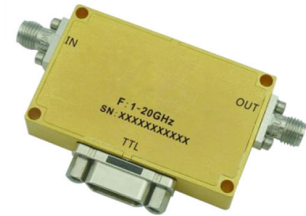




Absorptive Digital Control Attenuator 1-20GHz

Features

- Ultra Wide Band Operation 1-20GHz
- 0.5dB LSB Steps to 63.5dB
- Single Positive Control Line Per Bit
- Customization available upon request



Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	1		6	6		12	12		20	GHz
Attenuation Range		63.5	70		63.5	69		63.5	70	dB
Attenuation Flatness: (Referenced to Insertion Loss)		±1.5			±1.0			±1.5		dB
Control Bits	7									Bit
Control Step Size	0.5			0.5			0.5			dB
Insertion Loss		4.5	6.5		6.0	8.0		7.0	9.0	dB
Insertion Loss Temperature Coefficient			0.01			0.01		0.01		dB/ °C
Input VSWR (All States)		1.8	2.3		1.8	2.0		1.8	2.3	: 1
Output VSWR (All States)		1.8	2.3		1.8	2.0		1.8	2.3	: 1
Input 0.1 dB Compression Point		27			27			27		dBm
IP3 Input		48			48			48		dBm
Switching Speed 50% CTRL* to 90% or 10%	150 Typ.									ns
Weight	1.25 Max.									ounces
Impedance	50									Ω
Bias Current (+5V/-5V)	120/70 Max.									mA
Input / Output Connectors	SMA - Female									
Interface and Control Connector	MICRO-D15 (Female)									
Finish	Gold Plated									
Material	Aluminum									
Sealing	Hermetically Sealed (Optional)									



Absolute Maximum Ratings

Biassing	+5V±10%/-5V±10%
RF Input Power	+27dBm

Ordering Information

Part No.	Description
DBDA0701002000A	1-20GHz 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 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

Outline Drawing:

All Dimensions in mm (inches)

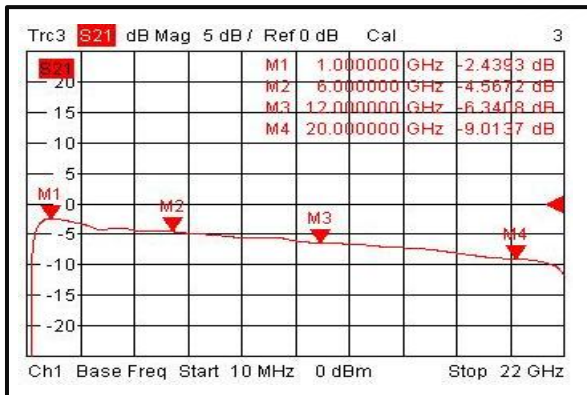
MICRO-D15(Female)

Truth Table

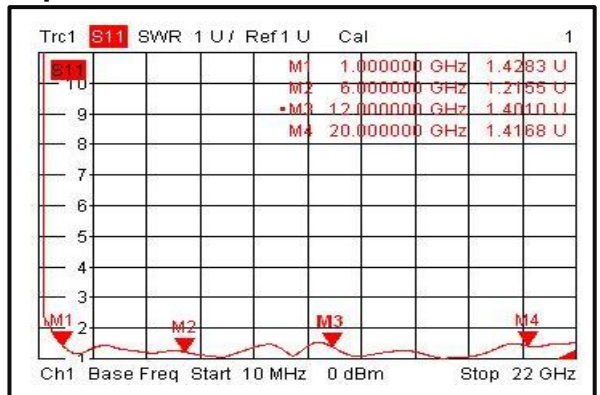
TTL Control Voltage THRESHOLD							Low(0)=0~0.8V
Control Voltage Input							High(1)=2~5V
C7	C6	C5	C4	C3	C2	C1	Attenuation State
1	1	1	1	1	1	1	Reference IL
1	1	1	1	1	1	0	0.5dB
1	1	1	1	1	0	1	1dB
1	1	1	1	0	1	1	2dB
1	1	1	0	1	1	1	4dB
1	1	0	1	1	1	1	8dB
1	0	1	1	1	1	1	16dB
0	1	1	1	1	1	1	32dB
0	0	0	0	0	0	0	63.5db



