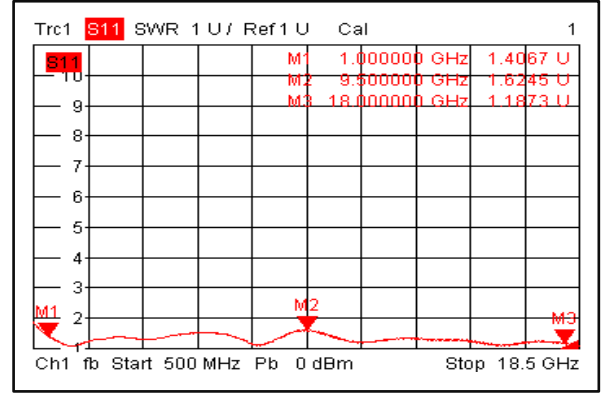




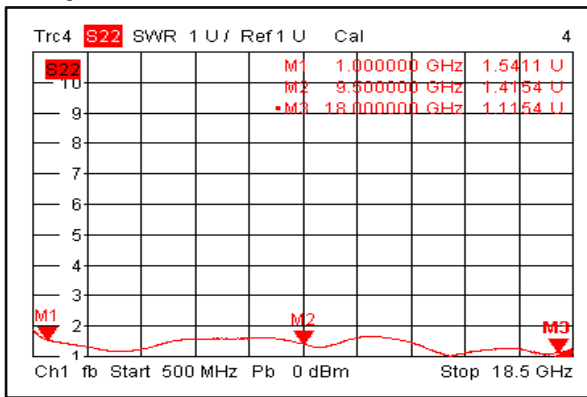
Insertion Loss @+85°C



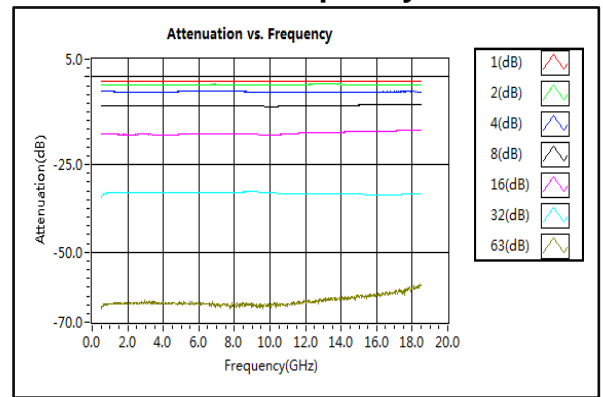
Input VSWR @+85°C



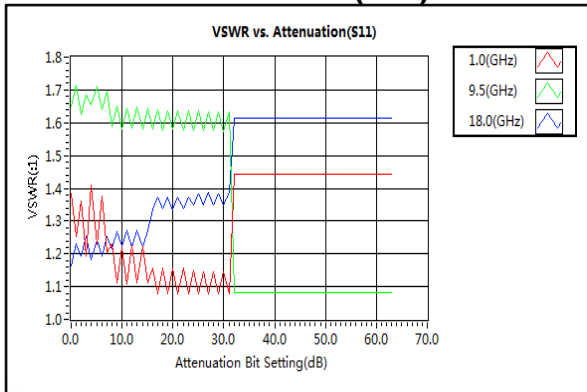
Output VSWR @+85°C



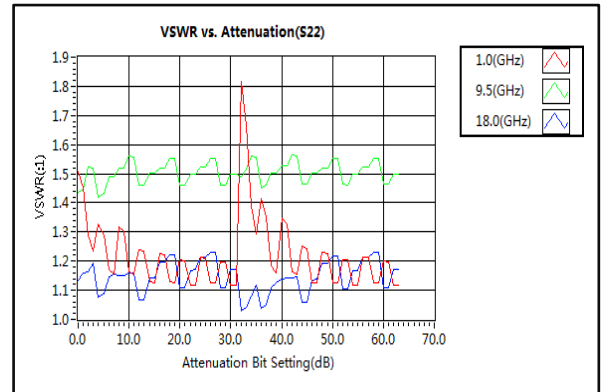
Attenuation vs. Frequency



VSWR vs. Attenuation(S11)

