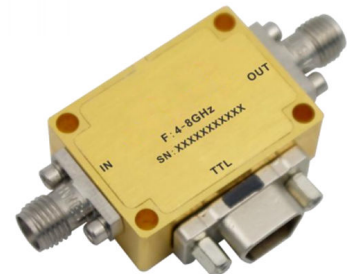




# Digital Non-Dispersive 360° Phase Shifter 4 - 8GHz

## Features

- Wide Band Operation 4-8GHz
- 360° Phase Shift
- Fast Switching Speed
- Customization available upon request
- Hermetically sealed package up to 60,000 ft available upon request.



Parameters	Min.	Typ.	Max.	Units
Frequency Range	4		8	GHz
Phase Range		360		deg
Control Bits		6		Bit
Control Step size		5.625		deg
Insertion Loss		6	8.5	dB
Insertion Loss Temperature Coefficient		0.008		dB/ °C
Phase Flatness		±15	±30	deg
Input VSWR		1.5	2	: 1
Output VSWR		1.5	2	: 1
Input 1 dB Compression Point(P1dB)		27		dBm
Input Ip3		45		dBm
Weight	1.5 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%
RF Input power	+30dBm

### 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
DBDP0604000800A	4-8GHz Digital Phase Shifter

### Outline Drawing:

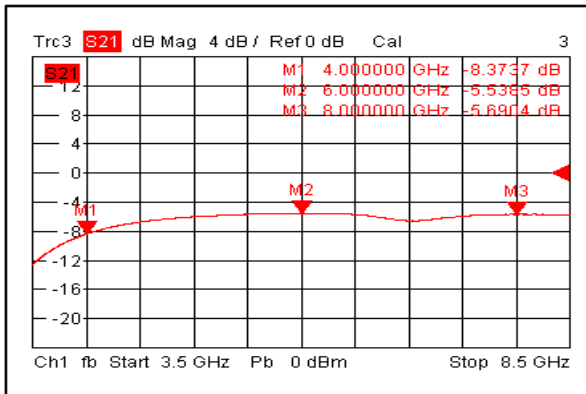
All Dimensions in mm (inches)

The drawing shows the physical dimensions of the phase shifter. Key dimensions include: 5.5 [0.217] for the top mounting hole, 14.35 [0.565] for the top width, 3 [0.118] for the top thickness, 10 [0.394] for the top distance, 28 [1.102] and 24 [0.945] for the bottom width, 20 [0.787] and 16 [0.630] for the bottom distance, and 2-φ2.8 [0.11] THRU for the bottom mounting holes. A 2-56THREAD hole is also indicated. The pin configuration for the MICRO-D9(Female) connector is shown with pins 1-9 labeled: 1 (-5V), 2 (GND), 3 (C1), 4 (C2), 5 (C3), 6 (C4), 7 (C5), 8 (C6), and 9 (NC). The device is labeled with 'RFECHO', 'F:4-8GHz', 'SN:XXXXXXXXXX', and 'TTL'.

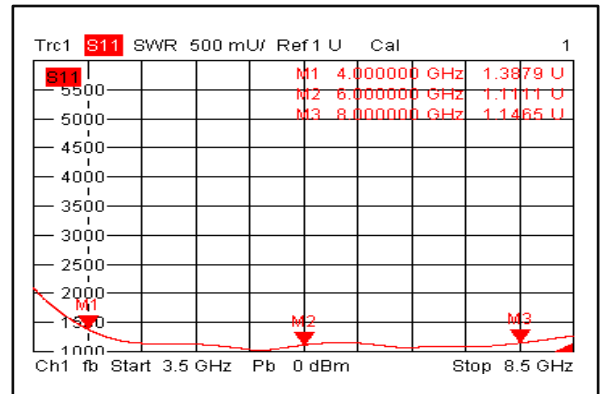
TTL Control Voltage THRESHOLD						Low(0)=0~0.8V
Control Voltage Input						High(1)=2~5V
C6	C5	C4	C3	C2	C1	Phase Shift (Degree)
0	0	0	0	0	0	Reference
0	0	0	0	0	1	5.6
0	0	0	0	1	0	11.25
0	0	0	1	0	0	22.5
0	0	1	0	0	0	45
0	1	0	0	0	0	90
1	0	0	0	0	0	180
1	1	1	1	1	1	354



