



Absorptive Digital Control Attenuator 4-18GHz



Features

- Wide Band Operation 4-18GHz
- 0.25dB LSB Steps to 64dB
- Single Positive Control Line Per Bit
- Customization available upon request

Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	4-12		12-18				GHz
Attenuation Range			64			64	dB
Attenuation Flatness: (Referenced to Insertion Loss)		±1.5	±3		±1.5	±3	dB
Control Bits			8			8	Bit
Control Step size		0.25			0.25		dB
Insertion Loss		5.5	7		7.5	8.5	dB
Insertion Loss Temperature Coefficient		0.01			0.01		dB/ °C
Input VSWR(All Atten. States)		1.5	1.8		1.5	2	: 1
Output VSWR (All Atten. States)		1.5	1.8		1.5	2	: 1
Input 0.1 dB Compression Point (P0.1dB)		25			25		dBm
Input IP3		50			50		dBm
Switching Speed		100	150		100	150	ns
Weight	1.41						ounces
Impedance	50						Ω
Bias Current (+5V/-5V)	140/140						mA
Input /Output Connectors	SMA-Female						
Interface and control connertor	MICRO-D15(Female)						
Finish	Gold Plated						
Material	Aluminum						
Sealing	Hermetically Sealed (optional)						



Absolute Maximum Ratings

Biassing	+5V±10%/-5V±10%
TTL Control Voltage	0~0.8V/2~5V
RF Input power	+27dBm

Ordering Information

Part No.	Description
DBDA0804001800B	4-18GHz Digital Control Attenuator

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 Uncontrolled 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

Outline Drawing:

All Dimensions in mm (inches)

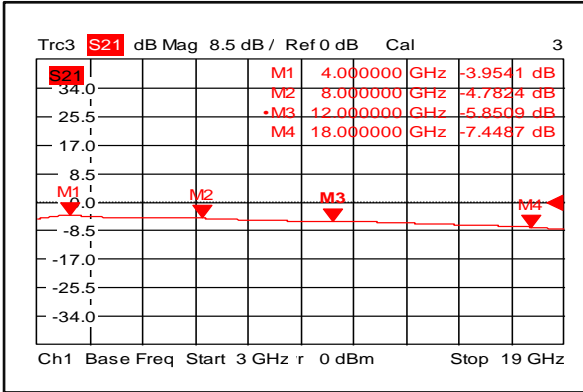
MICRO-D15(Female)

TruthTable

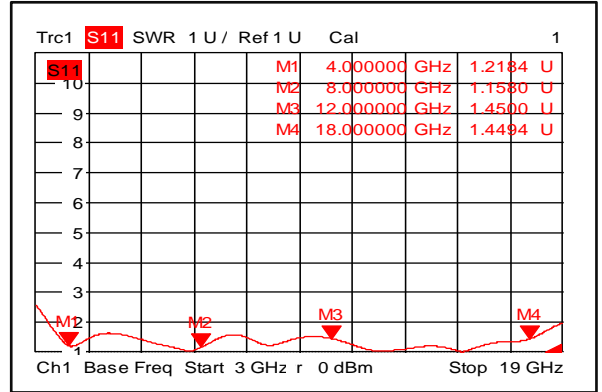
Control Voltage Input								Attenuation state
C8	C7	C6	C5	C4	C3	C2	C1	
1	1	1	1	1	1	1	1	Reference IL
1	1	1	1	1	1	1	0	0.25dB
1	1	1	1	1	1	0	1	0.5dB
1	1	1	1	1	0	1	1	1dB
1	1	1	1	0	1	1	1	2dB
1	1	1	0	1	1	1	1	4dB
1	1	0	1	1	1	1	1	8dB
1	0	1	1	1	1	1	1	16dB
0	1	1	1	1	1	1	1	32dB
0	0	0	0	0	0	0	0	64dB



