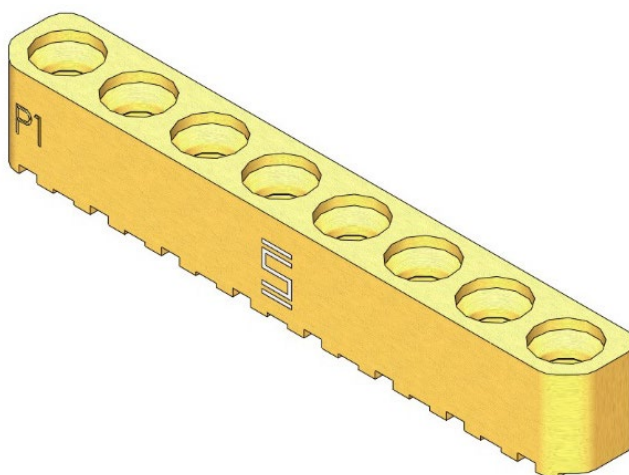




RF Characterization Report

GPPC-PF-1-08-HG-ST-SL



Test Date: Jun 2023

Description

**Magnum RF™ Ganged, Multi-Position SMPM Block,
Stub Launch, 0.140" Pitch**

Series: GPPC**Description:** Magnum RF™ Ganged, Multi-Position SMPM Block, Stub Launch, 0.140" Pitch

Table of Contents

Test Setup Information	1
Scope:	1
Instrument Setup & Test Accessories:	1
Calibration Type:	1
Adapter Use:	1
Test Fixtures Description	2
PCB-GPPCSL-111536-SIG-0 Test Fixtures	2
PCB-GPPCSL-111536-SIG-0 PCB Layout	2
GPPC-PF-1-08-HG-ST-SL Test Definition	3
Connector Under Test:	3
Results: GPPC-PF-1-08-HG-ST-SL	4
Layer 1 (Microstrip)	6
VSWR	6
Return Loss	6
Insertion Loss	7
Layer 2 (Stripline)	8
VSWR	8
Return Loss	8
Insertion Loss	9
Layer 5 (Stripline)	10
VSWR	10
Return Loss	10
Insertion Loss	11
Isolation	12
Results: GPPC-PF-1-08-HG-ST-SL	13
Layer 1 (Microstrip)	13
VSWR	13
Return Loss	14
Insertion Loss	14
Layer 2 (Stripline)	15
VSWR	15
Return Loss	15
Insertion Loss	16
Layer 5 (Stripline)	17
VSWR	17
Return Loss	17
Insertion Loss	18

Series: GPPC

Description: Magnum RF™ Ganged, Multi-Position SMPM Block, Stub Launch, 0.140" Pitch

Test Setup Information

Scope:

Provide standing wave ratio, return loss and insertion loss parameters for SMPM Plug, GPPC Series Magnum RF™ Ganged, Multi-Position SMPM Block, Stub Launch.

Instrument Setup & Test Accessories:

Network Analyzer	Keysight PNA N5227B
Averaging Factor	1
Smoothing	Off
IF Bandwidth	1 KHz
Sweep Start	10 MHz
Sweep End	55 GHz
Points	5500
Test Cables	Gore 0F0CACB036.0-LF (DC to 67 GHz)

Calibration Type:

A Keysight mechanical calibration is performed using the Keysight 1.85 mm Mechanical Calibration kit.

Calibration Kit	Keysight 85058B 1.85mm Mechanical Calibration kit
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Adapter Use:

CentricRF C4391 1.85mm Female to SMPM Female adapter was used for the measurements of GPPC-PF-1-08-HG-ST-SL. The adapter effects were removed from the measurement using the Fixture Removal method.

Series: GPPC

Description: Magnum RF™ Ganged, Multi-Position SMPM Block, Stub Launch, 0.140" Pitch

Test Fixtures Description

Both microstrip and stripline launch were implemented on the same test board PCB-GPPCSL-111536-SIG-0.

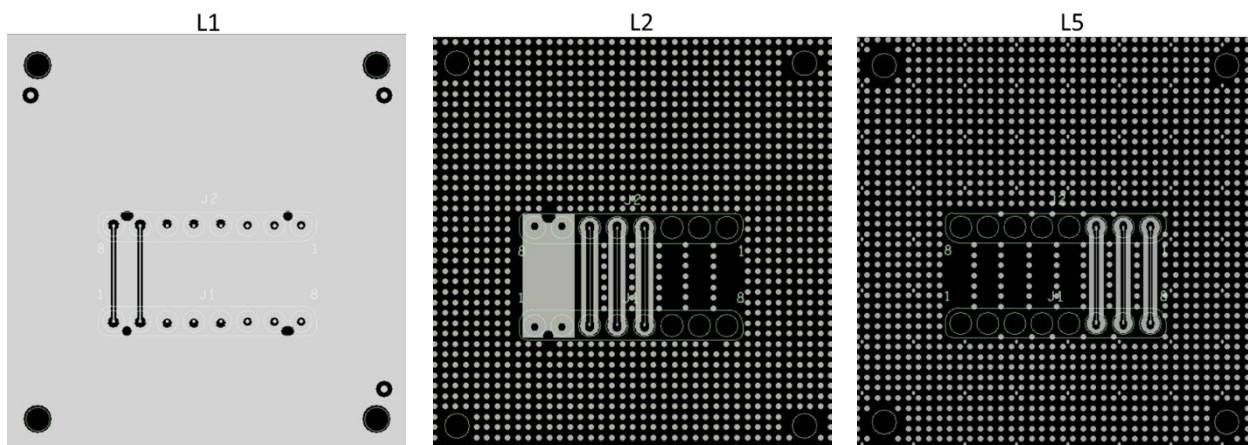
PCB-GPPCSL-111536-SIG-0 Test Fixtures

Shown below is a photograph of the test board.



PCB-GPPCSL-111536-SIG-0 PCB Layout

Artwork of the PCB design is shown below.



Series: GPPC

Description: Magnum RF™ Ganged, Multi-Position SMPM Block, Stub Launch, 0.140" Pitch

GPPC-PF-1-08-HG-ST-SL Test Definition

Part Number	End 1
GPPC-PF-1-08-HG-ST-SL	SMPM Plug

Connector Under Test:



Series: GPPC

Description: Magnum RF™ Ganged, Multi-Position SMPM Block, Stub Launch, 0.140" Pitch

Results: GPPC-PF-1-08-HG-ST-SL

The post processed results include one GPPC-PF-1-08-HG-ST-SL connector, launch, and 0.25" of PCB trace to minimize the effects of the test setup.

For the isolation measurements, adaptor cable assemblies were required due to the connectors .140" centerline spacing.