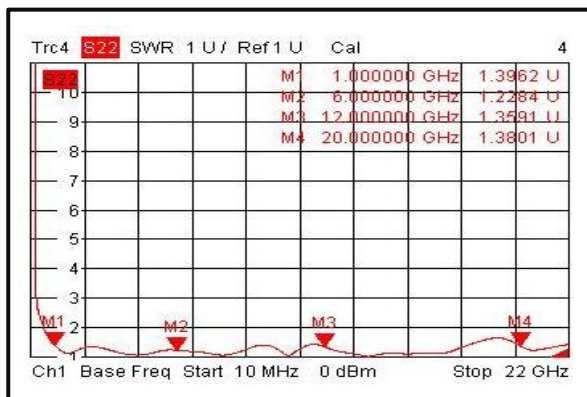
Insertion Loss @+25°C



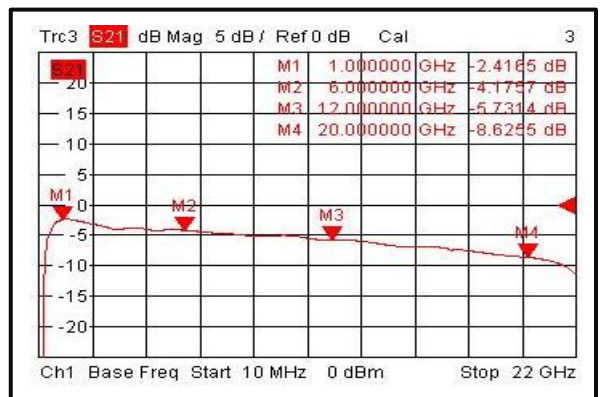
Input VSWR @+25°C



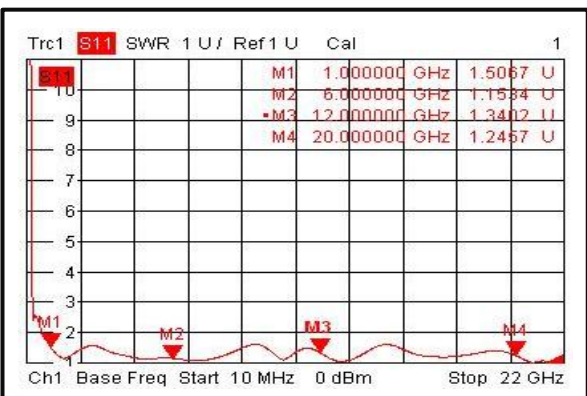
Output VSWR @+25°C



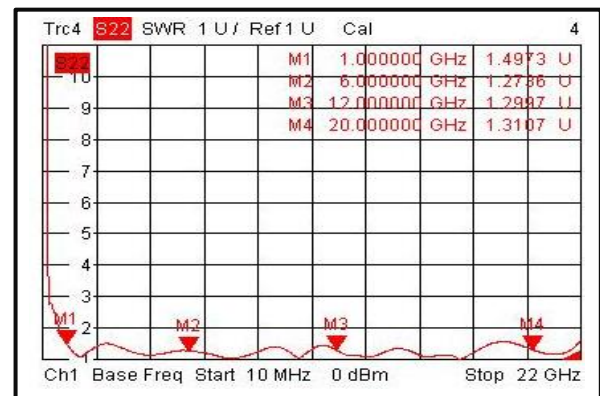
Insertion Loss @-40°C



Input VSWR @-40°C

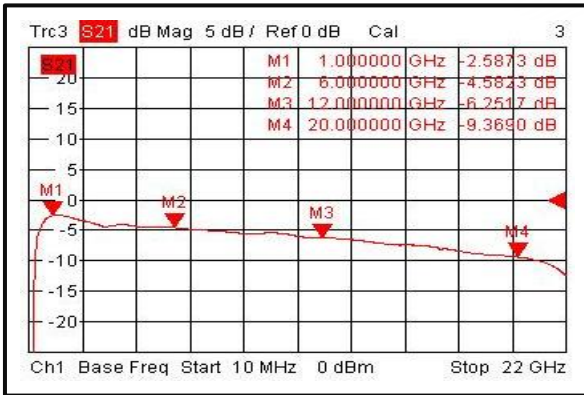


Output VSWR @-40°C