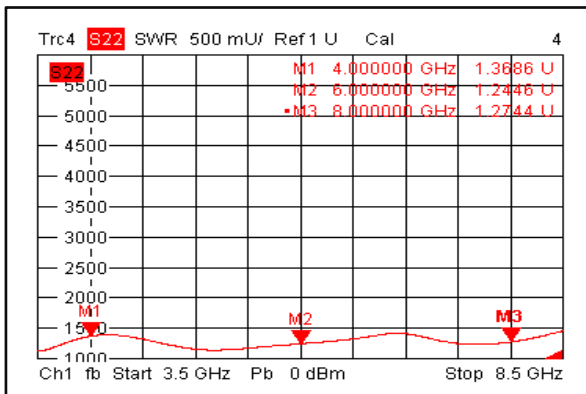
### Insertion Loss @+25°C



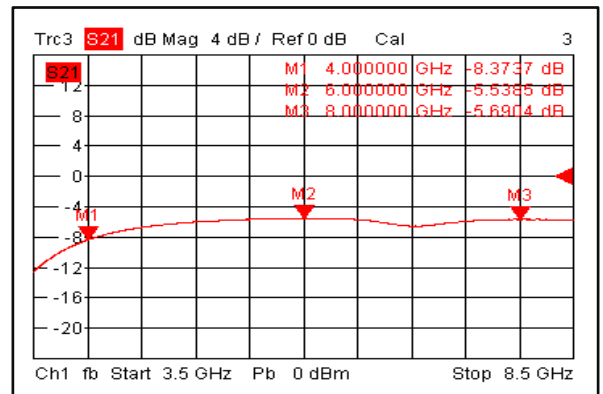
### Input VSWR @+25°C



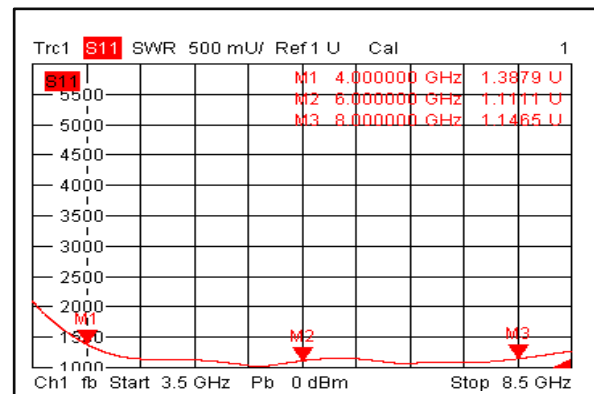
### Output VSWR @+25°C



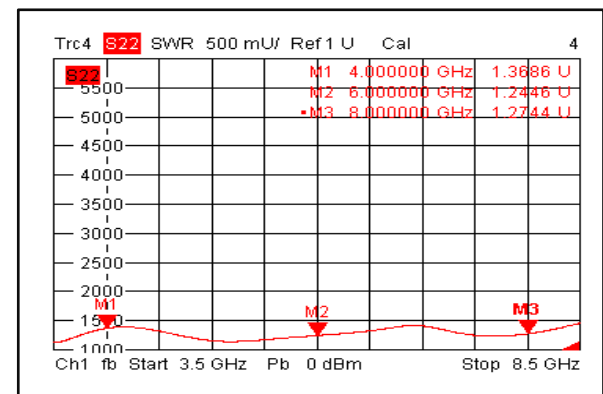
### Insertion Loss @-40°C



### Input VSWR @-40°C

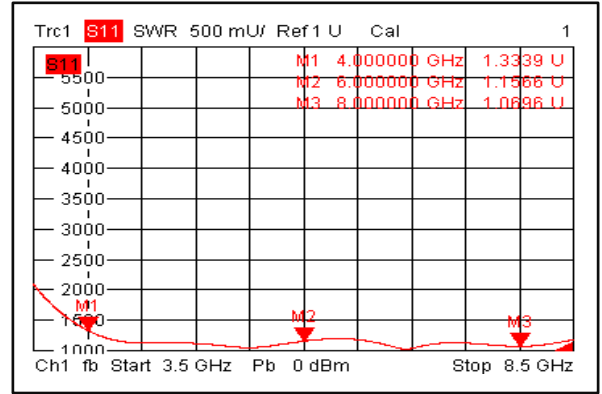
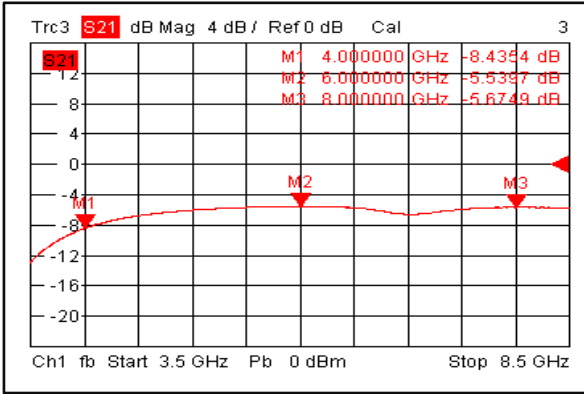


