



# Absorptive Digital Control Attenuator 1-2GHz

## Features

- Wide Band Operation 1-2GHz
- 1dB LSB Steps to 63dB
- Single Positive Control Line Per Bit
- Customization available upon request



Parameters	Min.	Typ.	Max.	Units
Frequency Range	1		2	GHz
Attenuation Range		63		dB
Attenuation Flatness: (Referenced to Insertion Loss)		±1.0	±2.0	dB
Control Bits			6	Bit
Control Step size	1			dB
Insertion Loss		2	2.5	dB
Insertion Loss Temperature Coefficient		0.003		dB/ °C
Input VSWR( All Atten. States)			1.5	: 1
Output VSWR ( All Atten. States)			1.5	: 1
Input 0.1 dB Compression Point (P0.1dB)		27		dBm
IP3 Input		45		dBm
Switching Speed		100		ns
Weight		0.71		ounces
Impedance		50		Ω
Bias Current (+5V/-5V)		150/80		mA
Input /Output Connectors	SMA-Female			
Interface and control connertor	MICRO-D9(Female)			
Finish	Gold Plated			
Material	Aluminum			
Sealing	Hermetically Sealed ( optional )			



### Absolute Maximum Ratings

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

### 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
DBDA0601000200A	1-2GHz Digital Control Attenuator

### Outline Drawing:

All Dimensions in mm (inches)

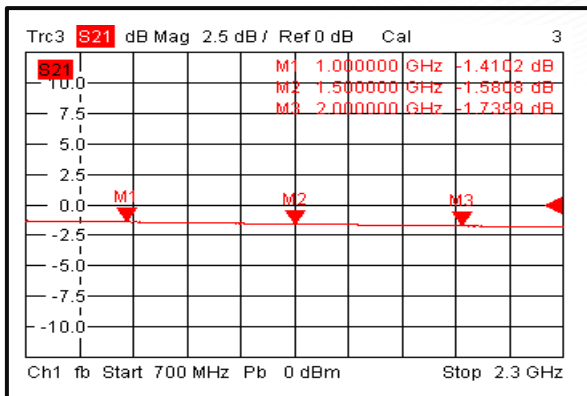
The drawing shows a top view of the attenuator with dimensions in mm and inches. Key features include:
 

- IN and OUT ports with dimensions: 20 [0.79], 16 [0.63], 9.5 [0.37], 38 [1.50], 34 [1.34], 4.2 [0.17], 3 [0.12].
- 2-56 THREAD mounting holes with a diameter of 14.35 [0.56].
- Micro-D9 (Female) connector with pins 1-9 and dimensions: 7.35 [0.29], 1.27 [0.05], 1.1 [0.04].
- Pinout: 1 (+5V), 2 (-5V), 3 (GND), 4 (C1), 5 (C2), 6 (C3), 7 (C4), 8 (C5), 9 (C6).
- 4-ø2.8 [0.11] THRU holes.
- Label: RFECHO F:1-2GHz SN:XXXXXXXXXX TTL.

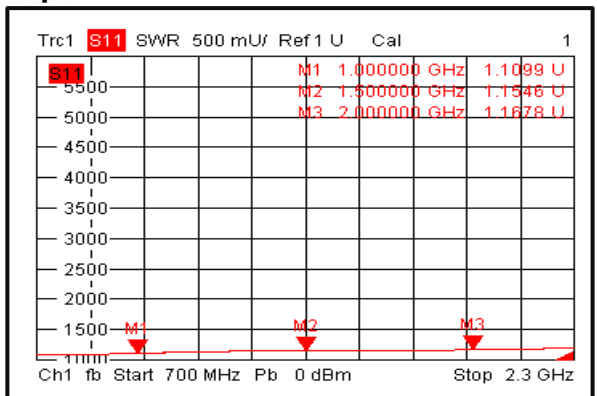
Control Voltage Input						Attenuation state
C6	C5	C4	C3	C2	C1	
0	0	0	0	0	0	Reference IL
0	0	0	0	0	1	1dB
0	0	0	0	1	0	2dB
0	0	0	1	0	0	4dB
0	0	1	0	0	0	8dB
0	1	0	0	0	0	16dB
1	0	0	0	0	0	32dB
1	1	1	1	1	1	63dB