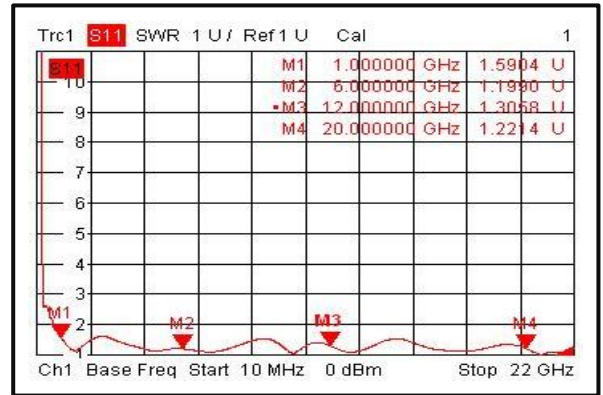




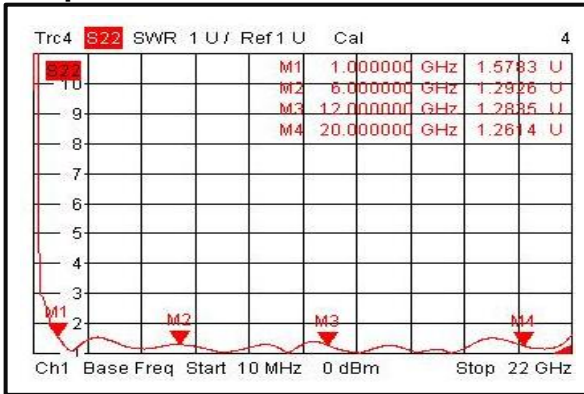
Insertion Loss @+85°C



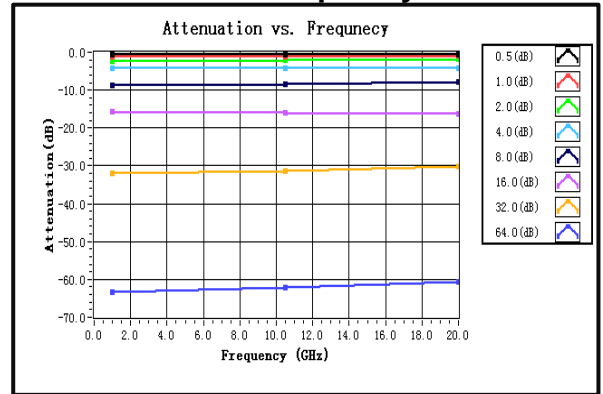
Input VSWR @+85°C



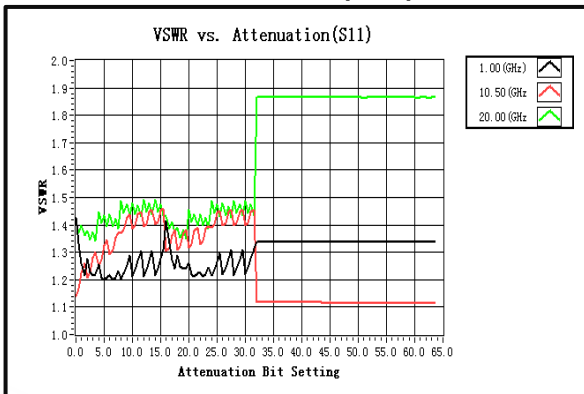
Output VSWR @+85°C



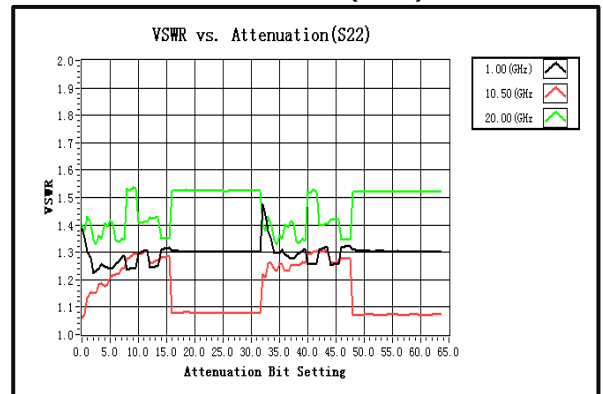
Attenuation vs. Frequency



VSWR vs. Attenuation(S11)