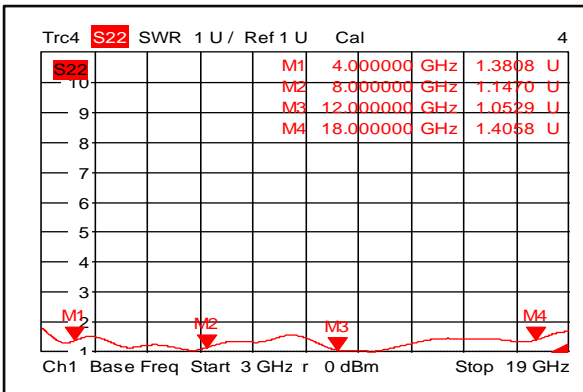
Insertion Loss @+25°C



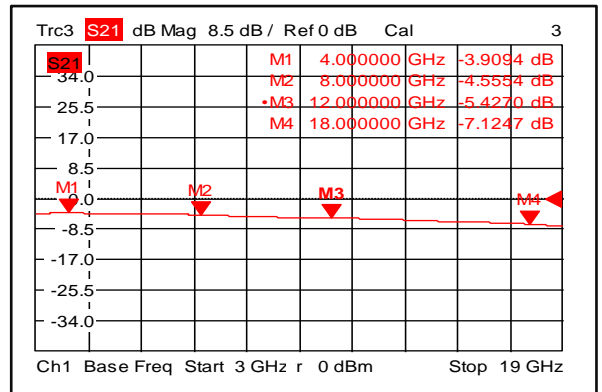
Input VSWR @+25°C



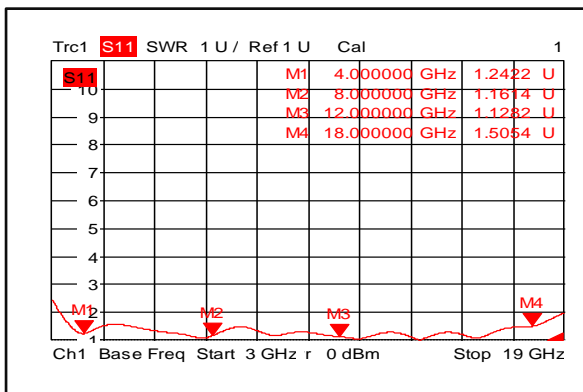
Output VSWR @+25°C



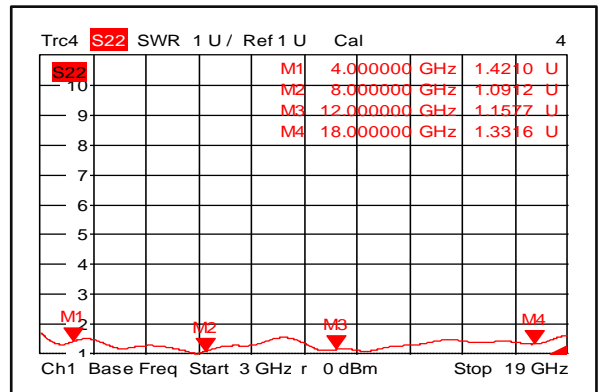
Insertion Loss @-40°C



Input VSWR @-40°C

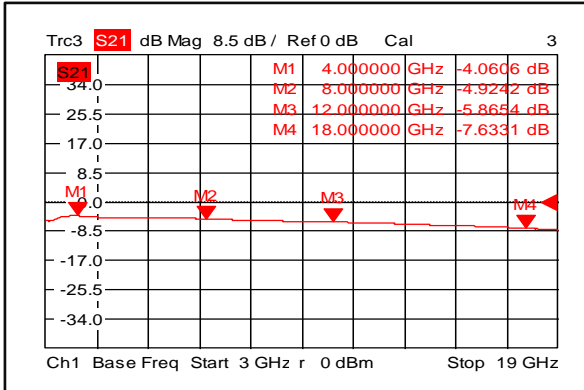


Output VSWR @-40°C