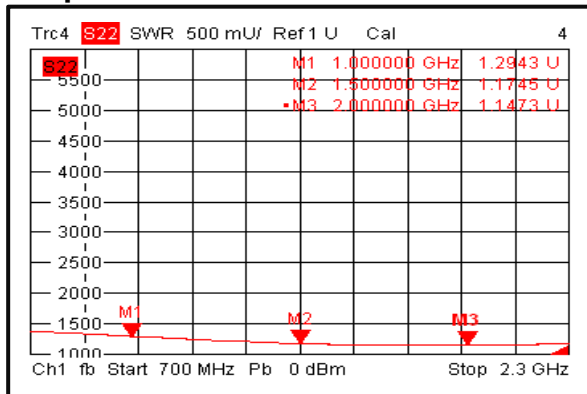
### Insertion Loss @+25°C



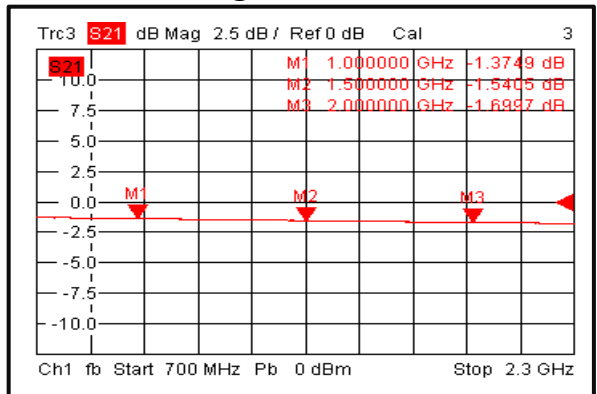
### Input VSWR @+25°C



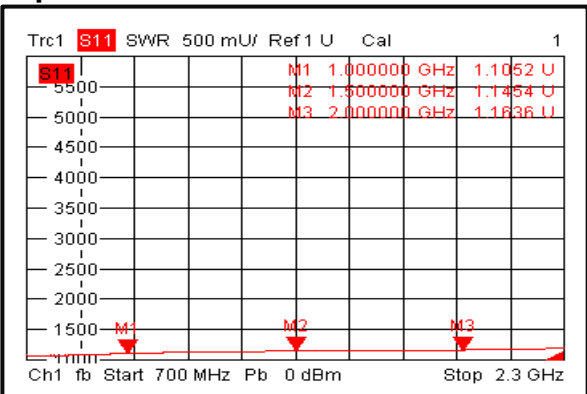
### Output VSWR @+25°C



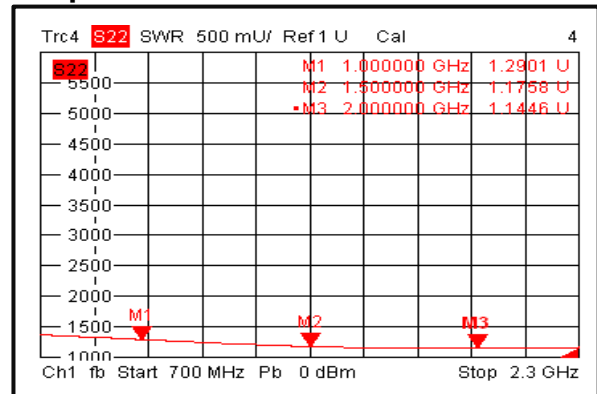
### Insertion Loss @-40°C



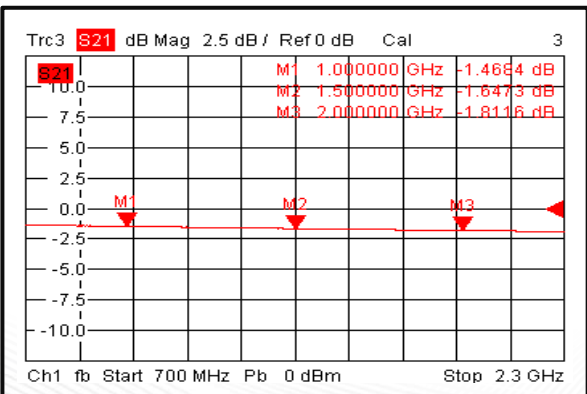
### Input VSWR @-40°C



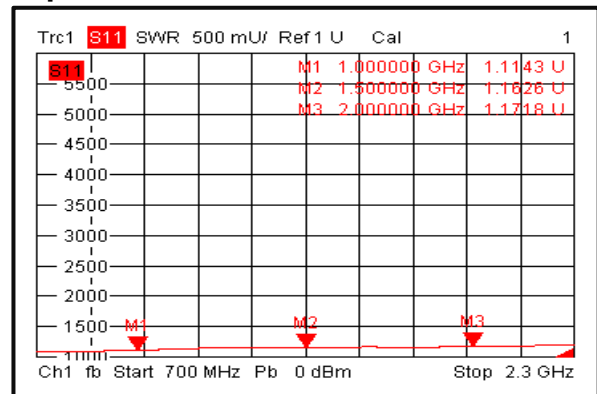
