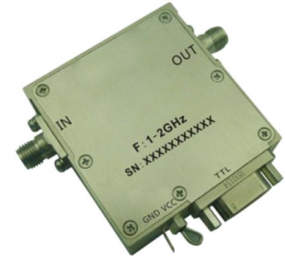




# Digital Control 360°Phase Shifter 1 - 2GHz

## Features

- Wide Band Operation 1-2GHz
- 360° Phase Shift
- Fast Switching Speed



Parameters	Min	Typ.	Max	Units
Frequency Range	1		2	GHz
Phase Range		360		deg
Control Bits			6	bit
Control Step size		5.6		deg
Insertion Loss		4.0	5.5	dB
Insertion Loss Temperature Coefficient		0.003		dB / °C
Phase Flatness		±5	±15	deg
Input VSWR		1.5	2.5	: 1
Output VSWR		1.5	2.5	: 1
Input 1dB Compression Point (P1dB)		27		dBm
Input Ip3		32		dBm
Switching Speed		500		us
Weight	2.5 Max.			ounces
Impedance	50			Ω
Bias Current(+12V)	200 Max.			mA
Input / Output Connectors	SMA - Female			
Interface and Control Connector	MICRO-D(9)- Female			
Finish	Nickel Plated			
Material	Aluminum			
Sealing	Hermetically Sealed (Optional)			



### Absolute Maximum Ratings

Bias Voltage	+15V
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
DBDP0601000200A	1-2GHz Digital Phase Shifter

### Outline Drawing:

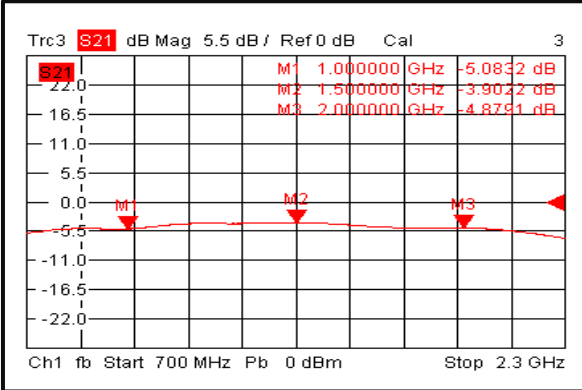
All Dimensions in mm (inches) Housing Tolerances  $\pm 0.1$  (0.004)

The drawing shows the physical dimensions and pin configurations of the RFecho 1-2GHz Digital Phase Shifter. Key dimensions include a length of 43 mm (1.693 inches) and a width of 12 mm (0.472 inches). The front view shows an IN and OUT port, and a MICRO-D15 (Female) connector with pins labeled C1 through C6, NC, GND, and NC. The top view shows a pinout for the MICRO-D15 connector: 1 (C1), 2 (C2), 3 (C3), 4 (C4), 5 (C5), 6 (C6), 7-8 (NC), 9 (GND), 10-15 (NC). The side view shows a height of 40 mm (1.575 inches) and a depth of 10.5 mm (0.413 inches). The drawing also includes a truth table for the phase shifter.

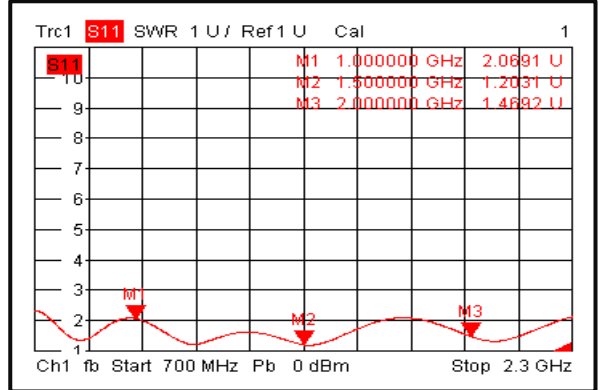
Control Voltage Input						Phase Shift (Degrees)
C6	C5	C4	C3	C2	C1	
1	1	1	1	1	1	Reference
1	1	1	1	1	0	5.6
1	1	1	1	0	1	11.25
1	1	1	0	1	1	22.5
1	1	0	1	1	1	45
1	0	1	1	1	1	90
0	1	1	1	1	1	180
0	0	0	0	0	0	354.3



