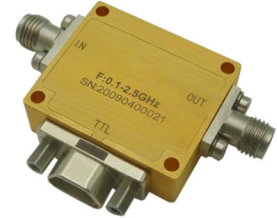




Absorptive Digital Control Attenuator 0.1 - 2.5GHz

Features

- Wide Band Operation 0.1-2.5GHz
- 10dB LSB Steps to 30dB
- Single Positive Control Line Per Bit
- Customization available upon request



Parameters	Min.	Typ.	Max.	Units
Frequency Range	0.1-2.5			GHz
Attenuation Range	29	31.5		dB
Attenuation Flatness: (Referenced to Insertion Loss)		±2		dB
Control Bits			2	Bit
Control Step size	10			dB
Insertion Loss		1.9	2.0	dB
Insertion Loss Temperature Coefficient		0.005		dB/ °C
Input VSWR(All Atten. States)		1.5	1.8	: 1
Output VSWR (All Atten. States)		1.5	1.8	: 1
Input 0.1 dB Compression Point (P0.1dB)		28		dBm
IIP3		57		dBm
Switching Speed	150 Max.			ns
Weight	0.75 Max.			ounces
Impedance	50			Ω
Bias Current (+5v)	10 Max.			mA
Input / Output Connectors	SMA-Female			
Interface and Control Connector	MICRO-D9(Female)			
Finish	Gold Plated			
Material	Aluminum			
Sealing	Hermetically Sealed (Optional)			



Absolute Maximum Ratings

Biassing	+5V±10%
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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
DBDA0200100250A	0.1-2.5GHz Digital Control Attenuator

Outline Drawing:

All Dimensions in mm (inches)
Housing Tolerances ±0.1 (0.004)

2-56THREAD DP3.5[0.138]

4.5 [0.18]

3 [0.12]

9.5 [0.37]

24 [0.94]

20 [0.79]

14 [0.55]

14 [0.55]

24 [0.94]

28 [1.10]

4-∅ 2.8[0.11] THRU

IN RFECHO OUT

F:0.1-2.5GHz

SN:XXXXXXXX

TTL

1.27 [0.05]

7.35 [0.29]

1.1 [0.04]

NC NCNCNC

C2 C1 GND GND +5V

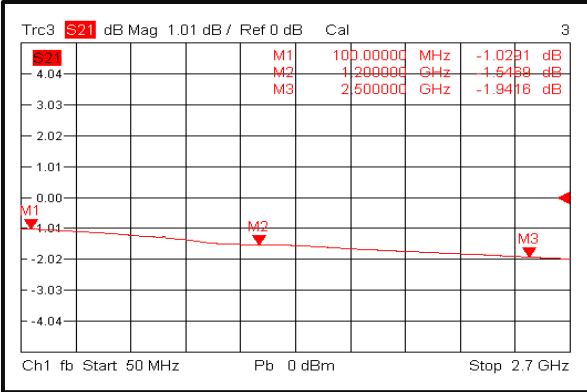
MICRO-D9 (Female)

Truth Table

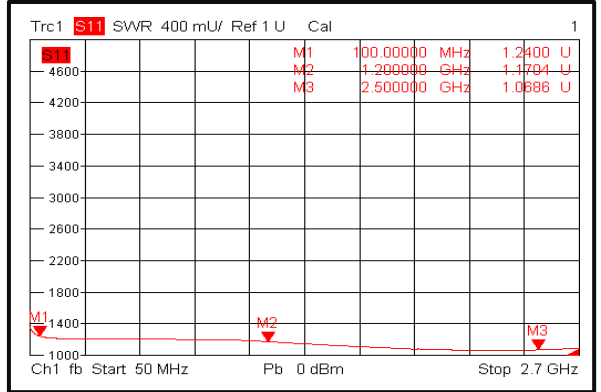
TTL Control Voltage THRESHOLD		Low(0)=0~0.8V	High(1)=2.8~5V
Control Voltage Input		Attenuation state	
C2	C1		
1	1	Reference IL	
1	0	10dB	
0	1	20dB	
1	1	30dB	



