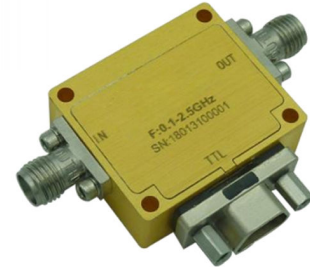




Absorptive Digital Control Attenuator 0.1 - 2.5GHz

Features

- Wide Band Operation 0.1-2.5GHz
- 0.5dB LSB Steps to 31.5dB
- Single Positive Control Line Per Bit
- Customization available upon request



Parameters	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.1-2.5		2.5-4				GHz
Attenuation Range	30	31.5		30	35		dB
Attenuation Flatness: (Referenced to Insertion Loss)		±2	±4		±2	±6	dB
Control Bits			6			6	Bit
Control Step size	0.5				0.5		dB
Insertion Loss		1.9	2.0		2.6	3.0	dB
Insertion Loss Temperature Coefficient		0.005			0.005		dB/ °C
Input VSWR(All Atten. States)		1.6	1.8		1.6	1.8	: 1
Output VSWR (All Atten. States)		1.6	1.8		1.6	1.8	: 1
Input 0.1 dB Compression Point (P0.1dB)		28			28		dBm
IIP3		55			53		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

Biasing	+5V±10%
---------	---------

Ordering Information

Part No.	Description
DBDA0600100250A	0.1-2.5GHz 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)

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-Ø 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]

C6 C5 C4 C3

C2 C1 GND GND +5V

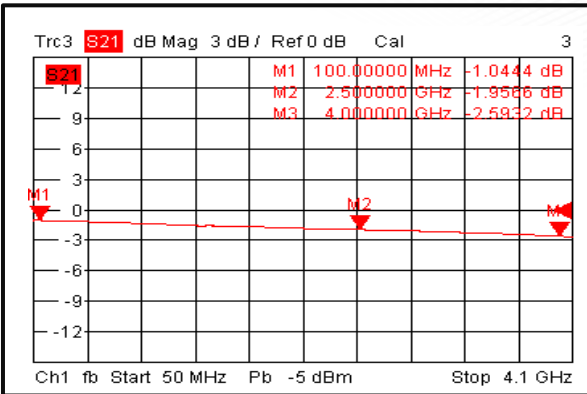
MICRO-D9 (Female)

Truth Table

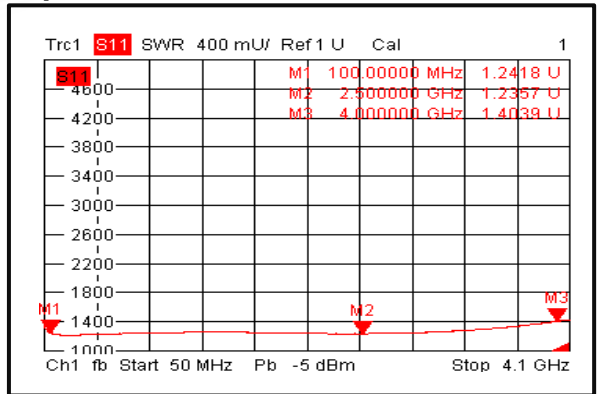
TTL Control Voltage THRESHOLD		Low(0)=0~0.8V		High(1)=2.8~5V		Attenuation state
C6	C5	C4	C3	C2	C1	
1	1	1	1	1	1	Reference IL
1	1	1	1	1	0	0.5dB
1	1	1	1	0	1	1dB
1	1	1	0	1	1	2dB
1	1	0	1	1	1	4dB
1	0	1	1	1	1	8dB
0	1	1	1	1	1	16dB
0	0	0	0	0	0	31.5dB