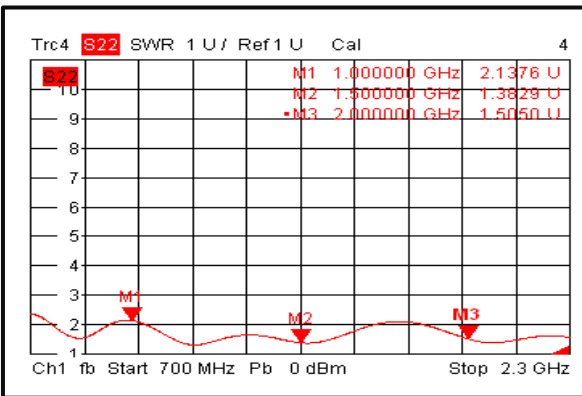
### Insertion Loss @+25°C



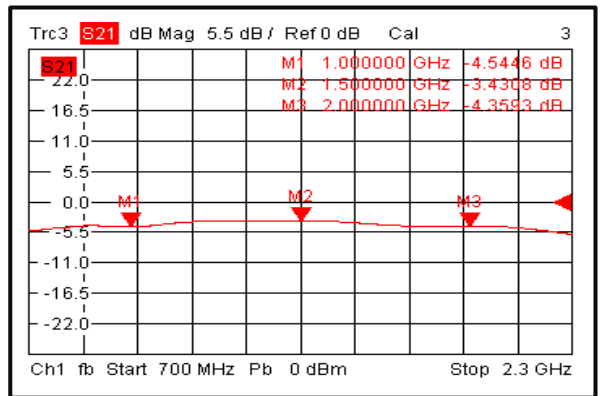
### Input VSWR @+25°C



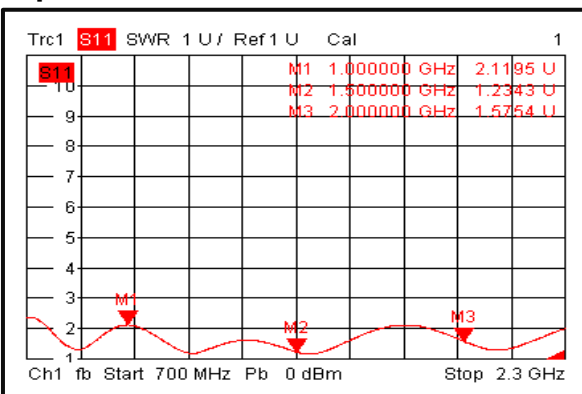
### Output VSWR @+25°C



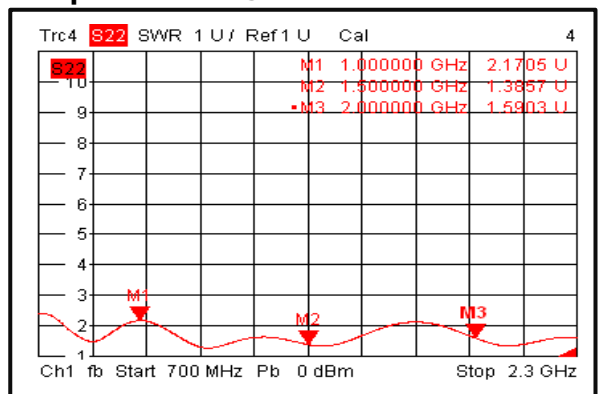
### Insertion Loss @-40°C



### Input VSWR @-40°C

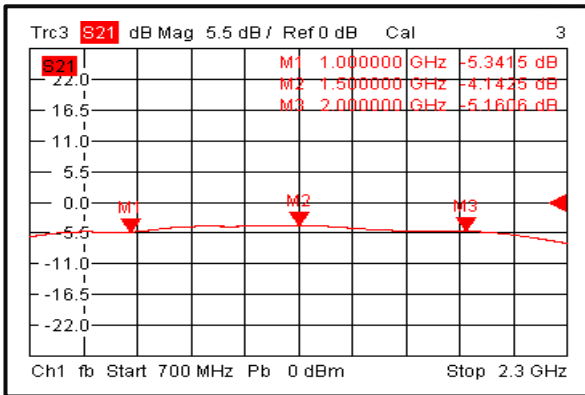


### Output VSWR @-40°C

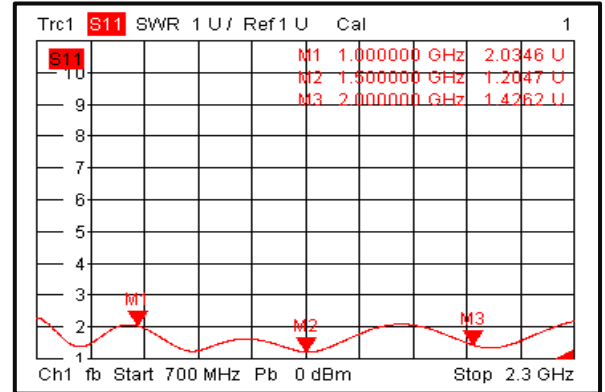