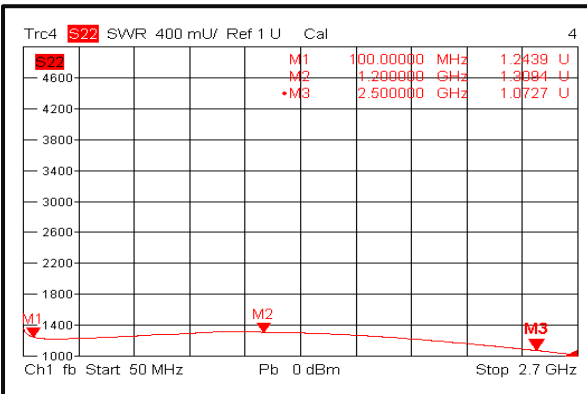
Insertion Loss @+25°C



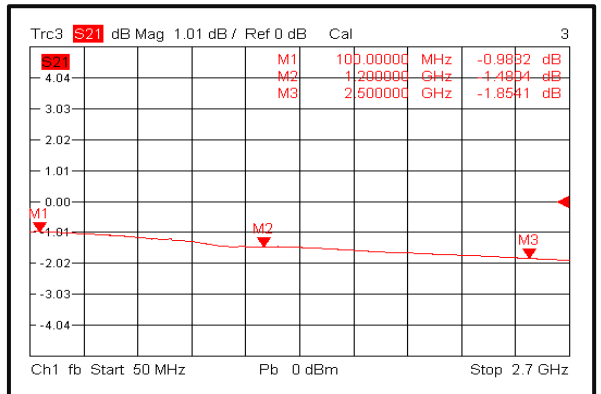
Input VSWR @+25°C



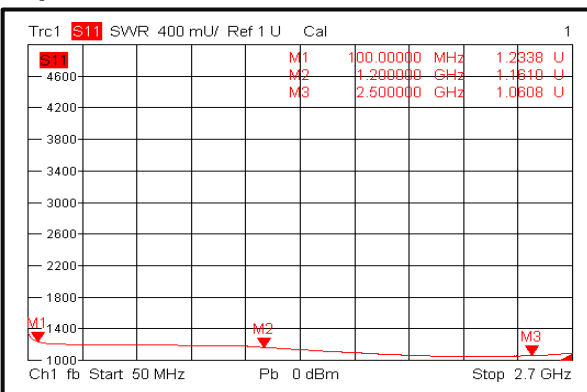
Output VSWR @+25°C



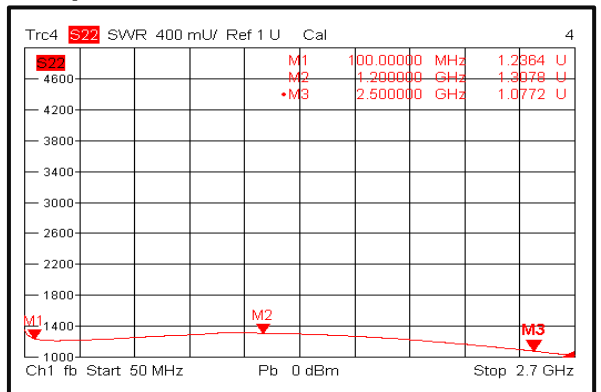
Insertion Loss @-40°C



Input VSWR @-40°C

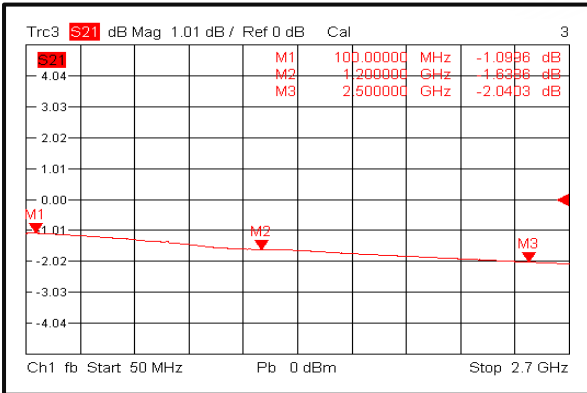


Output VSWR @-40°C

