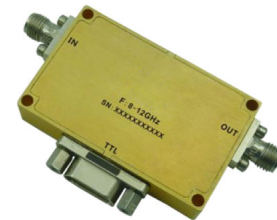




# Reflective Digital Control Attenuator 8-12GHz

## Features

- Wide Band Operation 8-12GHz
- 1dB LSB Steps to 63dB
- Single Positive Control Line Per Bit
- Customization available upon request



Parameters	Min.	Typ.	Max.	Units
Frequency Range	8		12	GHz
Attenuation Range			63	dB
Attenuation Flatness: (Referenced to Insertion Loss)		±2.0		dB
Control Bits			6	Bit
Control Step size	1			dB
Insertion Loss		1.5	2	dB
Insertion Loss Temperature Coefficient		0.005		dB/ °C
Input VSWR (All Atten. states )		1.5	2.0	: 1
Output VSWR (All Atten. states)		1.5	2.0	: 1
Input 0.1 dB Compression Point		30		dBm
IP3 Input		45		dBm
Switching Speed		50		us
Weight		1.41		ounces
Impedance		50		Ω
Bias Current (+12V)		80		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	+15V
TTL Control Voltage	0~0.8V / 2.8~5V
RF Input power	+30dBm

### Ordering Information

Part No.	Description
DBDA0608001200D	8-12GHz 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)

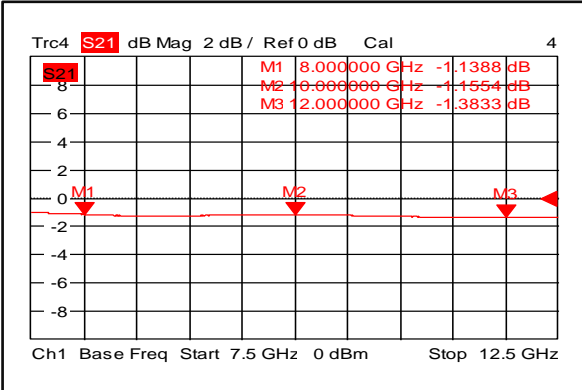
The drawing shows a rectangular attenuator with dimensions: 10 [0.394] x 48 [1.890] x 7 [0.276]. It features a 2-56 THREAD mounting hole, IN and OUT ports, and a TTL control input. A secondary view shows the MICRO-D15(Female) connector with pins 1-8 and 9-15 labeled. Pin 1 is +12V, pin 2 is GND, pins 3-8 are C6, C5, C4, C3, C2, C1, and pins 9-15 are NC.

**TruthTable**

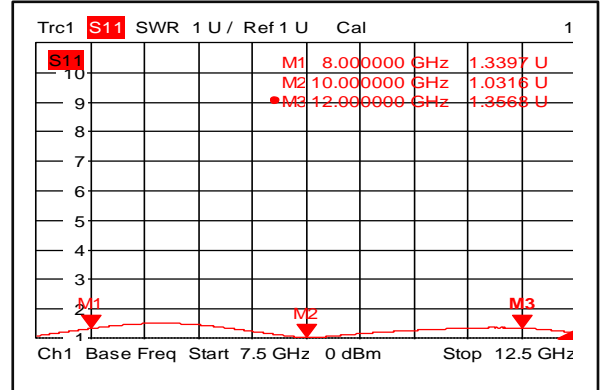
Control Voltage Input						Attenuation state
C6	C5	C4	C3	C2	C1	
0	0	0	0	0	0	Reference IL
0	0	0	0	0	1	1dB
0	0	0	0	1	0	2dB
0	0	0	1	0	0	4dB
0	0	1	0	0	0	8dB
0	1	0	0	0	0	16dB
1	0	0	0	0	0	32dB
1	1	1	1	1	1	63dB



