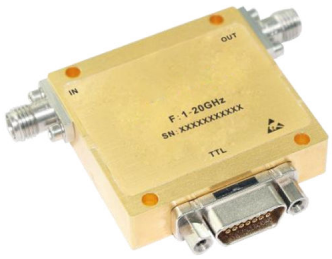
RFecho
A Gateway to RFWorld

Absorptive Digital Control Attenuator 1-20GHz

Features

- Wide Band Operation 1-20GHz
- 0.5dB LSB Steps to 127.5dB
- Single Positive Control Line Per Bit
- Customization available upon request



Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	1~8			8~18			18-20			GHz
Attenuation Range			127.5			127.5			127.5	dB
Attenuation Flatness: (Referenced to Insertion Loss)			±3.0			±5.0			±3.0	dB
Control Bits			8			8			8	Bit
Control Step Size	0.5			0.5			0.5			dB
Insertion Loss		8.0	9.0		12.5	14.0		13.5	14.5	dB
Insertion Loss Temperature Coefficient		0.01			0.01				0.01	dB/ °C
Input VSWR(All States)		1.9	2.3		1.9	2.0		2	2.3	:1
Output VSWR (All States)		1.9	2.3		1.9	2.0		2	2.3	:1
Input 0.1 dB Compression Point (P0.1dB)		25			25			25		dBm
Input IP3		45			45			45		dBm
Switching Speed	200									ns
Weight	1.06									ounces
Impedance	50									Ω
Bias Current (+5V/-5V)	250/130									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

Biasing	+5V±10%/-5V±10%
TTL Control Voltage	0~0.8V/2.8~5V

Environmental Specifications

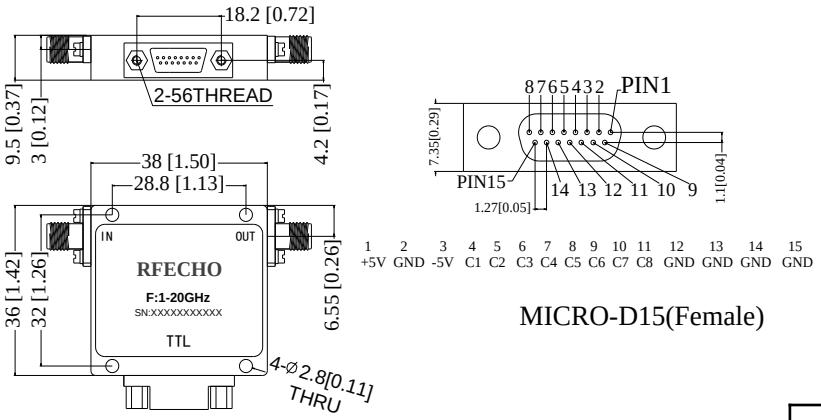
Operational Temperature	-40ºC~+85ºC
Storage Temperature	-50ºC~+105ºC
Altitude	30,000 ft. (Epoxy Sealed Controlled environment)
	60,000 ft. 1.0psi min (Hermetically Sealed Un-controlled environment) (Optional)
Vibration	25g RMS (15 degrees 2KHz) endurance, 1 hour per axis
Humidity	100% RH at 35ºc, 95%RH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

Ordering Information

Part No.	Description
DBDA0801001800A	1-20GHz Digital Control Attenuator

Outline Drawing:

All Dimensions in mm (inches)

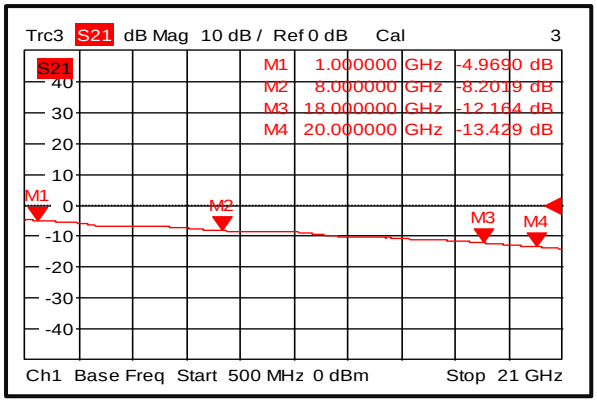


MICRO-D15(Female)

