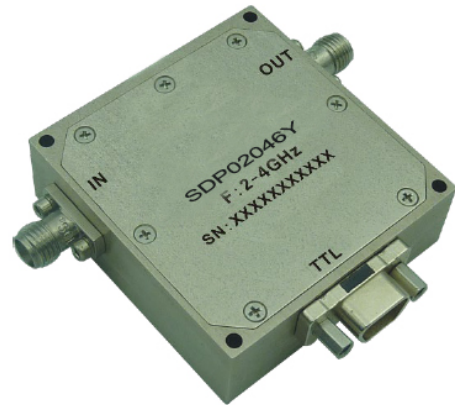


## Features

- Wide Band Operation 2-4GHz
- 360° Phase Shift
- Fast Switching Speed



Parameters	Min.	Typ.	Max.	Units
Frequency Range	2		4	GHz
Phase Range		360		deg
Control Bits			6	Bit
Control Step size		5.625		deg
Insertion Loss			6	dB
Insertion Loss Temperature Coefficient		0.003		dB/ °C
Phase Flatness		10	30	deg
Input VSWR		2	3	: 1
Output VSWR		2	3	: 1
Input 1 dB Compression Point(P1dB)		27		dBm
Switching Speed		500		us
Weight	2.2 Max.			Ounces
Impedance	50			Ω
Bias Current (+5V)	60 Max.			mA
Input / Output Connectors	SMA-Female			
Interface and Control Connector	MICRO-D9(Female)			
Finish	Nickel Plated			
Material	Aluminum			
Sealing	Hermetically Sealed ( Optional )			

**Digital Non-Dispersive 360° Phase Shifter 2 - 4GHz**
**Absolute Maximum Ratings**

Bias Voltage	+5V±10%
RF Input power	+27dBm

**Environmental Specifications**

Operational Temperature	-40°C~+85°C(Case Temperature)
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
SDP02046Y	2-4GHz Digital Phase Shifter

**Outline Drawing:**

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

**Top View Dimensions:**  
 Total length: 14.35 [0.565]  
 Distance from left edge to center: 6.2 [0.244]  
 Distance from center to right edge: 4.5 [0.177]  
 Thread: 2-56 THREAD DP3.5 [0.138]

**Side View Dimensions:**  
 Total height: 7.35 [0.291]  
 Pin height: 1.1 [0.043]

**Pin Configuration (MICRO-D9(Female)):**  
 1: +5V, 2: GND, 3: C1, 4: C2, 5: C3, 6: C4, 7: C5, 8: C6, 9: NC

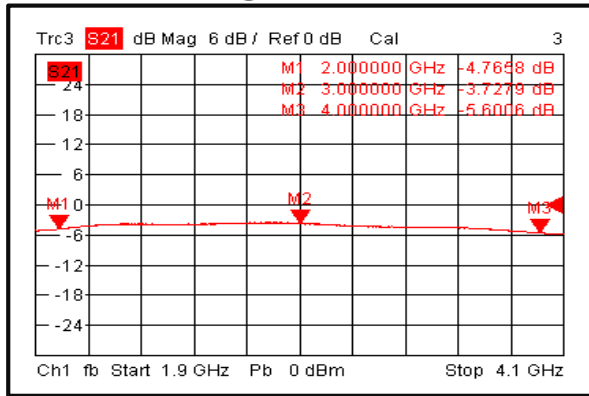
**Front View Dimensions:**  
 Total width: 43 [1.693]  
 Distance between IN and OUT: 39 [1.535]  
 IN offset: 12 [0.472]  
 OUT offset: 41 [1.614]  
 TTL offset: 21.5 [0.846]  
 Hole diameter: 4-φ 2.2 [φ 0.087] THRU

**Truth Table**

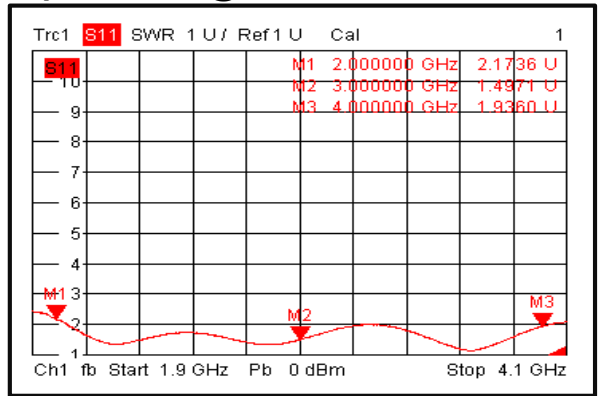
Control Voltage Input						Phase Shift (Degrees)
C6	C5	C4	C3	C2	C1	
1	1	1	1	1	1	Reference
1	1	1	1	1	0	5.625
1	1	1	1	0	1	11.25
1	1	1	0	1	1	22.5
1	1	0	1	1	1	45
1	0	1	1	1	1	90
0	1	1	1	1	1	180
0	0	0	0	0	0	354.375