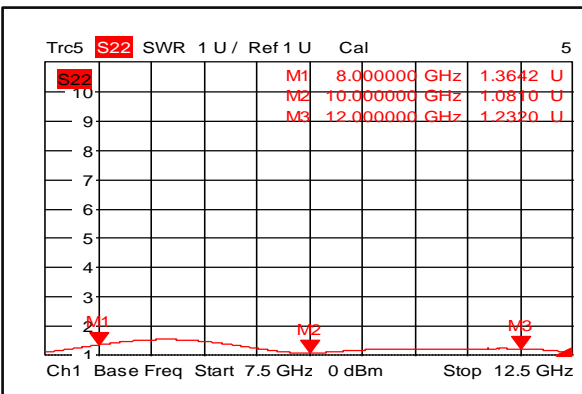
### Insertion Loss @+25°C



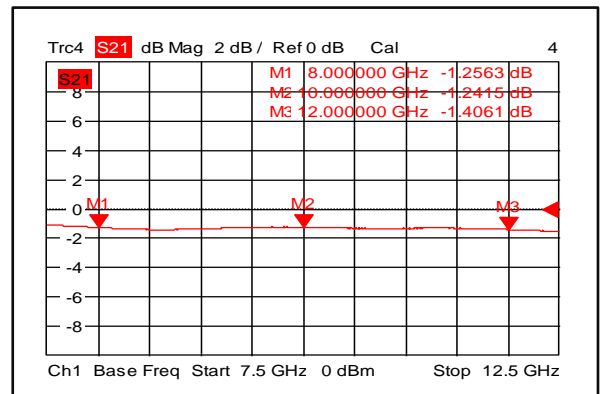
### Input VSWR @+25°C



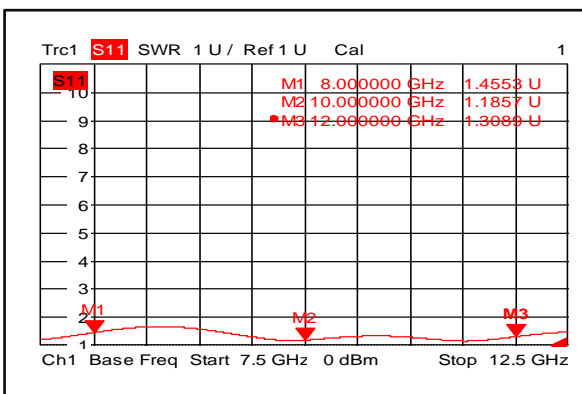
### Output VSWR @+25°C



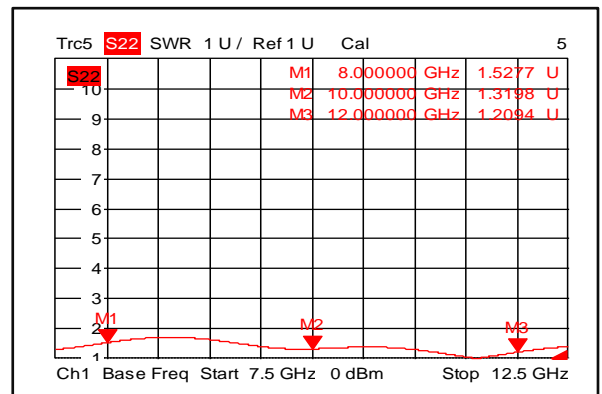
### Insertion Loss @-40°C



### Input VSWR @-40°C

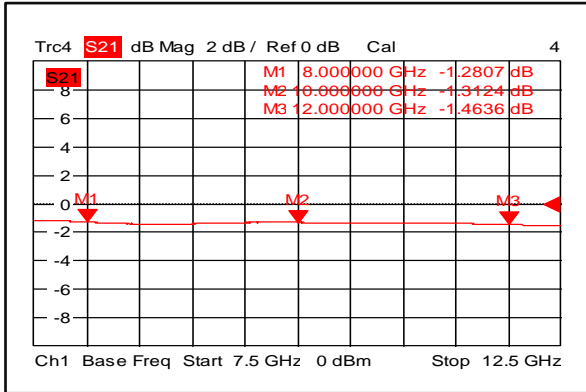