Cable assemblies used for isolation testing



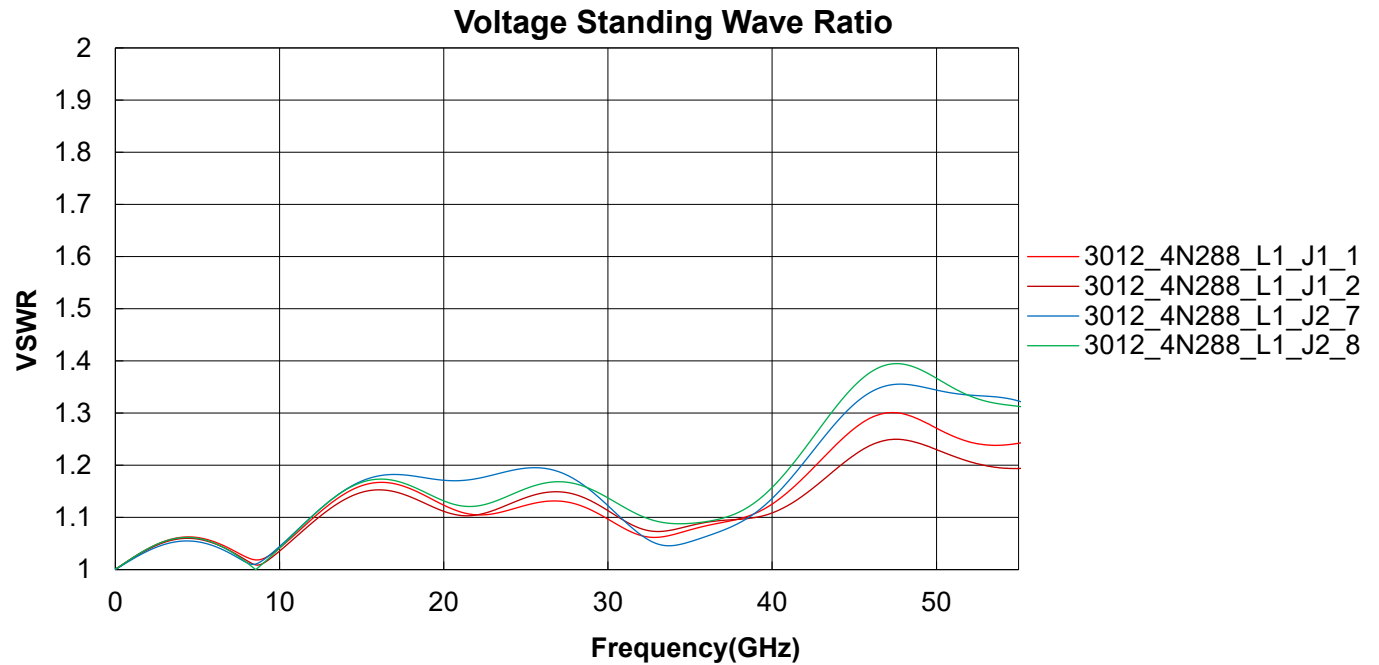
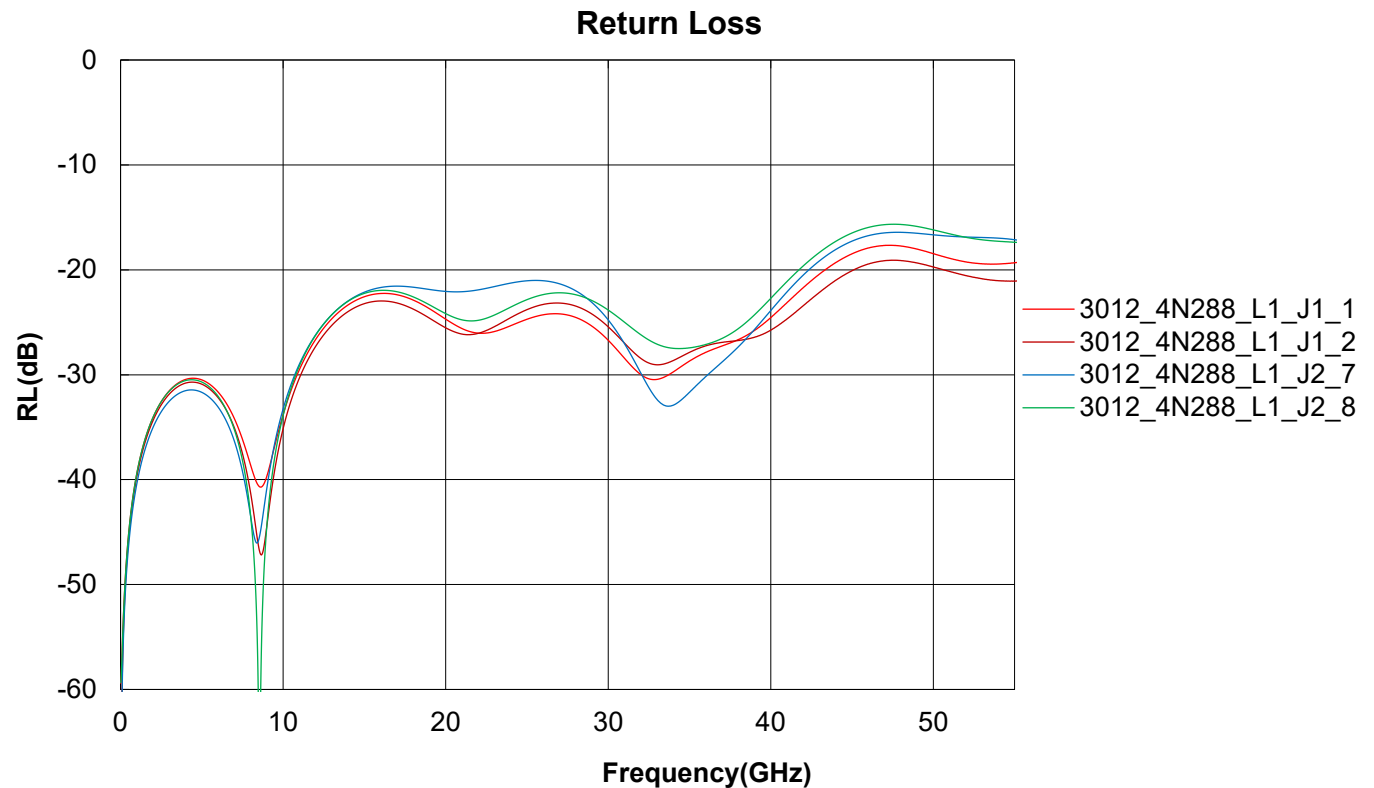
Isolation testing setup