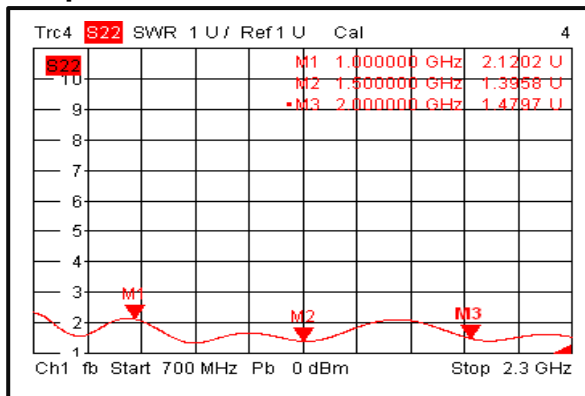
### Insertion Loss @+85°C



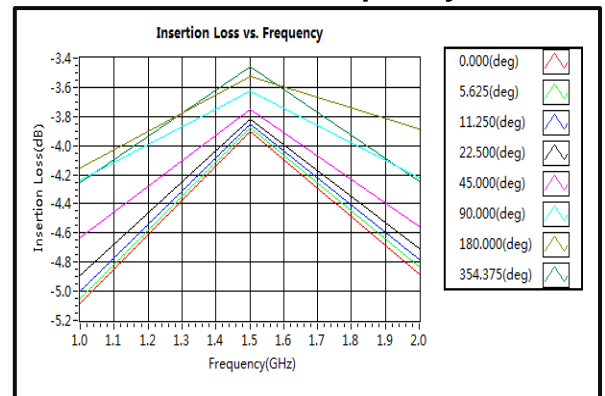
### Input VSWR @+85°C



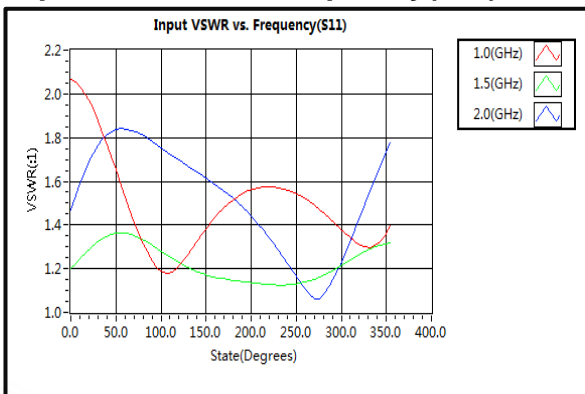
### Output VSWR @+85°C



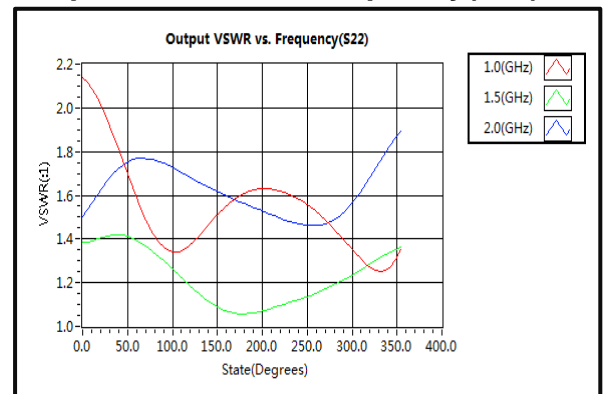
### Insertion Loss vs. Frequency



### Input VSWR vs. Frequency(s11)

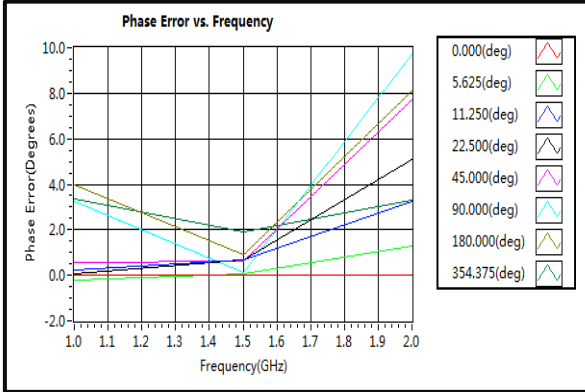