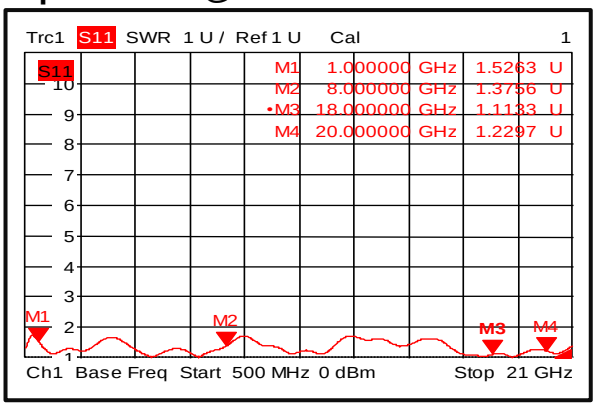
Truth Table

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	0.5dB
1	1	1	1	1	1	0	1	1dB
1	1	1	1	1	0	1	1	2dB
1	1	1	1	0	1	1	1	4dB
1	1	1	0	1	1	1	1	8dB
1	1	0	1	1	1	1	1	16dB
1	0	1	1	1	1	1	1	32dB
0	1	1	1	1	1	1	1	64dB
0	0	0	0	0	0	0	0	127.5dB

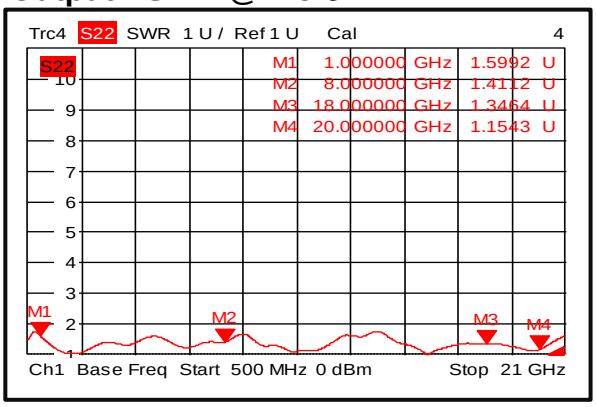
Insertion Loss @+25℃



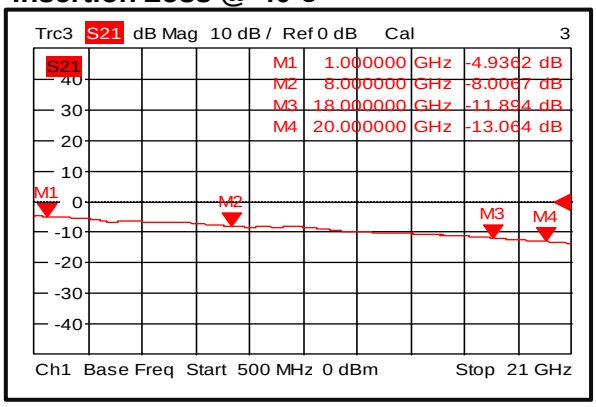
Input VSWR @+25℃



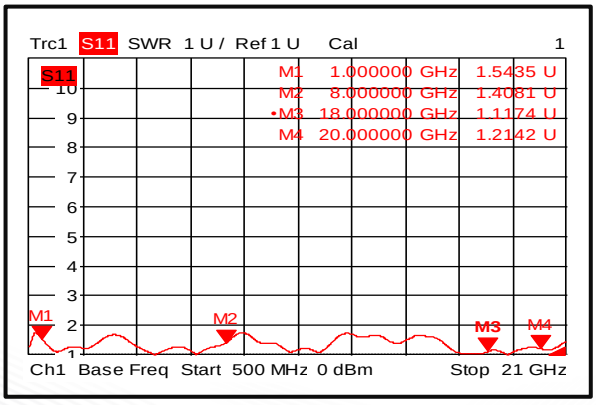