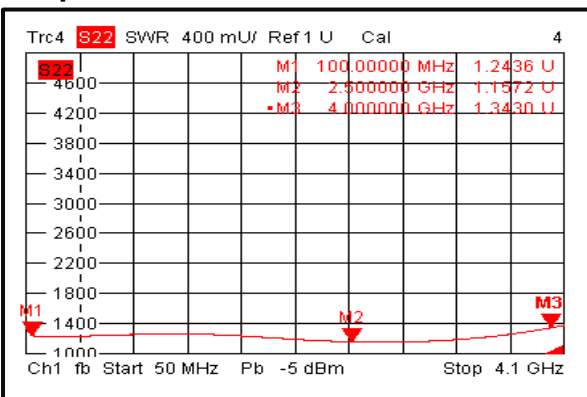
Insertion Loss @+25°C



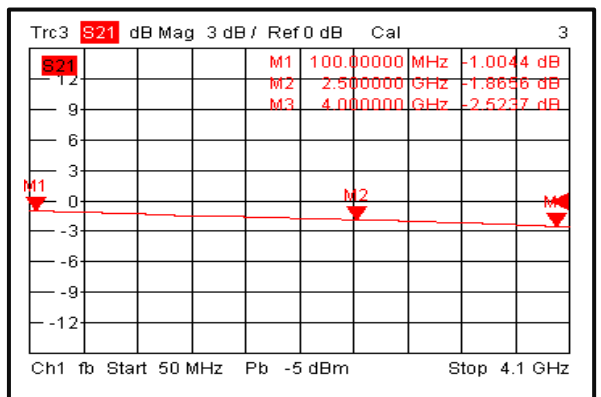
Input VSWR @+25°C



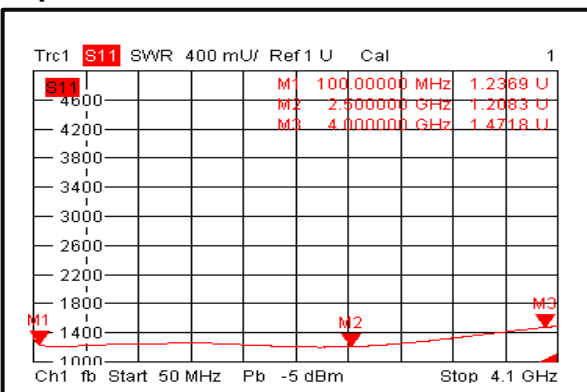
Output VSWR @+25°C



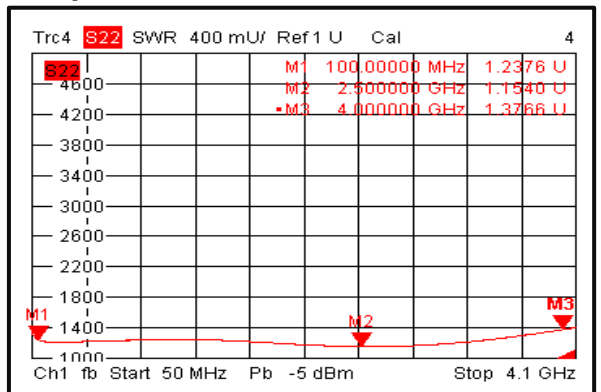
Insertion Loss @-40°C



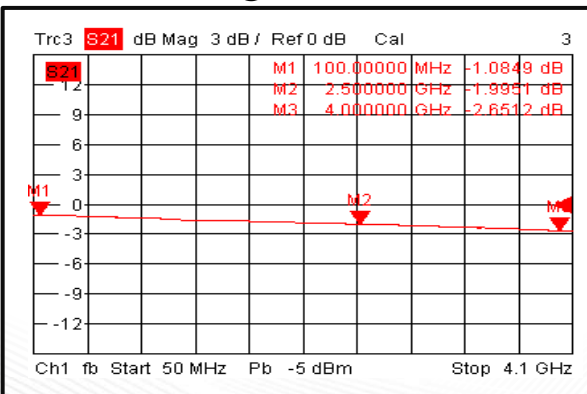
Input VSWR @-40°C



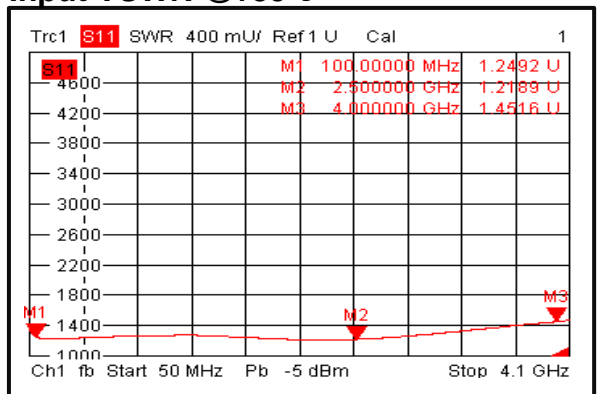