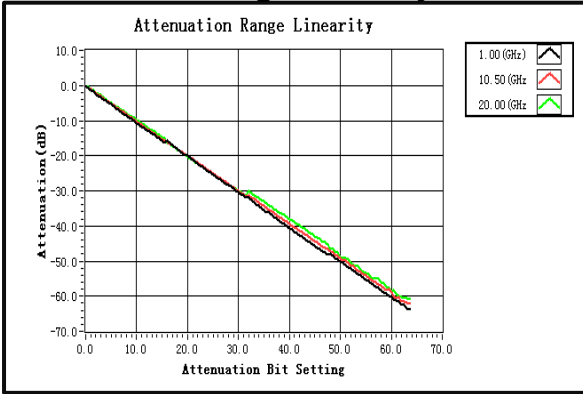


VSWR vs. Attenuation(S22)

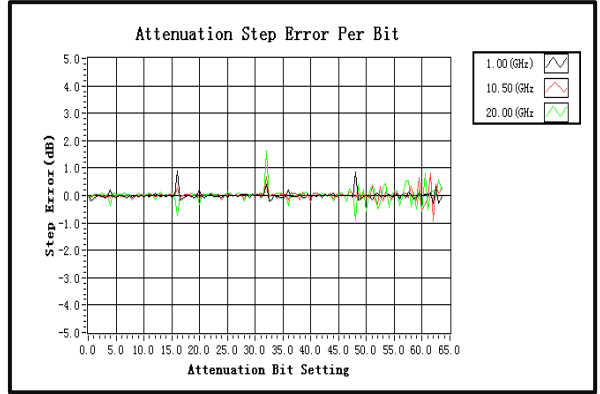




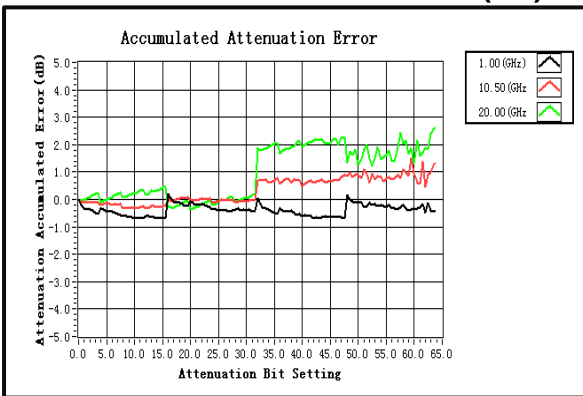
Attenuation Range Linearity



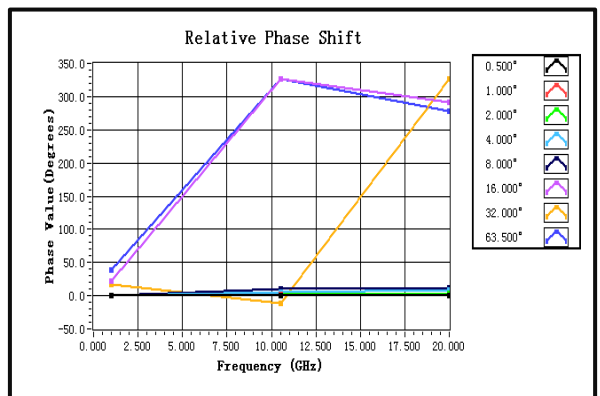
Attenuation Step Error Per Bit (dB)



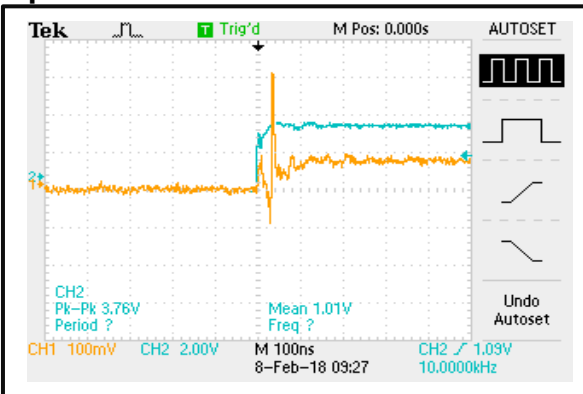
Accumulated Attenuation Error (dB)



Relative Phase Shift



Speed



Speed