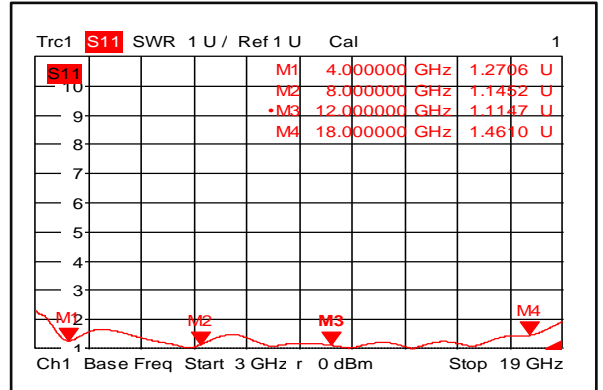




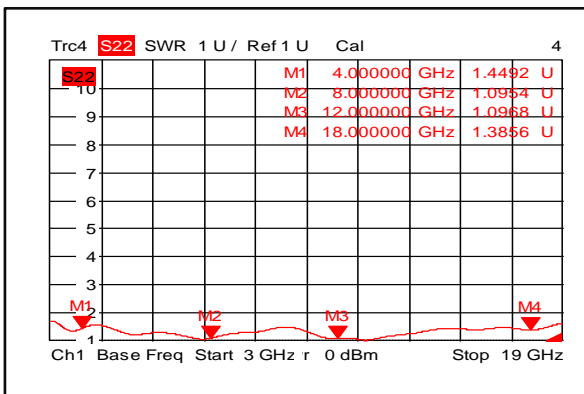
Insertion Loss @+85°C



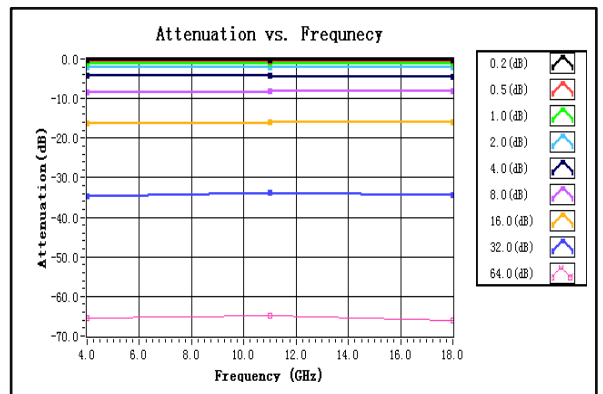
Input VSWR @+85°C



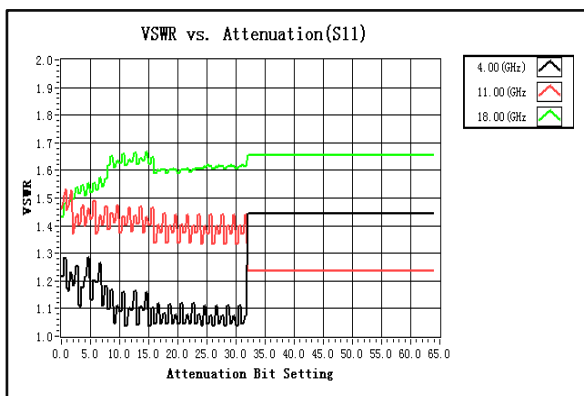
Output VSWR @+85°C



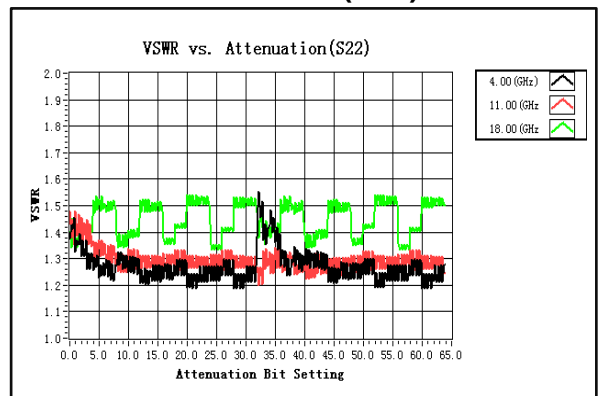
Attenuation vs. Frequency



VSWR vs.Attenuation(S11)