Digital Non-Dispersive 360° Phase Shifter 2 - 4GHz

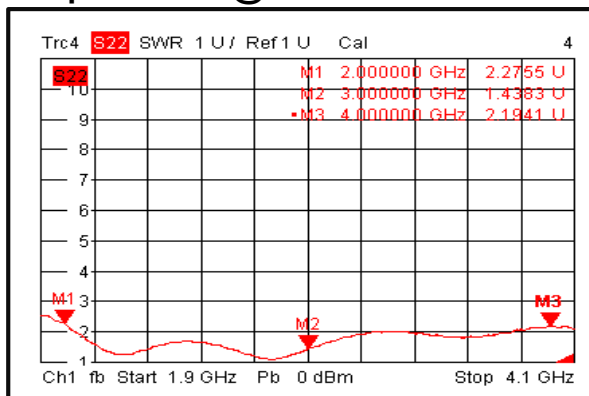
Insertion Loss@+25°C



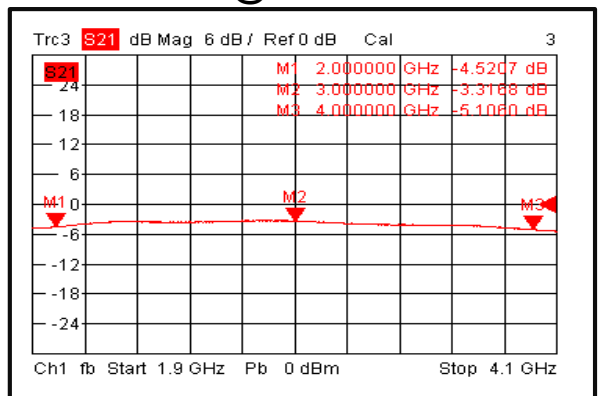
Input VSWR @+25°C



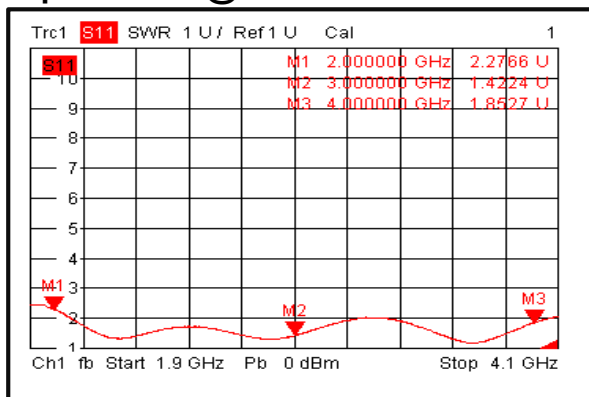
Output VSWR @+25°C



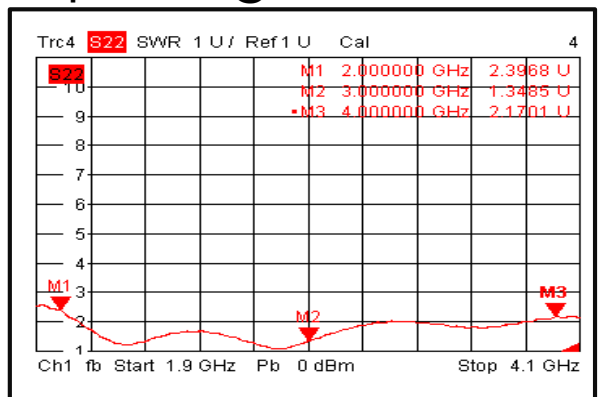
Insertion Loss@-40°C



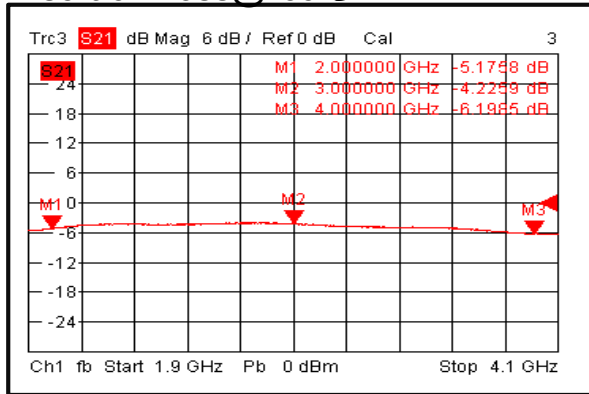
Input VSWR @-40°C



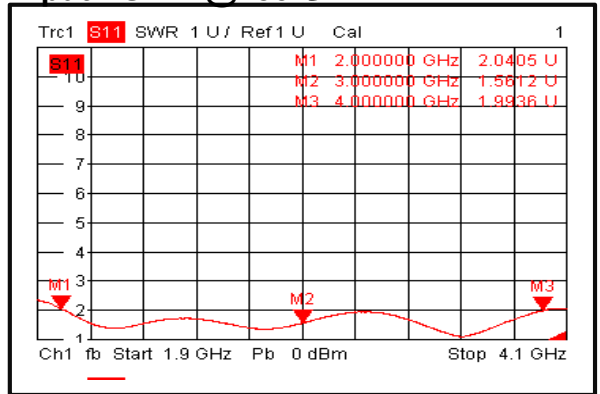