### Output VSWR @-40°C

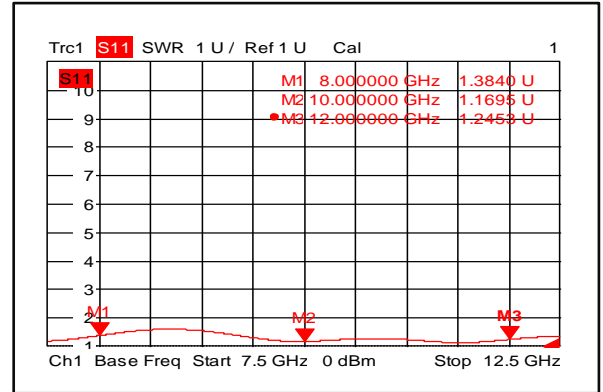




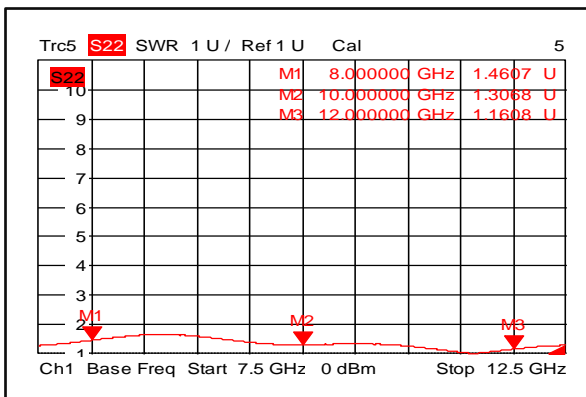
### Insertion Loss @+85°C



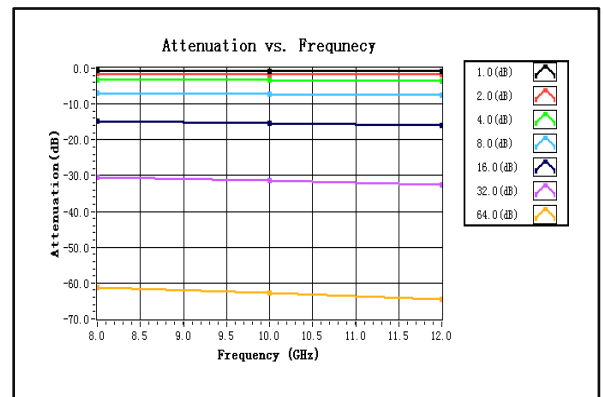
### Input VSWR @+85°C



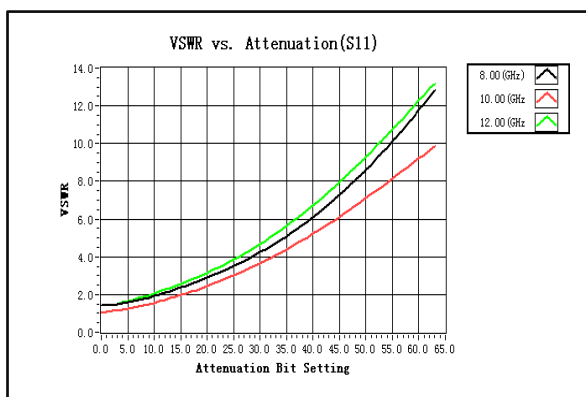
### Output VSWR @+85°C



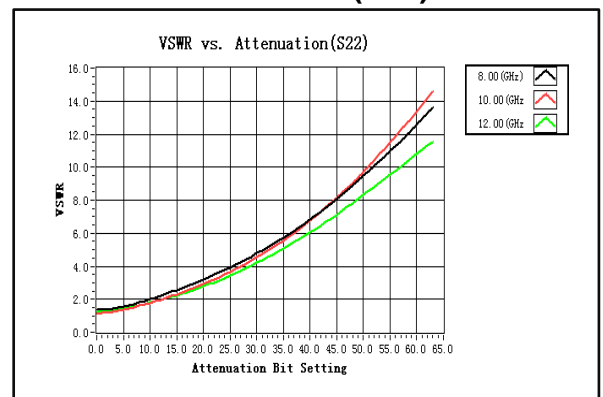
### Attenuation vs. Frequency



### VSWR vs. Attenuation(S11)

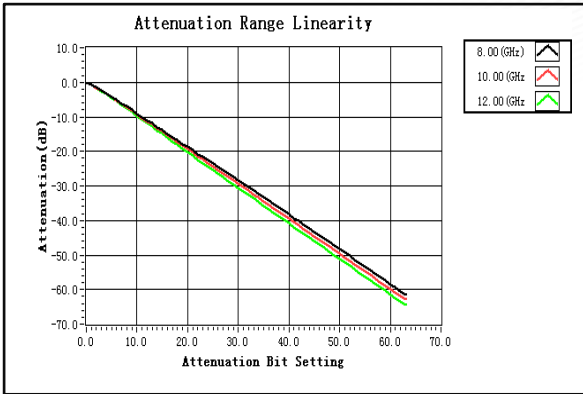