Output VSWR @+25℃



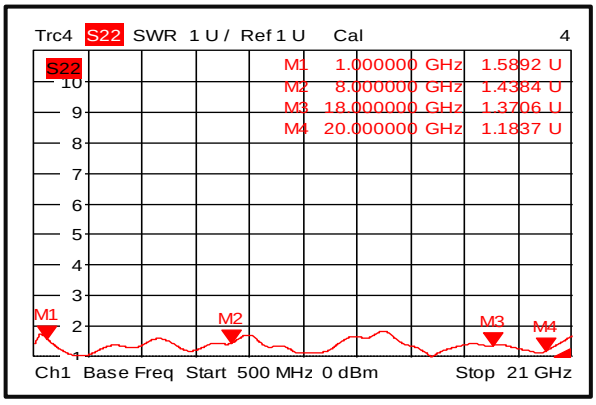
Insertion Loss @-40℃



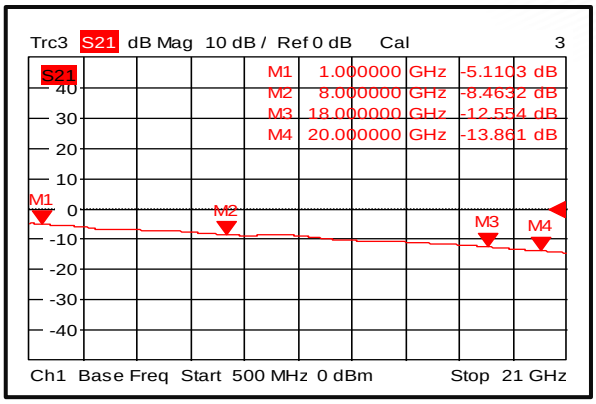
Input VSWR @-40℃



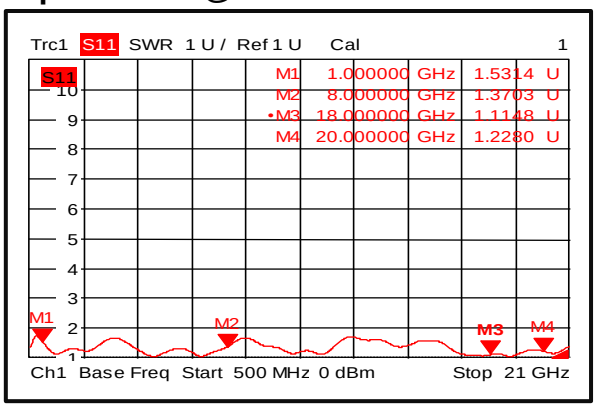
Output VSWR @-40℃



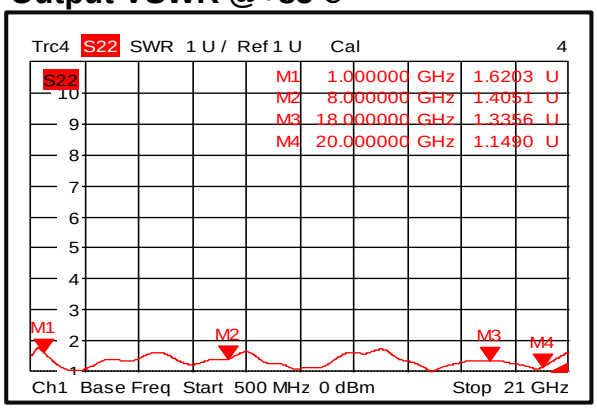
Insertion Loss @+85℃



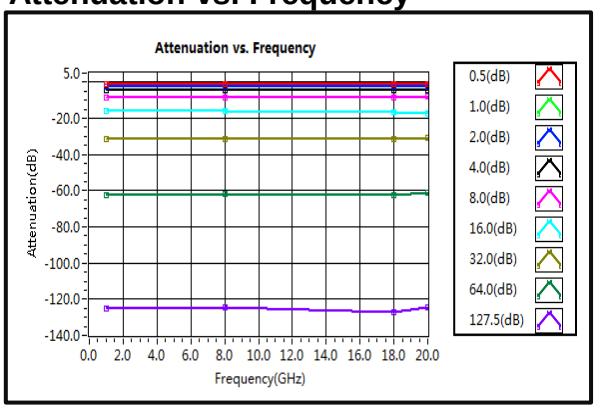
Input VSWR @+85℃



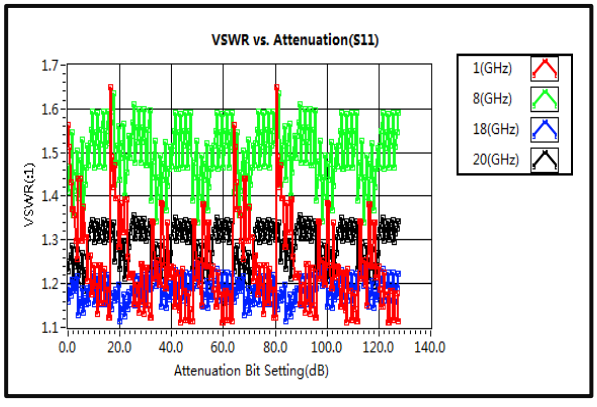
Output VSWR @+85℃



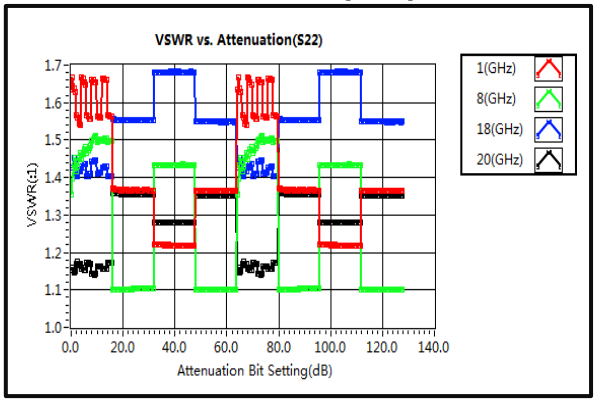