Output VSWR @-40°C



Insertion Loss@+85°C

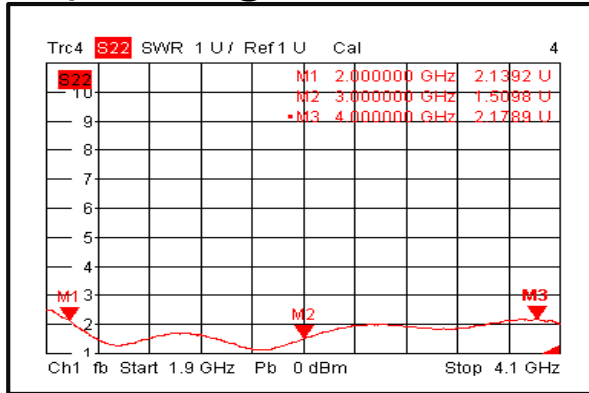


Input VSWR @+85°C

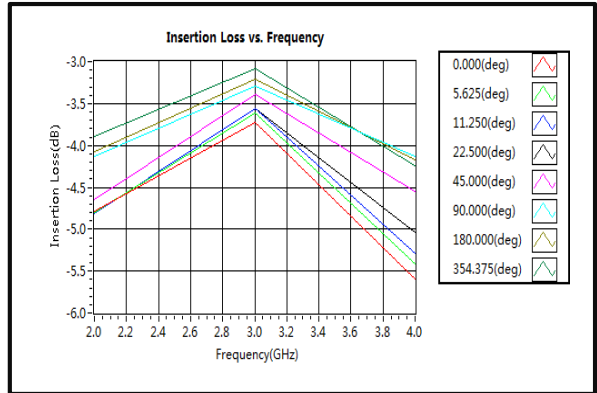


Digital Non-Dispersive 360° Phase Shifter 2 - 4GHz

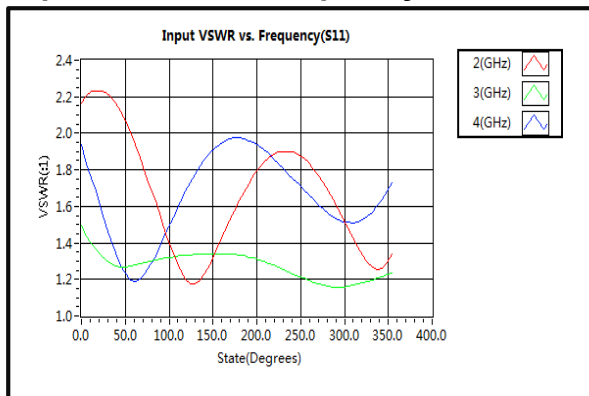
Output VSWR @+85°C



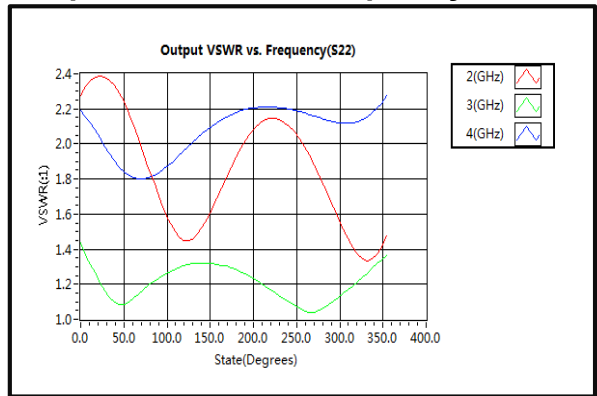
Insertion Loss vs. Frequency



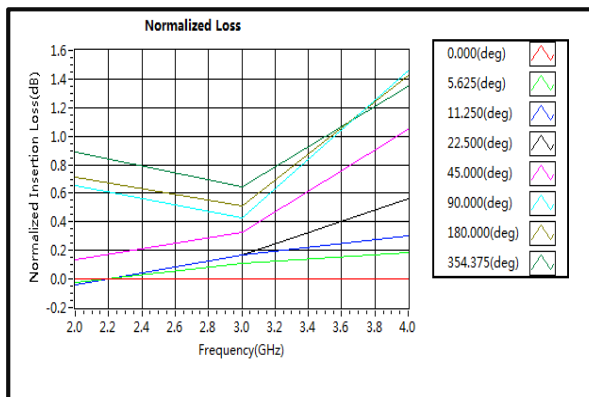
Input VSWR vs. Frequency