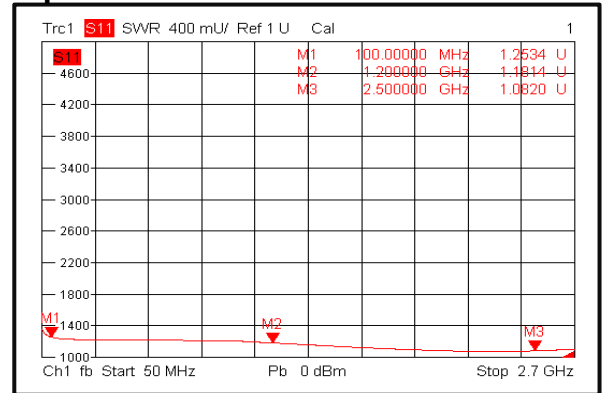




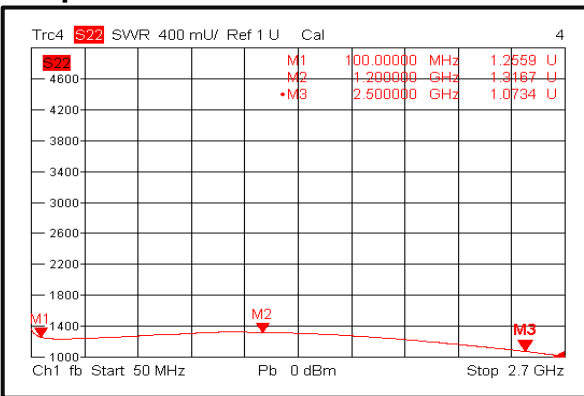
Insertion Loss @+85°C



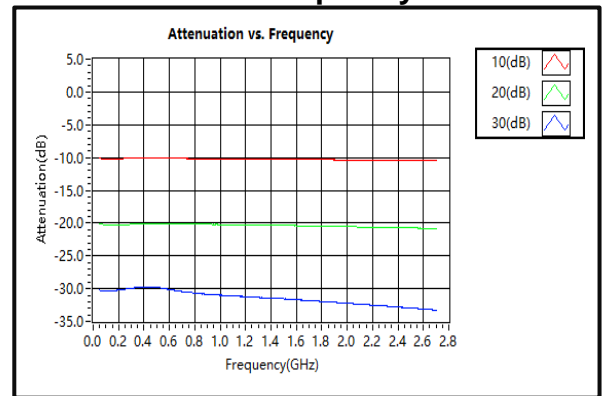
Input VSWR @+85°C



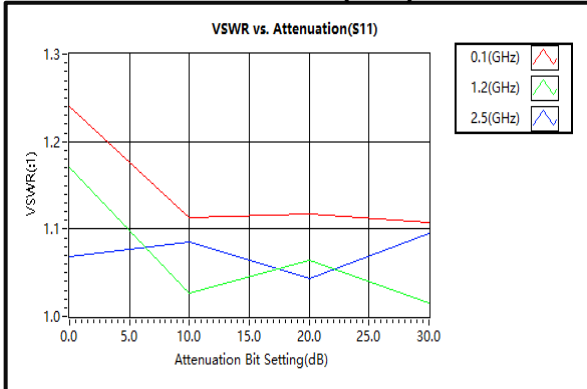
Output VSWR @+85°C



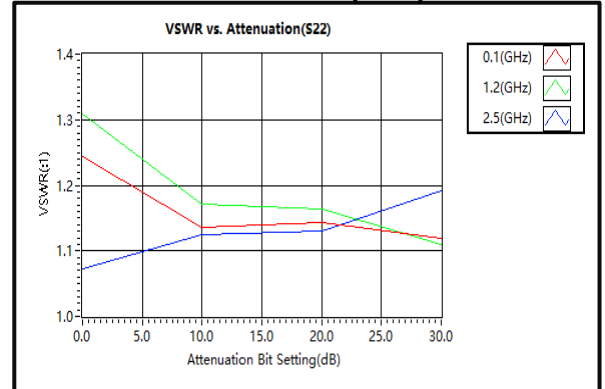
Attenuation vs. Frequency



VSWR vs. Attenuation(S11)