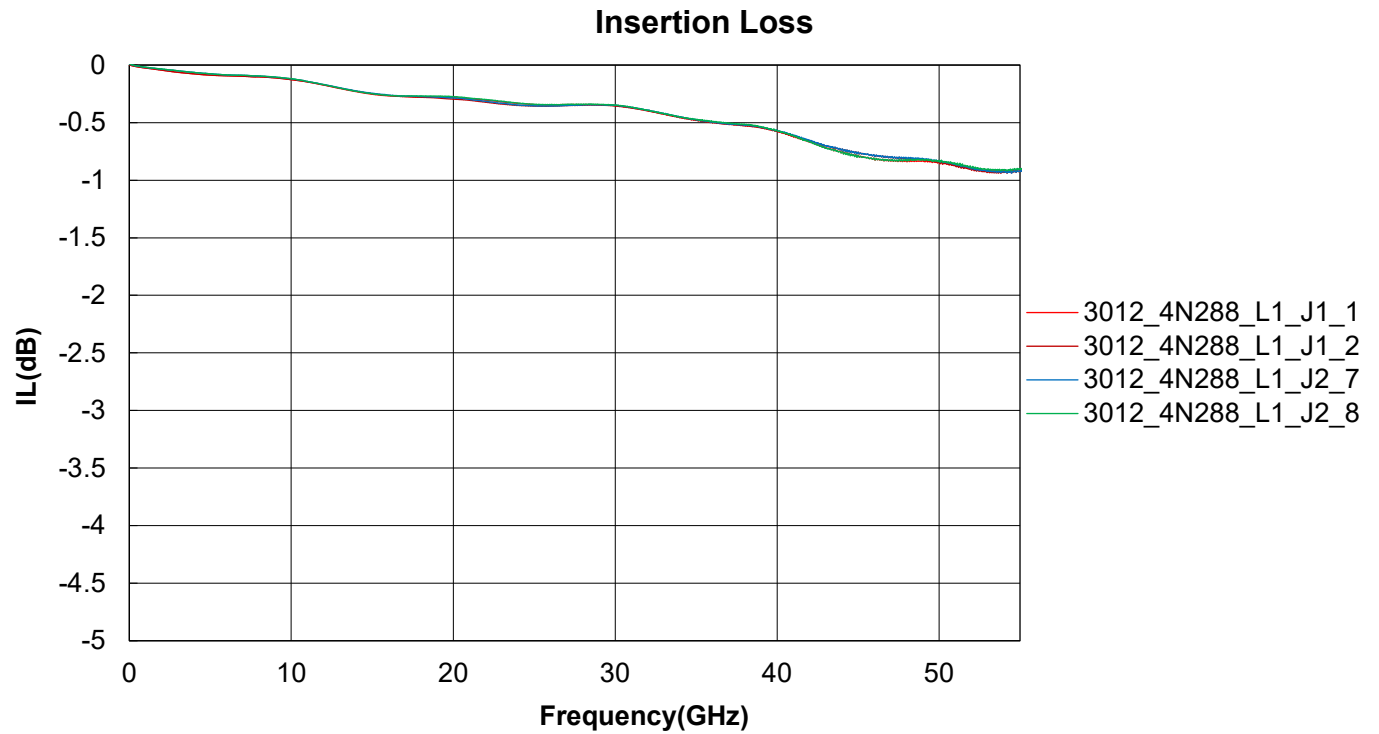
Series: GPPC

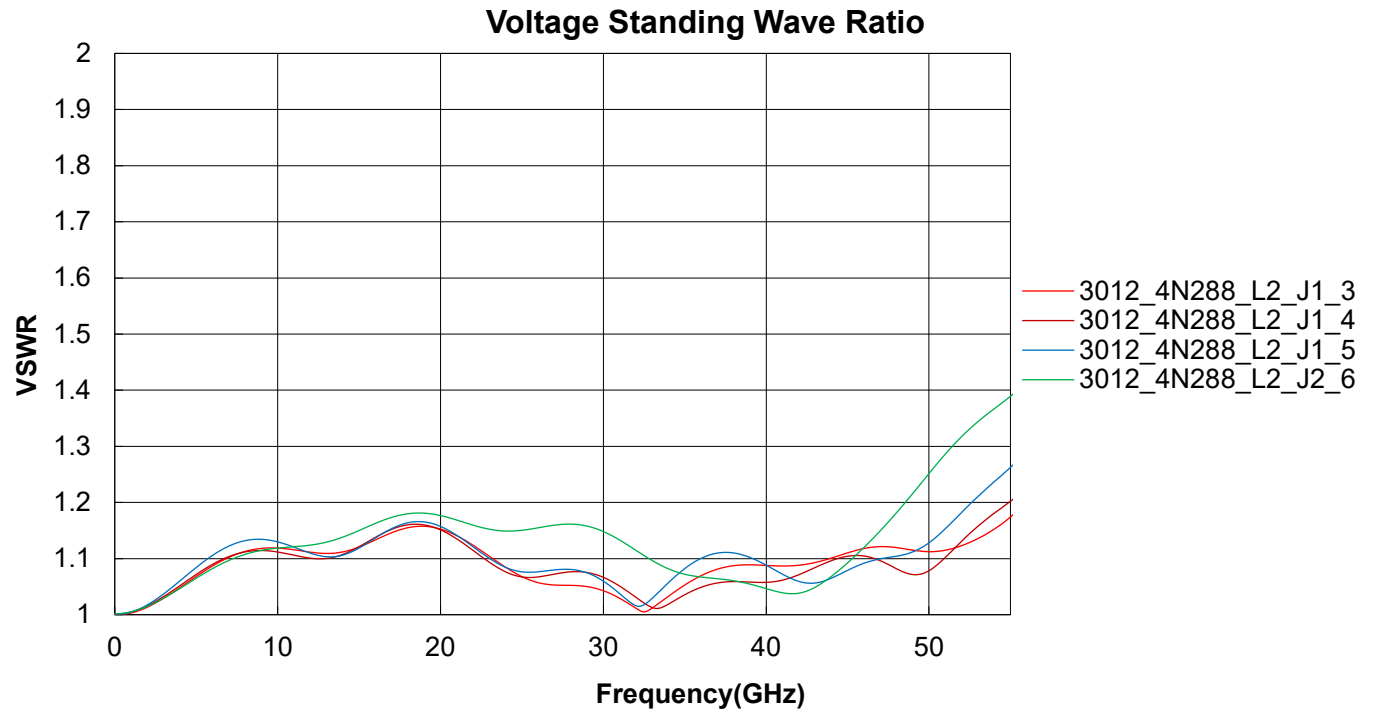
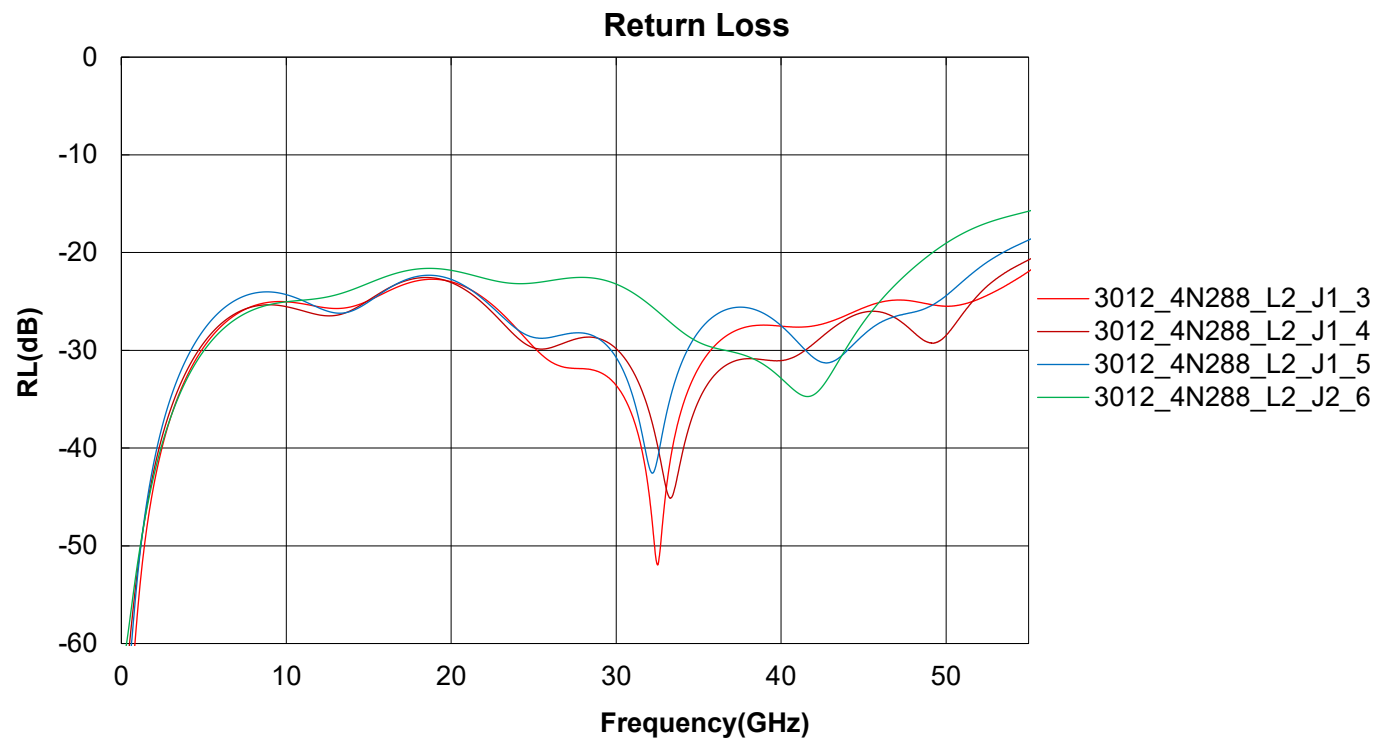
Description: Magnum RF™ Ganged, Multi-Position SMPM Block, Stub Launch, 0.140" Pitch