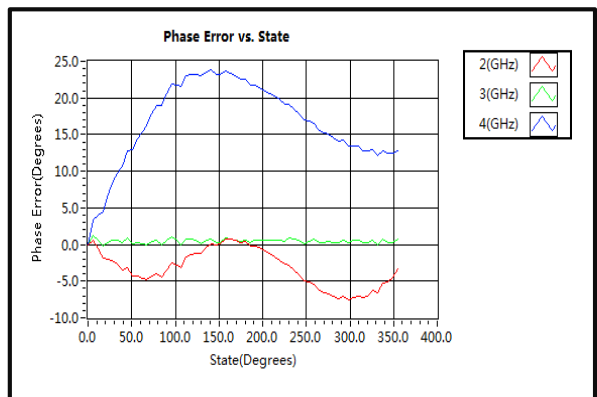
Output VSWR vs. Frequency



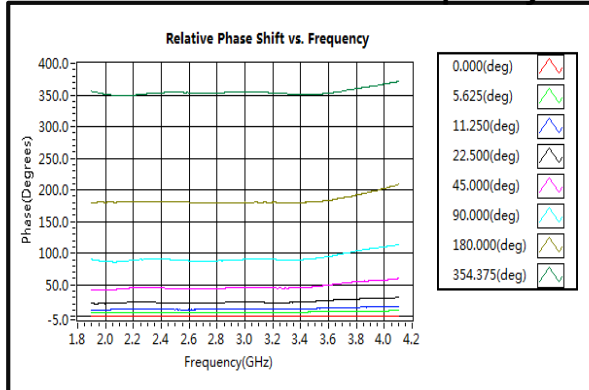
Normalized Loss . All States



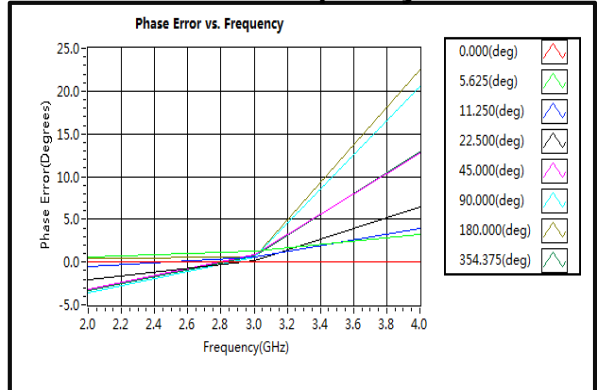
Phase Error vs. State



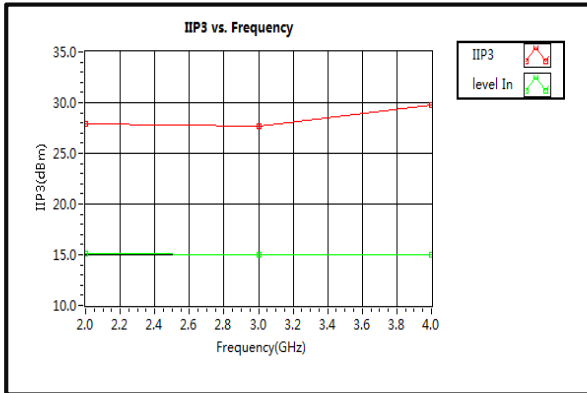
Relative Phase Shift vs. Frequency



Phase Error vs. Frequency



**IIP3**



**Speed**



**Speed**



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