### VSWR vs. Attenuation(S22)

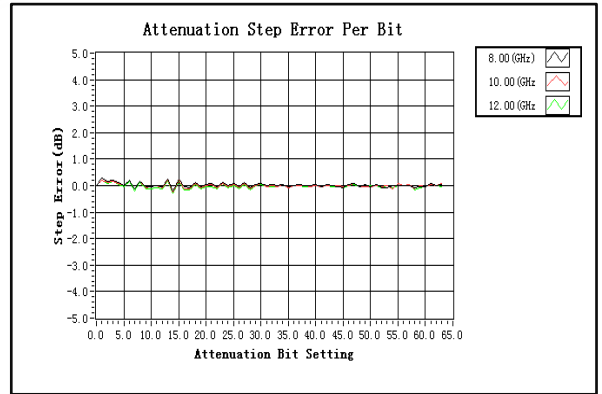




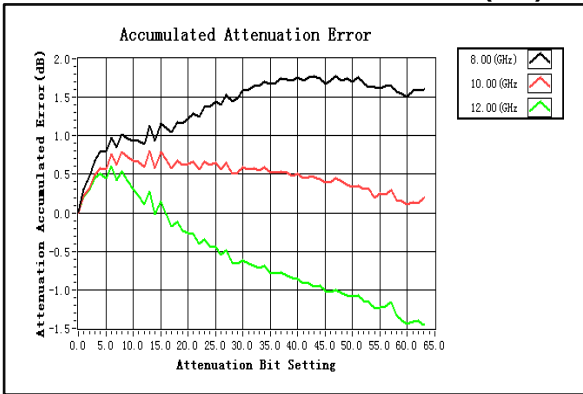
### Attenuation Range Linearity



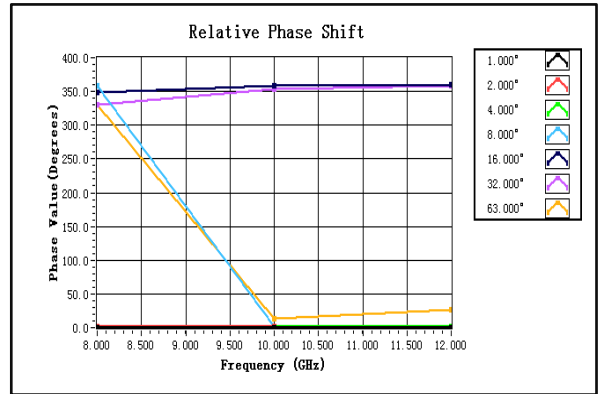
### Attenuation Step Error Per Bit (dB)



### Accumulated Attenuation Error(dB)



### Relative Phase Shift



### Speed