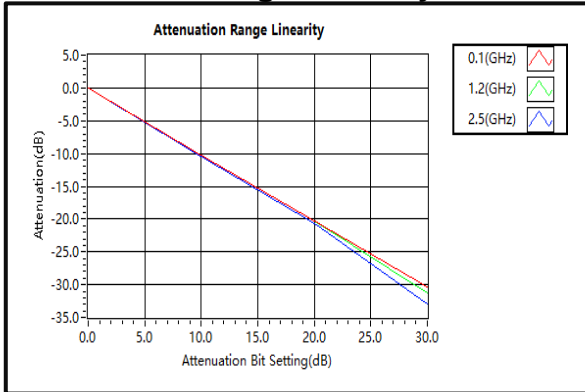


VSWR vs. Attenuation(S22)

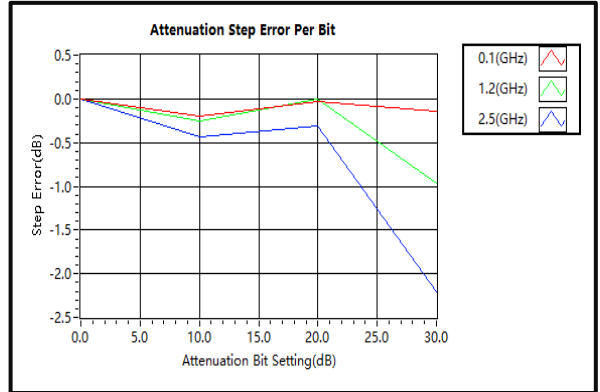




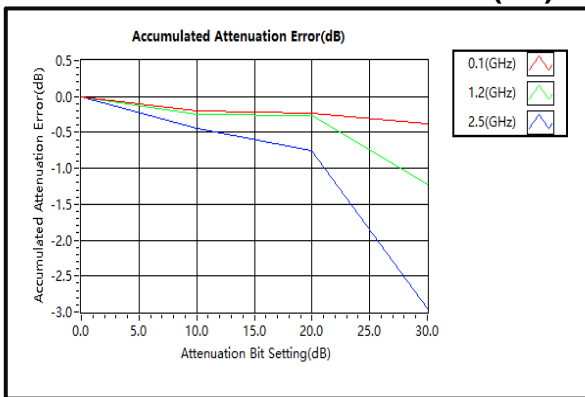
Attenuation Range Linearity



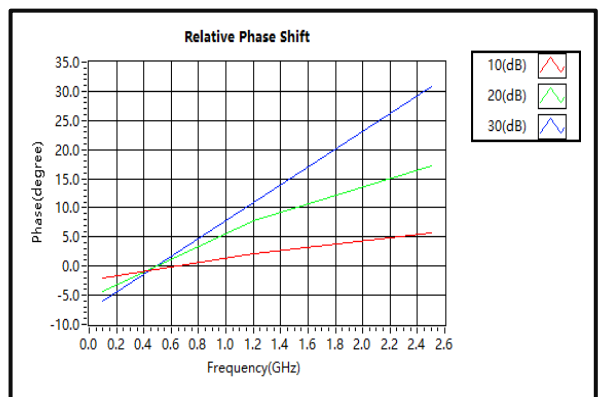
Attenuation Step Error Per Bit (dB)



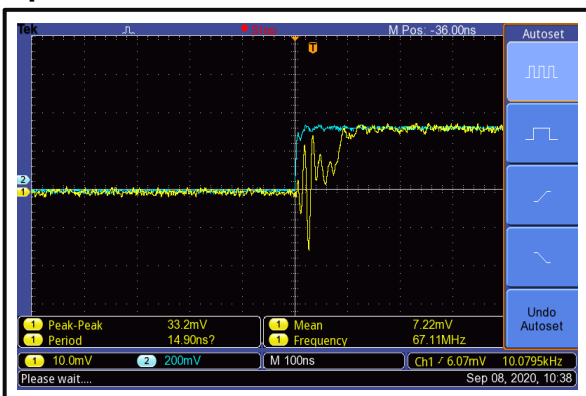
Accumulated Attenuation Error (dB)



Relative Phase Shift



Speed



Speed