Output VSWR @-40°C



Insertion Loss @+85°C

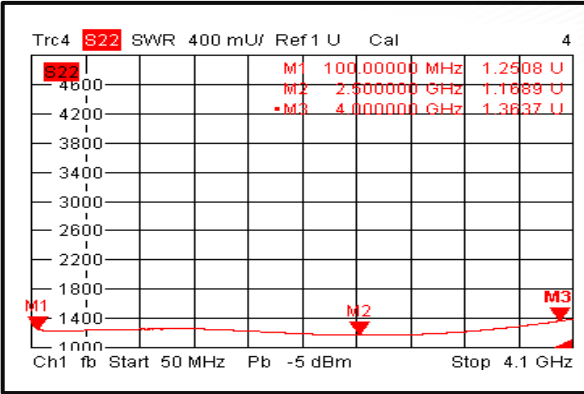


Input VSWR @+85°C

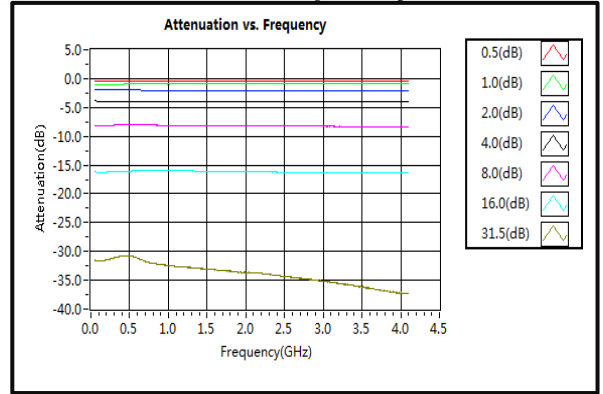




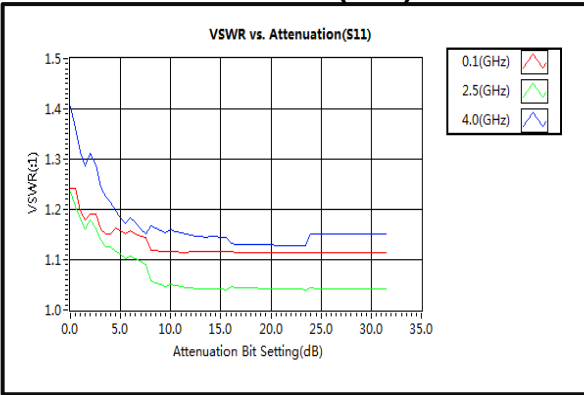
Output VSWR @+85°C



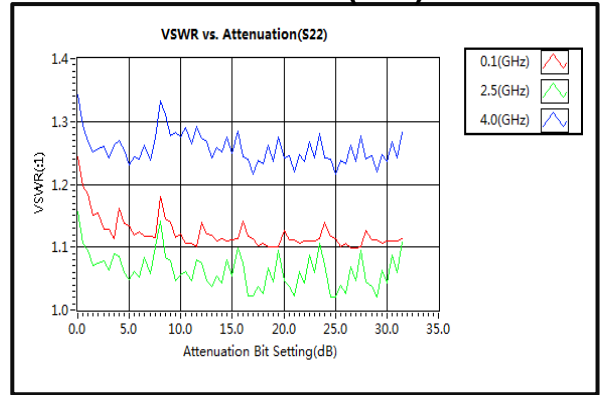
Attenuation vs. Frequency



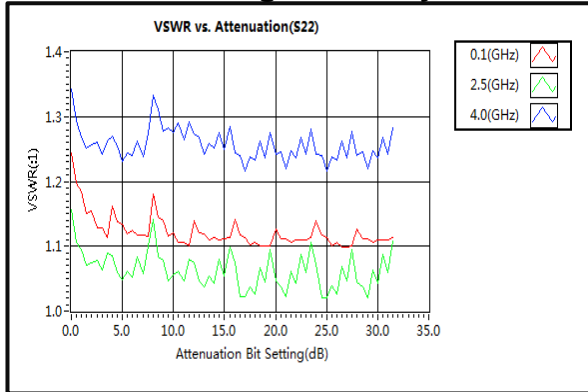
VSWR vs. Attenuation(S11)