### Output VSWR @-40°C

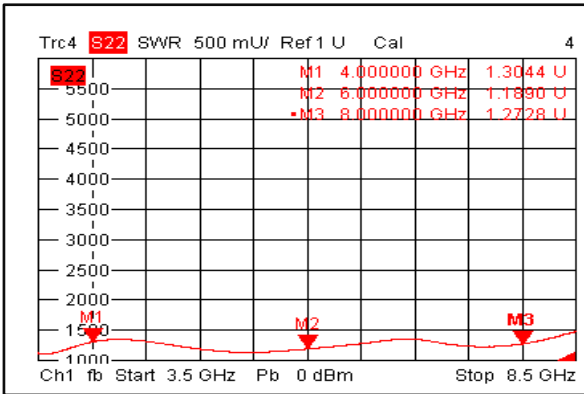




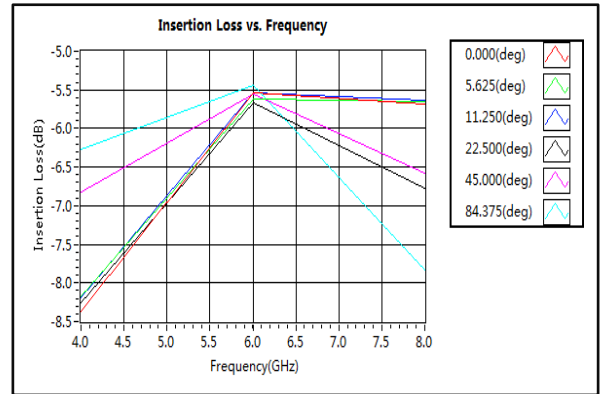
### Input VSWR @+85°C



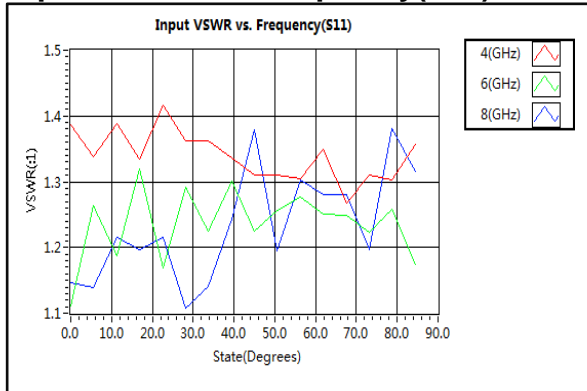
### Output VSWR @+85°C



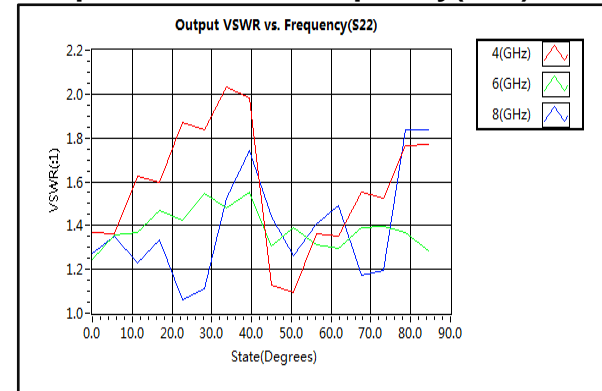
### Insertion Loss vs. Frequency



### Input VSWR vs. Frequency(S11)

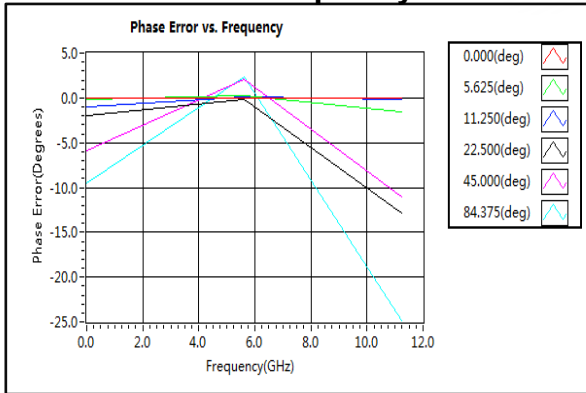


### Output VSWR vs. Frequency(S22)

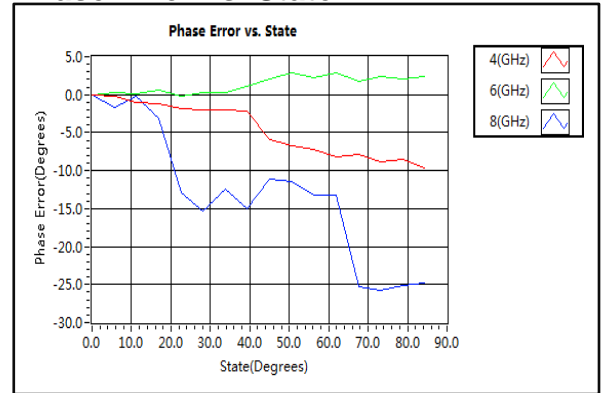




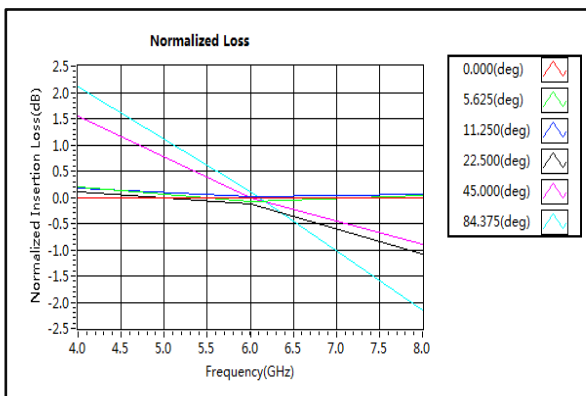
### Phase Error vs. Frequency



### Phase Error vs. State



### Normalized Loss . All States



### Relative Phase Shift vs. Frequency