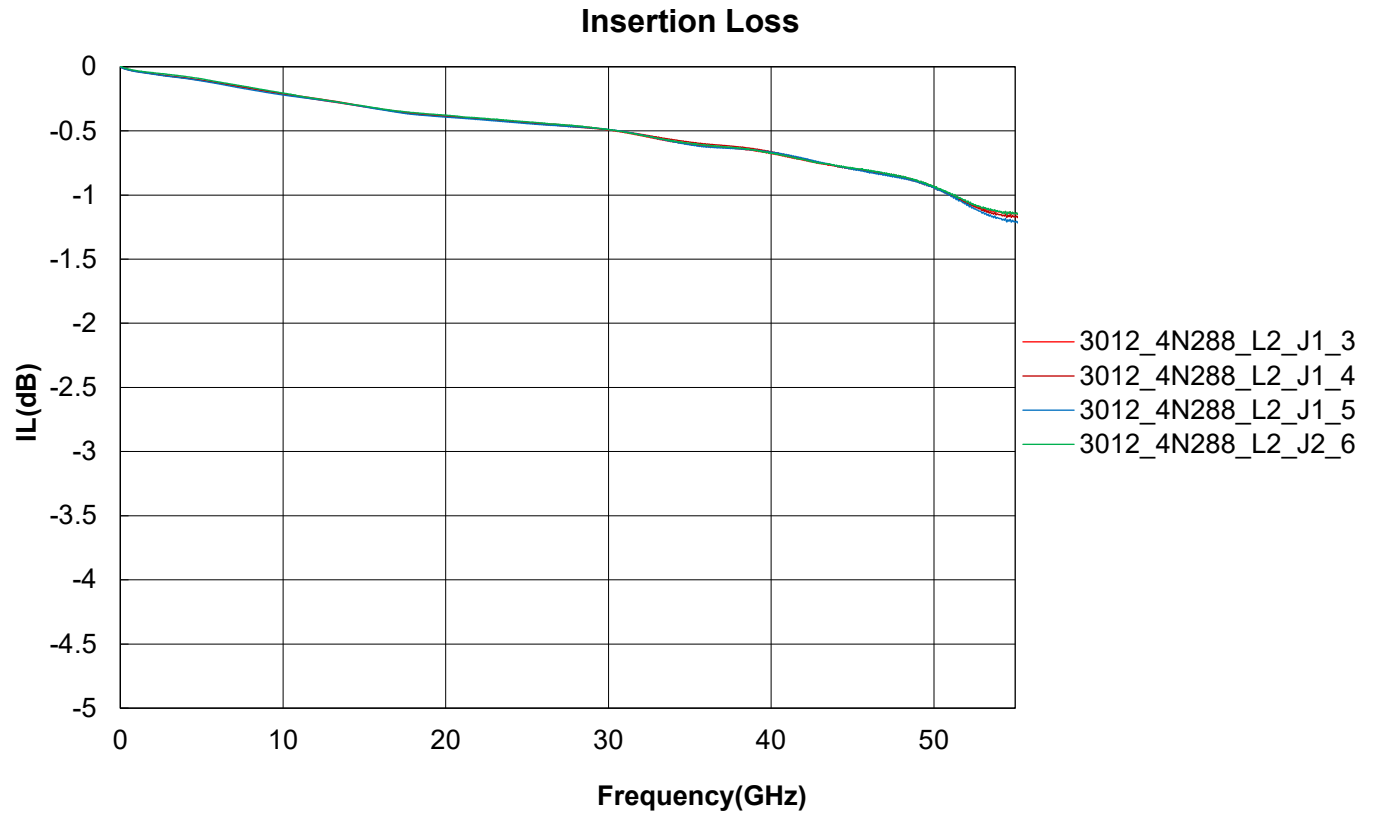
Description: 50 Ohm SMPM Plug			
Sample	SWR(max)	RL(dB, max)	IL(dB, min)
3012_4N288_L1_J1_1	1.30@47.40GHz	-17.66@47.40GHz	-0.93@53.81GHz
3012_4N288_L1_J1_2	1.25@47.47GHz	-19.08@47.47GHz	-0.94@53.81GHz
3012_4N288_L1_J2_7	1.36@47.84GHz	-16.42@47.84GHz	-0.94@54.49GHz
3012_4N288_L1_J2_8	1.39@47.56GHz	-15.66@47.56GHz	-0.92@54.20GHz
3012_4N288_L2_J1_3	1.17@55.00GHz	-21.93@55.00GHz	-1.15@54.48GHz
3012_4N288_L2_J1_4	1.20@55.00GHz	-20.75@55.00GHz	-1.17@54.49GHz
3012_4N288_L2_J1_5	1.26@55.00GHz	-18.71@55.00GHz	-1.21@54.76GHz
3012_4N288_L2_J2_6	1.39@55.00GHz	-15.76@55.00GHz	-1.15@54.49GHz
3012_4N288_L5_J1_6	1.20@35.33GHz	-21.0@35.33GHz	-1.23@55.00GHz
3012_4N288_L5_J1_7	1.22@34.43GHz	-20.22@34.43GHz	-1.20@55.00GHz
3012_4N288_L5_J1_8	1.23@35.73GHz	-19.80@35.73GHz	-1.22@55.00GHz
3012_4N288_L5_J2_1	1.33@43.67GHz	-16.97@43.67GHz	-1.21@55.00GHz
3012_4N288_L5_J2_3	1.37@55.00GHz	-16.19@55.00GHz	-1.21@55.00GHz

Description: 50 Ohm SMPM Plug	
Sample	Isolation (Max)
3012_Layer1_J1_1_2	-57.19 dB@31.98GHz
3012_Layer2_J1_3_4	-77.64 dB@50.21GHz
3012_Layer2_J1_4_5	-75.67 dB@54.77GHz
3012_Layer5_J1_6_7	-59.81 dB@53.37GHz

Series: GPPC**Description:** Magnum RF™ Ganged, Multi-Position SMPM Block, Stub Launch, 0.140" Pitch**Layer 1 (Microstrip)**VSWRReturn Loss

Series: GPPC**Description:** Magnum RF™ Ganged, Multi-Position SMPM Block, Stub Launch, 0.140" PitchInsertion Loss

Series: GPPC**Description:** Magnum RF™ Ganged, Multi-Position SMPM Block, Stub Launch, 0.140" Pitch**Layer 2 (Stripline)**VSWRReturn Loss