### Output VSWR vs. Frequency(s22)

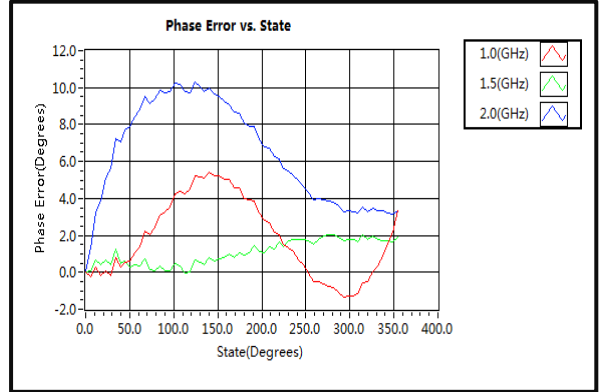




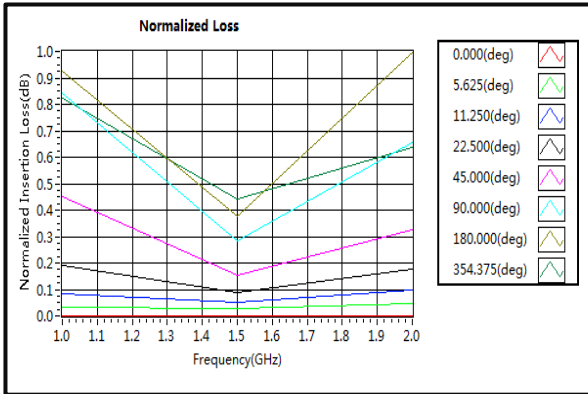
### Phase Error vs. Frequency



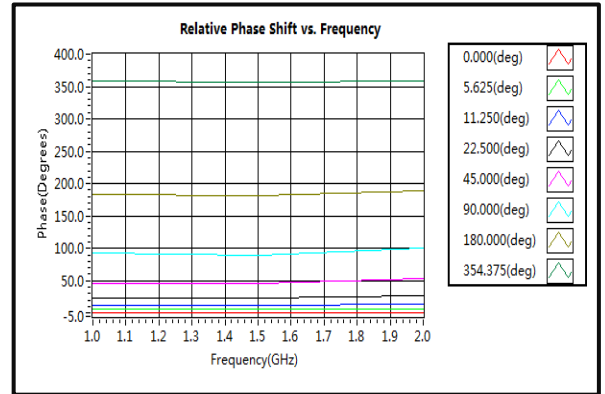
### Phase Error vs. State



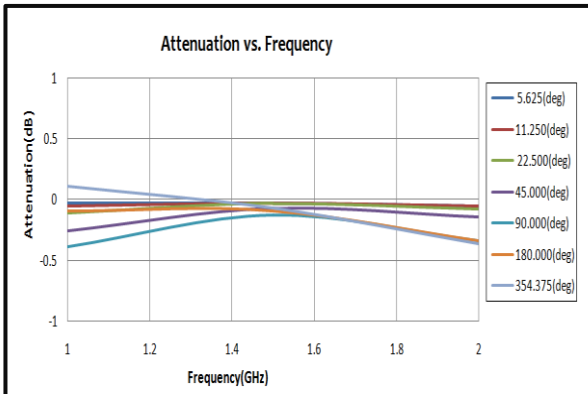
### Normalized Loss. All States



### Relative Phase Shift vs. Frequency



### Attenuation vs. Frequency



### IIP3