Attenuation vs. Frequency



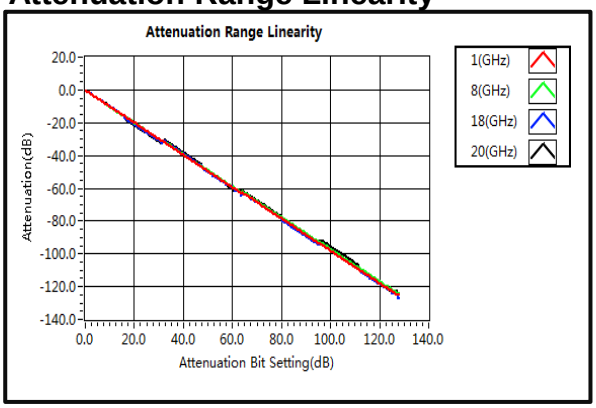
VSWR vs. Attenuation(S11)



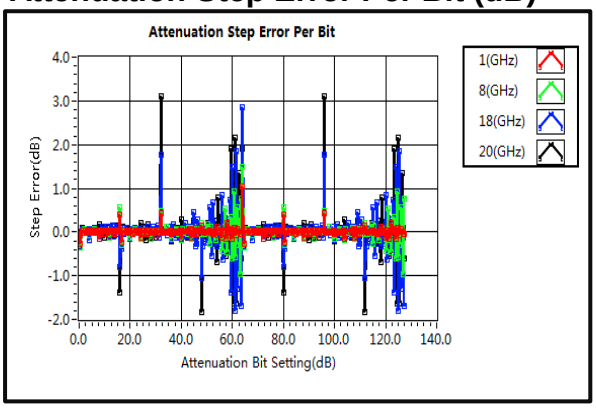
VSWR vs. Attenuation(S22)



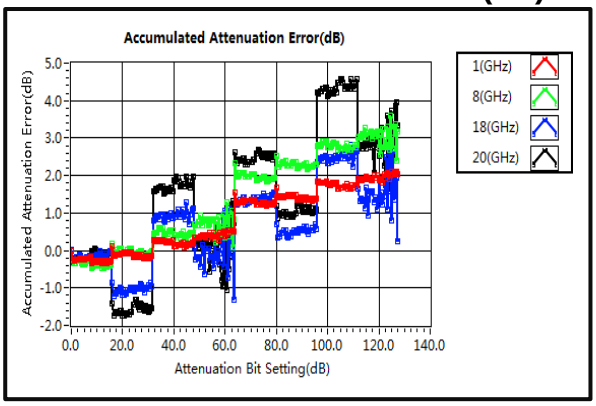
Attenuation Range Linearity



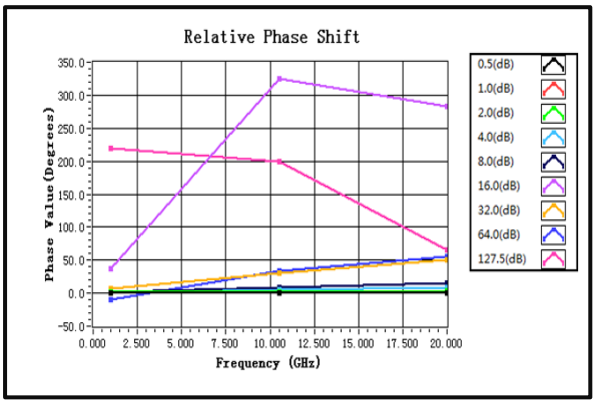
Attenuation Step Error Per Bit (dB)



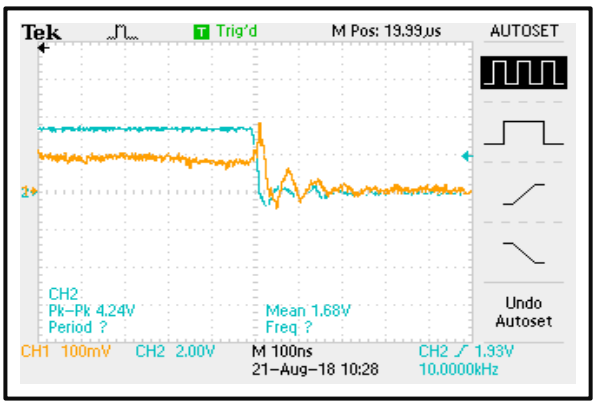
Accumulated Attenuation Error(dB)



Relative Phase Shift



Speed



Speed