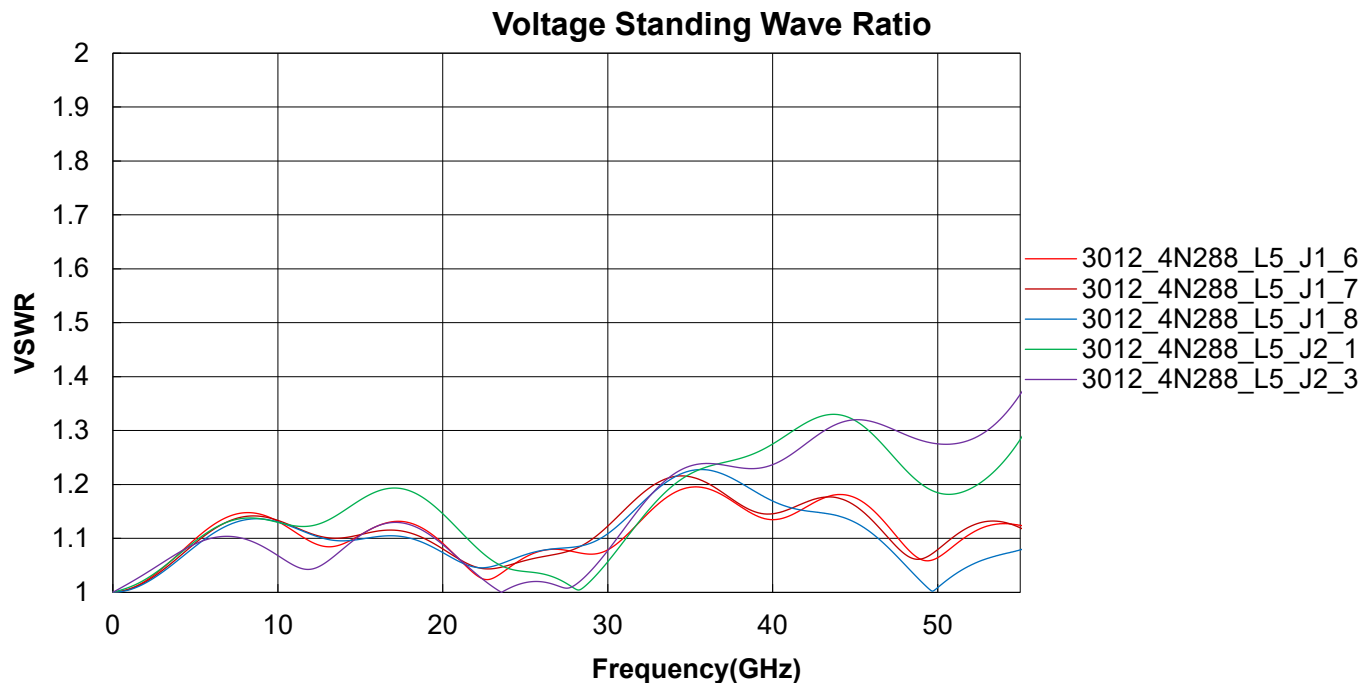
Series: GPPC**Description:** Magnum RF™ Ganged, Multi-Position SMPM Block, Stub Launch, 0.140" PitchInsertion Loss

Series: GPPC

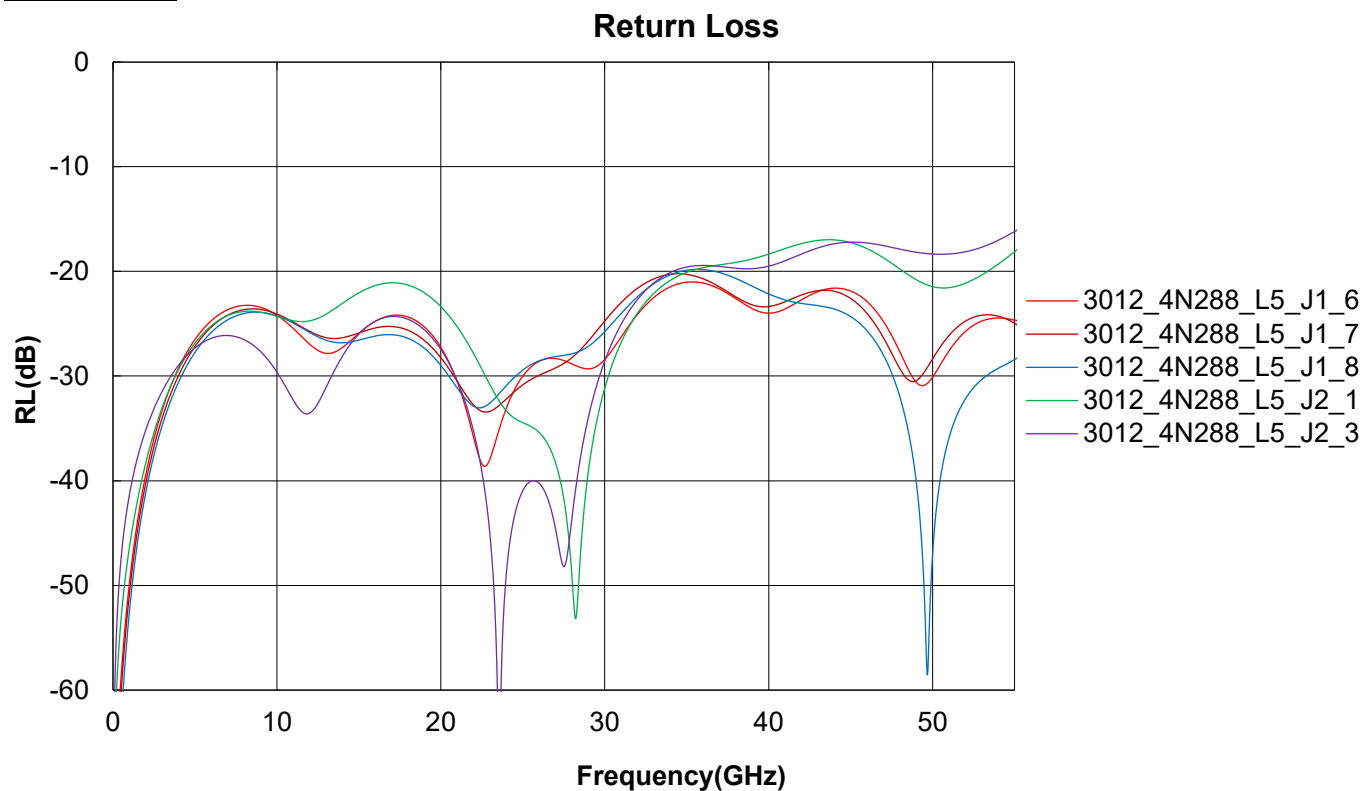
Description: Magnum RF™ Ganged, Multi-Position SMPM Block, Stub Launch, 0.140" Pitch

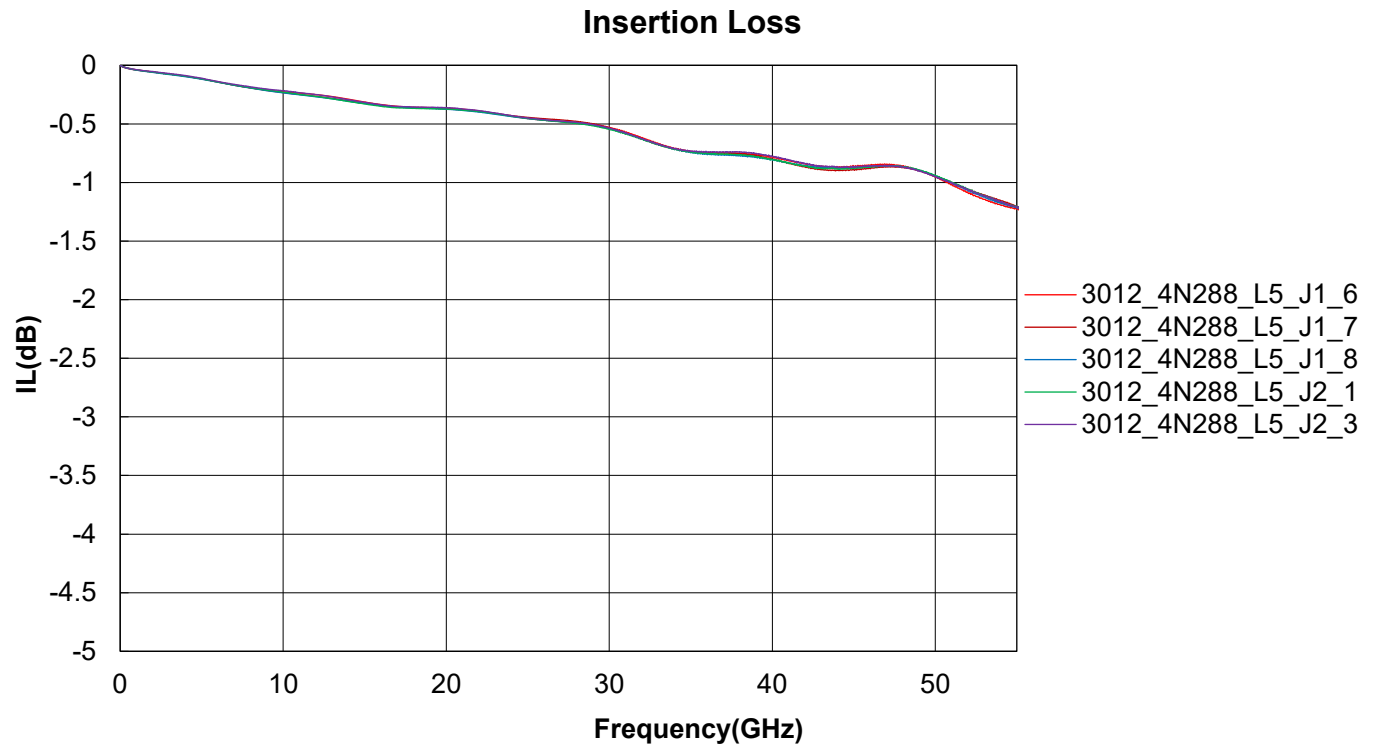
Layer 5 (Stripline)