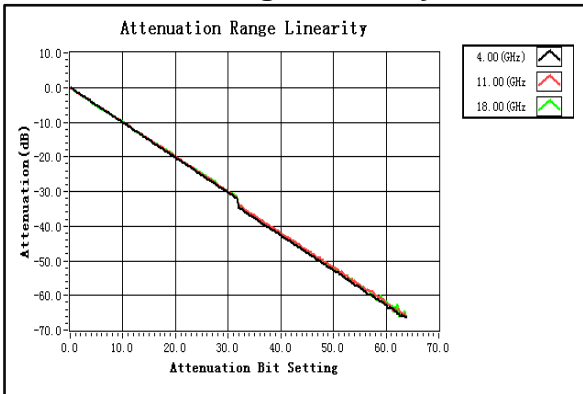


VSWR vs.Attenuation(S22)

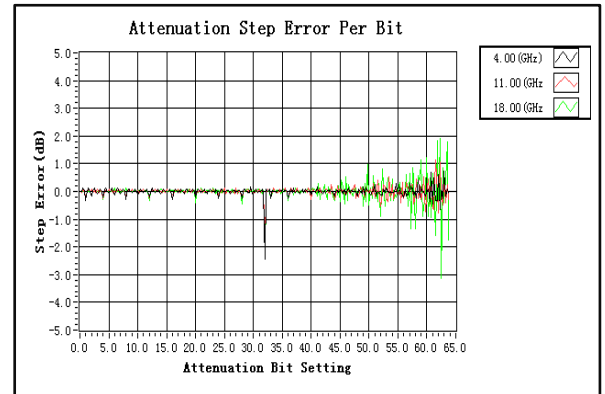




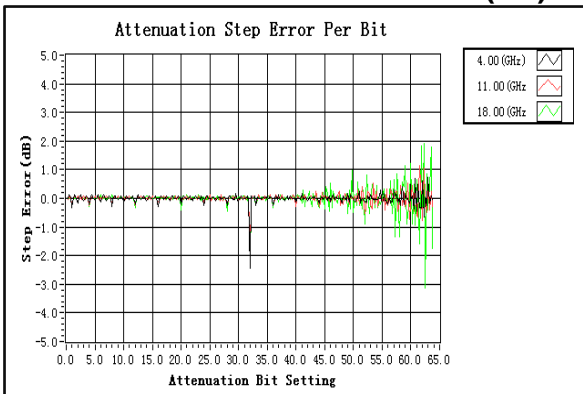
Attenuation Range Linearity



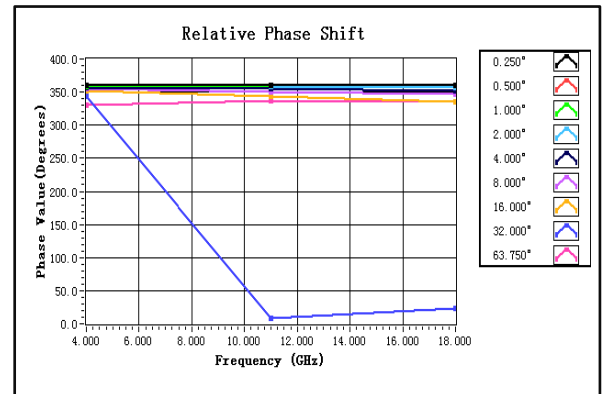
Attenuation Step Error Per Bit (dB)



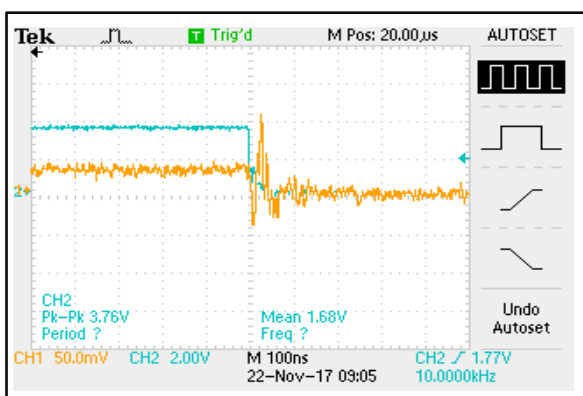
Accumulated Attenuation Error (dB)



Relative Phase Shift



Speed



Speed