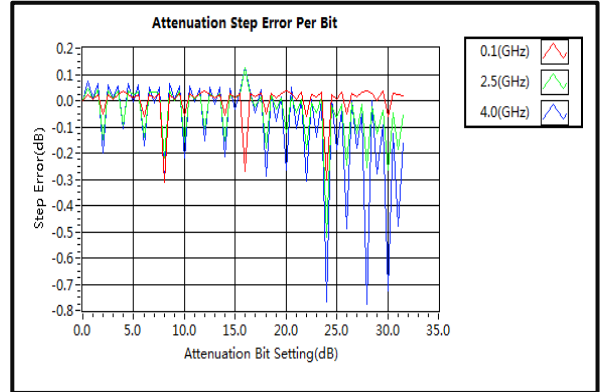
VSWR vs. Attenuation(S22)



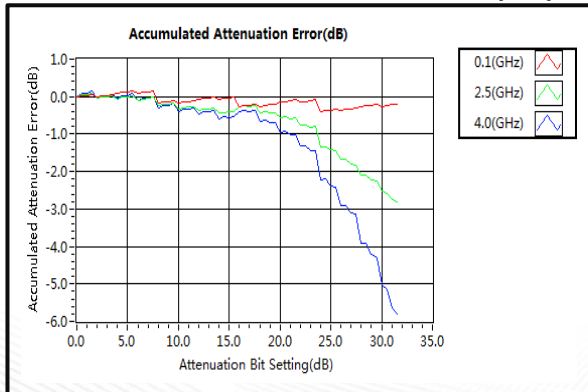
Attenuation Range Linearity



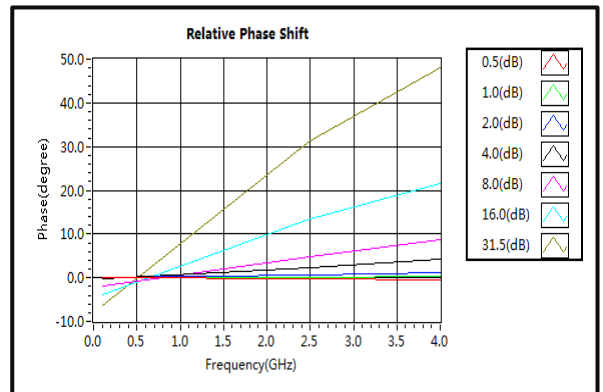
Attenuation Step Error Per Bit (dB)



Accumulated Attenuation Error (dB)

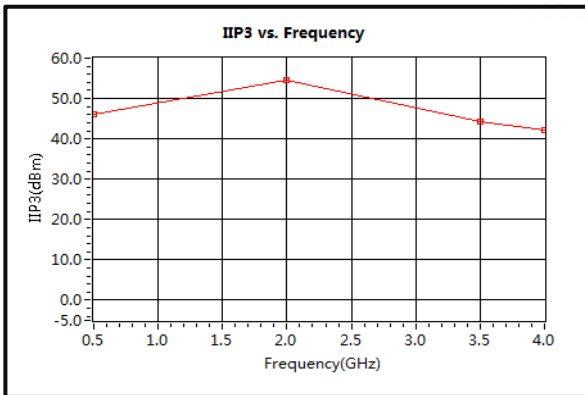


Relative Phase Shift

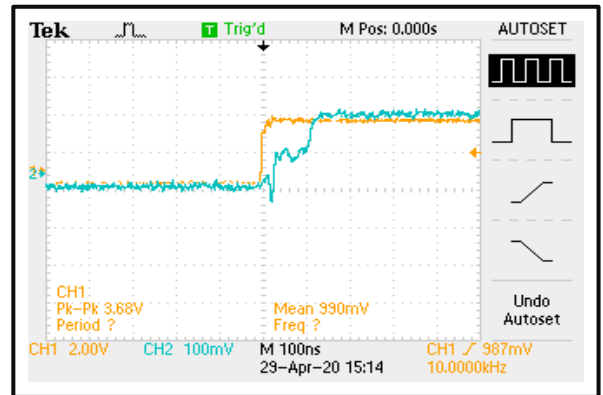




IIP3



Speed



Speed