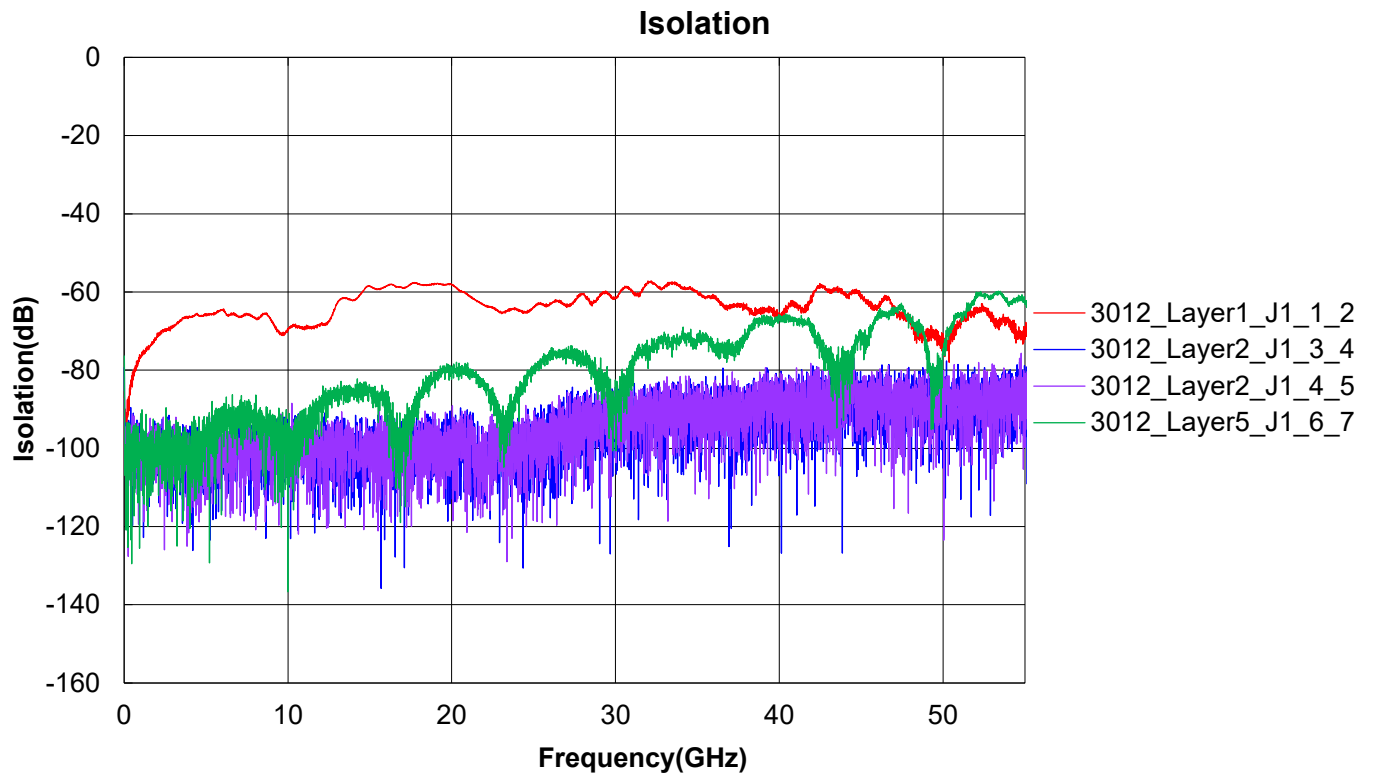
VSWR



Return Loss



Series: GPPC**Description:** Magnum RF™ Ganged, Multi-Position SMPM Block, Stub Launch, 0.140" PitchInsertion Loss

Series: GPPC**Description:** Magnum RF™ Ganged, Multi-Position SMPM Block, Stub Launch, 0.140" Pitch**Isolation**

Series: GPPC

Description: Magnum RF™ Ganged, Multi-Position SMPM Block, Stub Launch, 0.140" Pitch