### Output VSWR @-40°C



### Insertion Loss @+85°C

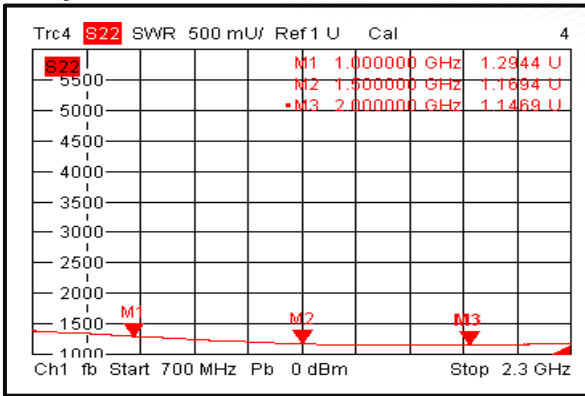


### Input VSWR @+85°C

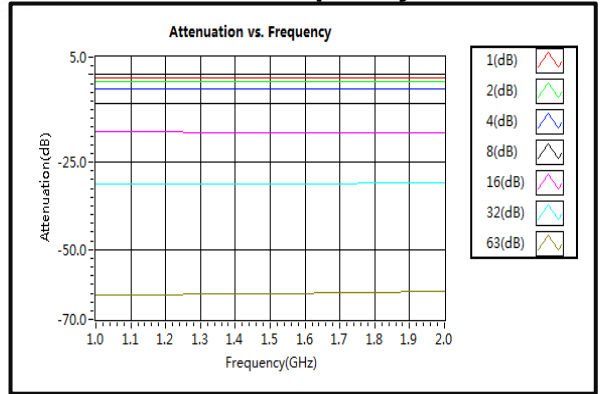




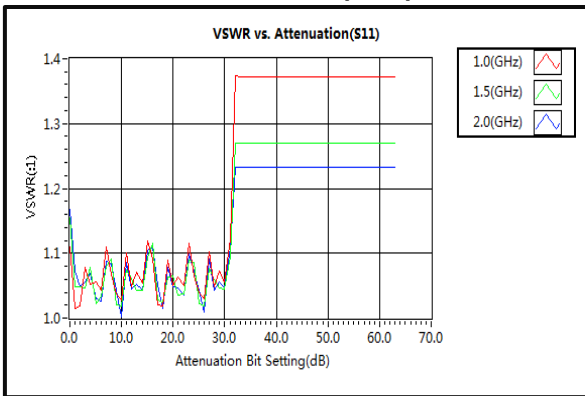
### Output VSWR @+85°C



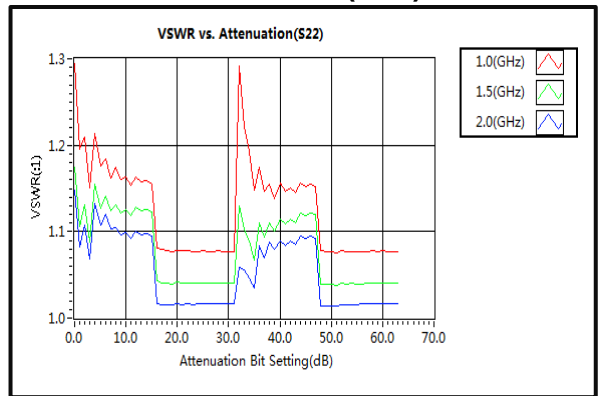
### Attenuation vs. Frequency



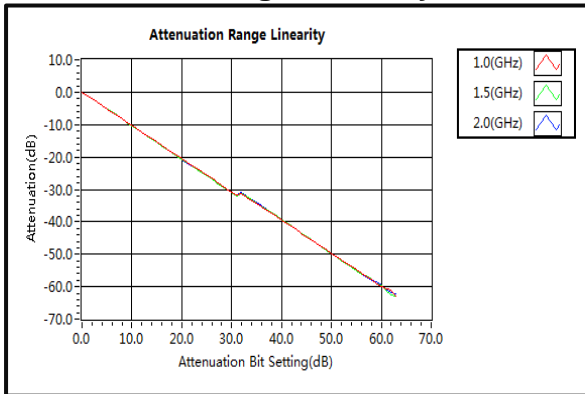
### VSWR vs. Attenuation(S11)



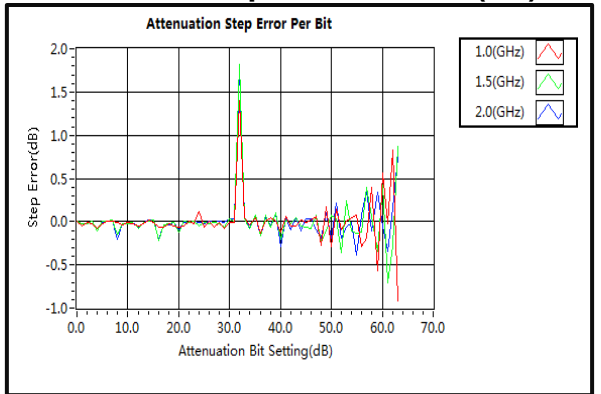