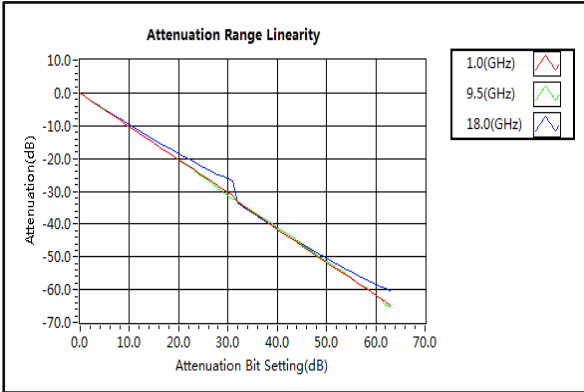


VSWR vs. Attenuation(S22)

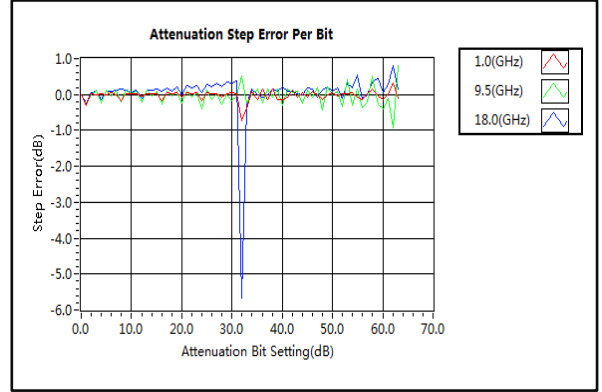




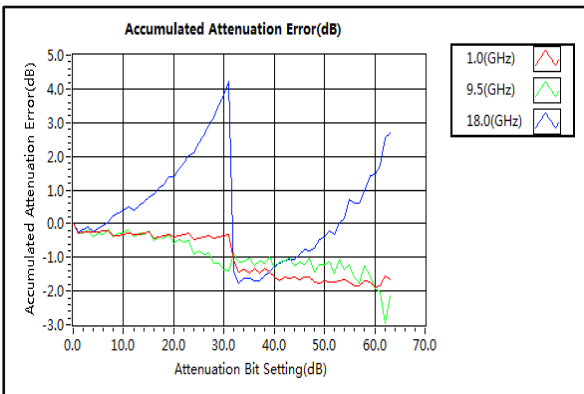
Attenuation Range Linearity



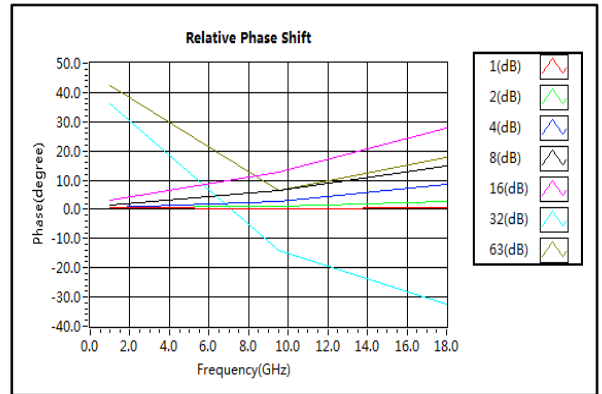
Attenuation Step Error Per Bit (dB)



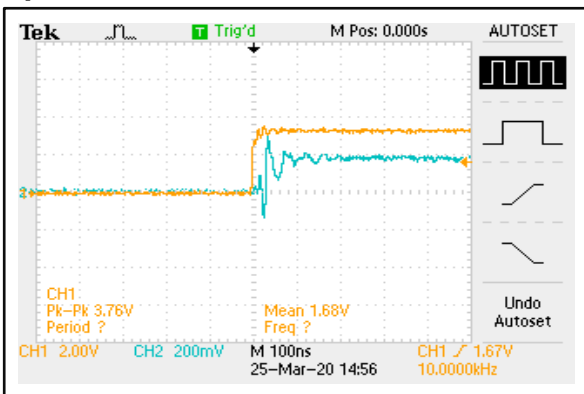
Accumulated Attenuation Error (dB)



Relative Phase Shift



Speed



Speed