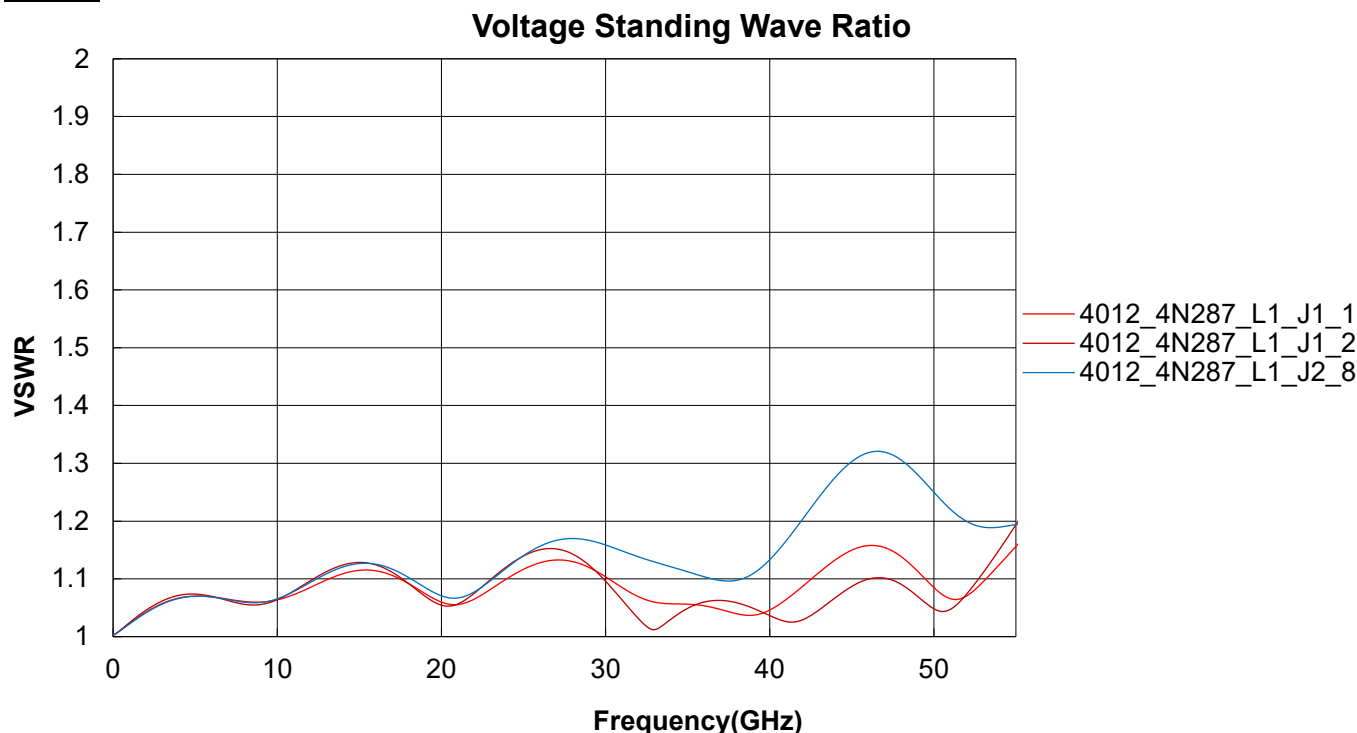
Results: GPPC-PF-1-08-HG-ST-SL

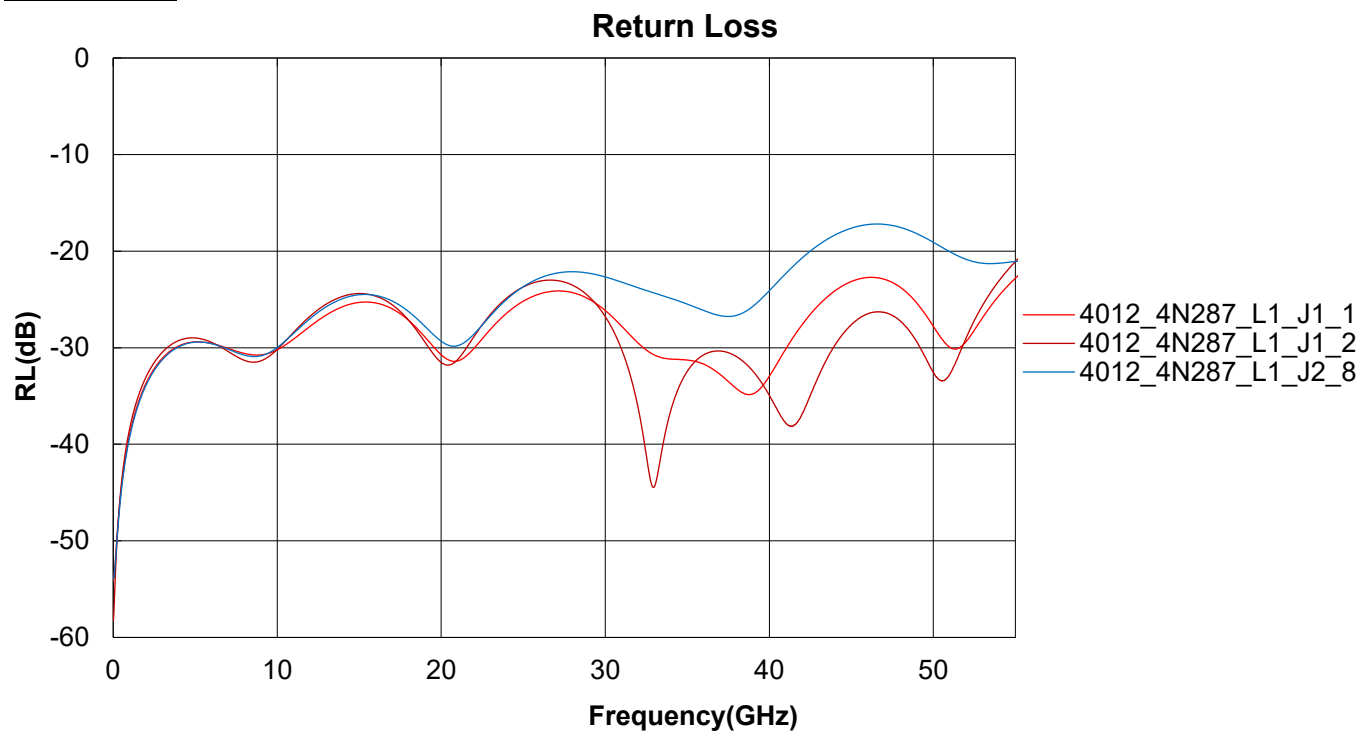
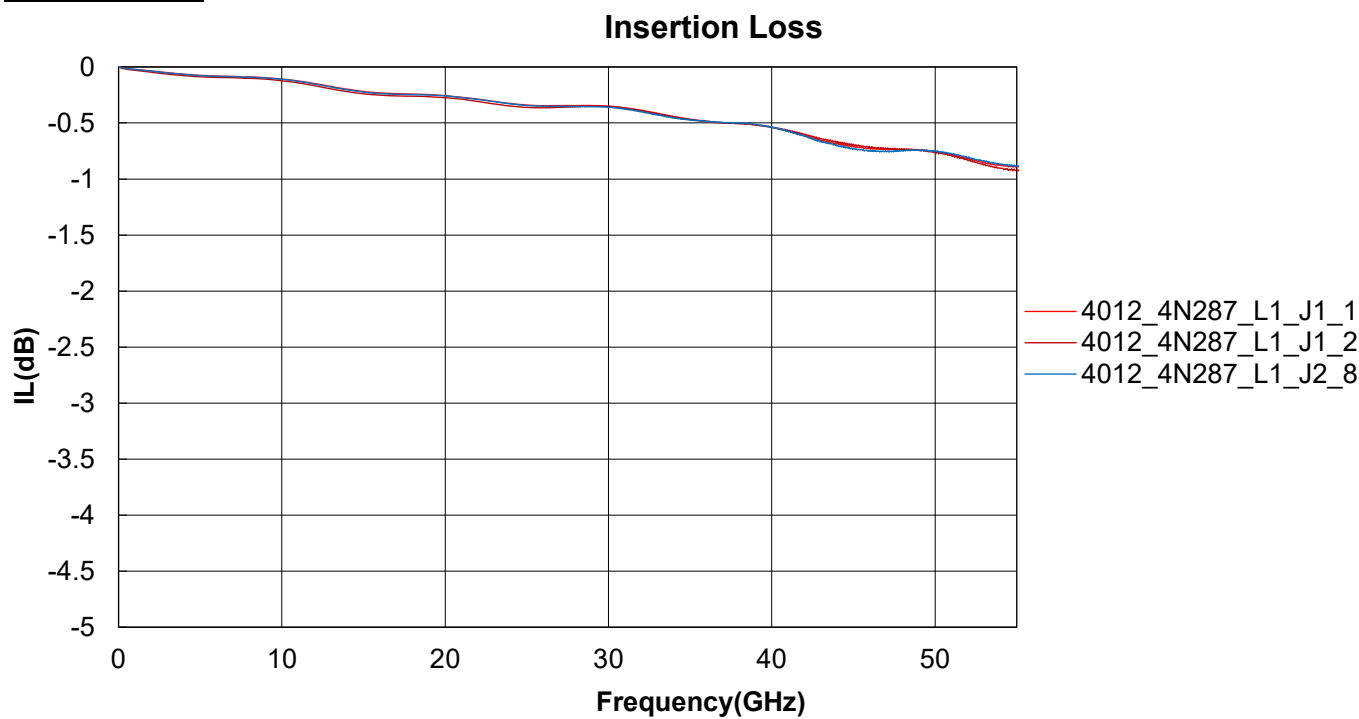
The post processed results include one GPPC-PF-1-08-HG-ST-SL connector, launch, and 0.25" of PCB trace to minimize the effects of the test setup.