### VSWR vs. Attenuation(S22)



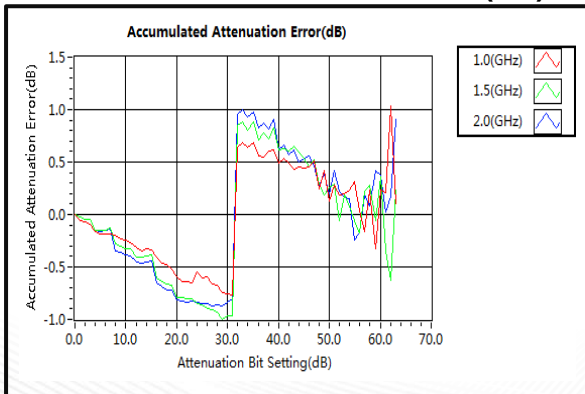
### Attenuation Range Linearity



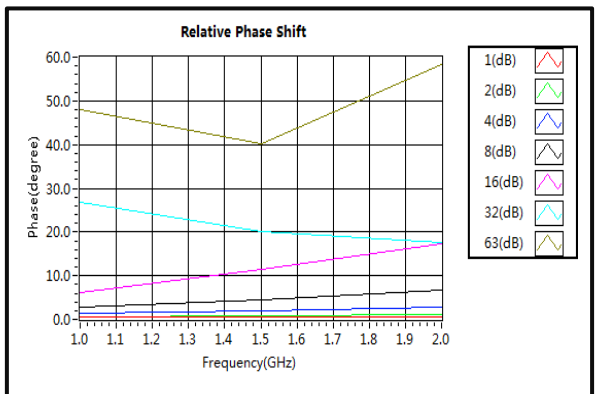
### Attenuation Step Error Per Bit (dB)



### Accumulated Attenuation Error(dB)

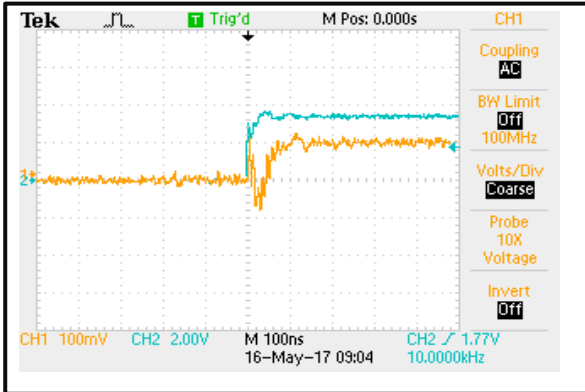


### Relative Phase Shift





### Switching Speed



### Switching Speed