Description: 50 Ohm SMPM Plug			
Sample	SWR(max)	RL(dB, max)	IL(dB, min)
4012_4N287_L1_J1_1	1.16@46.12GHz	-22.71@46.12GHz	-0.89@54.77GHz
4012_4N287_L1_J1_2	1.19@55.00GHz	-21.07@55.00GHz	-0.93@54.77GHz
4012_4N287_L1_J2_8	1.32@46.55GHz	-17.19@46.55GHz	-0.89@54.90GHz
4012_4N287_L2_J1_3	1.36@55.00GHz	-16.38@55.00GHz	-1.13@54.76GHz
4012_4N287_L2_J1_4	1.27@55.00GHz	-18.49@55.00GHz	-1.11@54.76GHz
4012_4N287_L2_J1_5	1.29@55.00GHz	-18.04@55.00GHz	-1.11@54.77GHz
4012_4N287_L2_J2_4	1.23@55.00GHz	-19.58@55.00GHz	-1.12@54.91GHz
4012_4N287_L2_J2_5	1.22@55.00GHz	-19.91@55.00GHz	-1.11@54.77GHz
4012_4N287_L2_J2_6	1.23@55.00GHz	-19.80@55.00GHz	-1.15@54.77GHz
4012_4N287_L5_J1_7	1.32@55.00GHz	-17.18@55.00GHz	-1.23@54.91GHz
4012_4N287_L5_J1_8	1.33@35.88GHz	-16.97@35.88GHz	-1.20@55.00GHz

Layer 1 (Microstrip)

VSWR



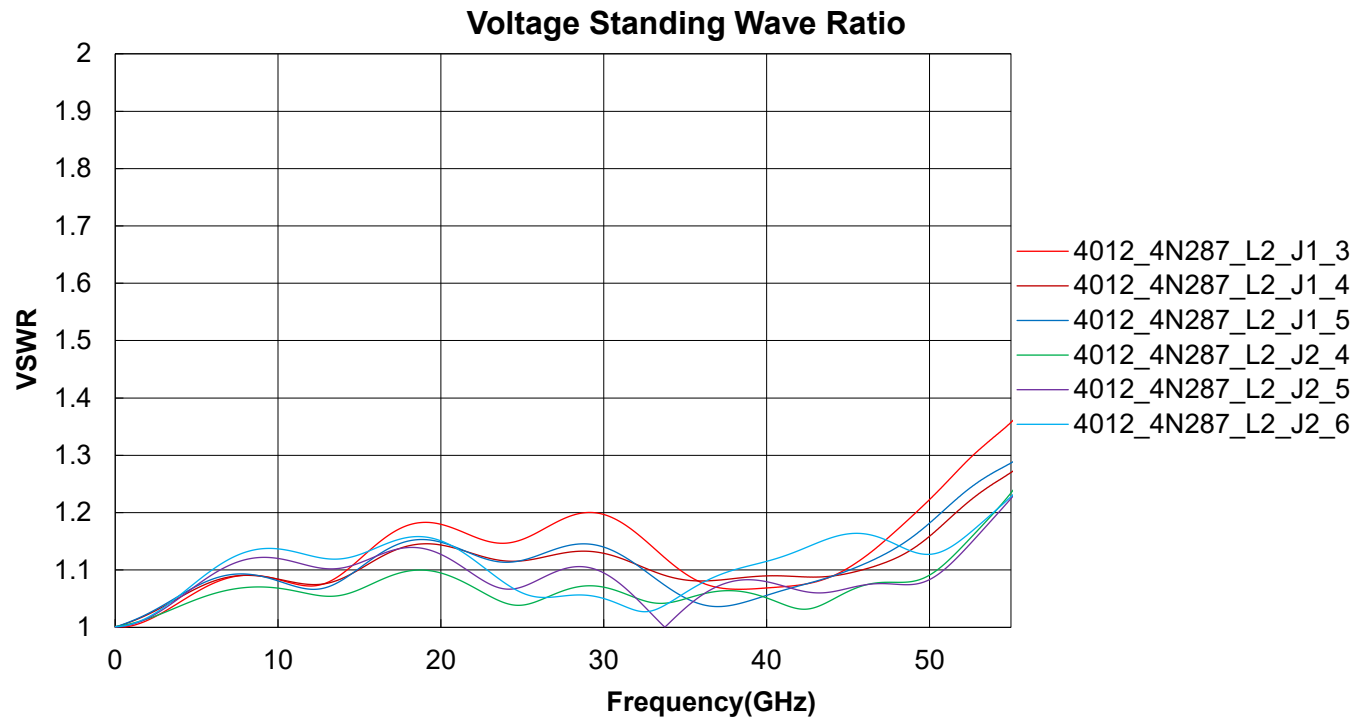
Series: GPPC**Description:** Magnum RF™ Ganged, Multi-Position SMPM Block, Stub Launch, 0.140" Pitch**Return Loss****Insertion Loss**

Series: GPPC

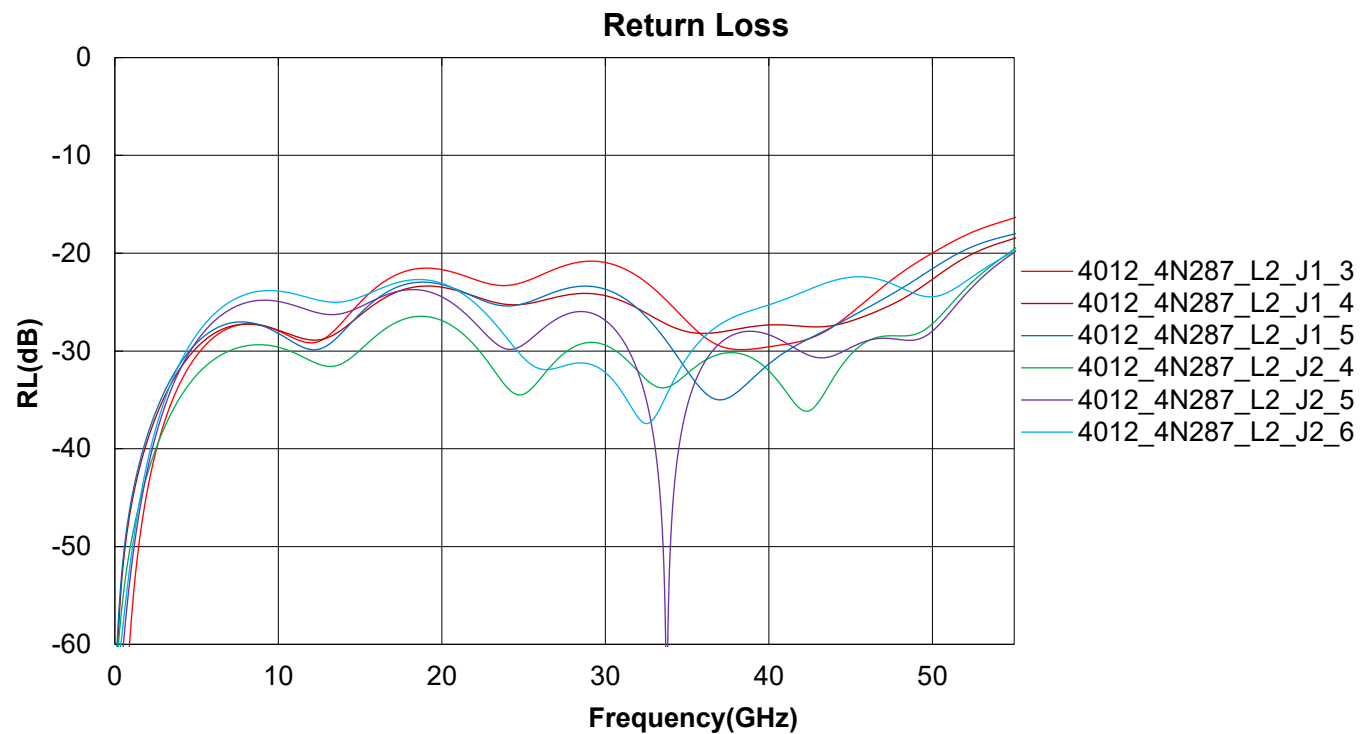
Description: Magnum RF™ Ganged, Multi-Position SMPM Block, Stub Launch, 0.140" Pitch

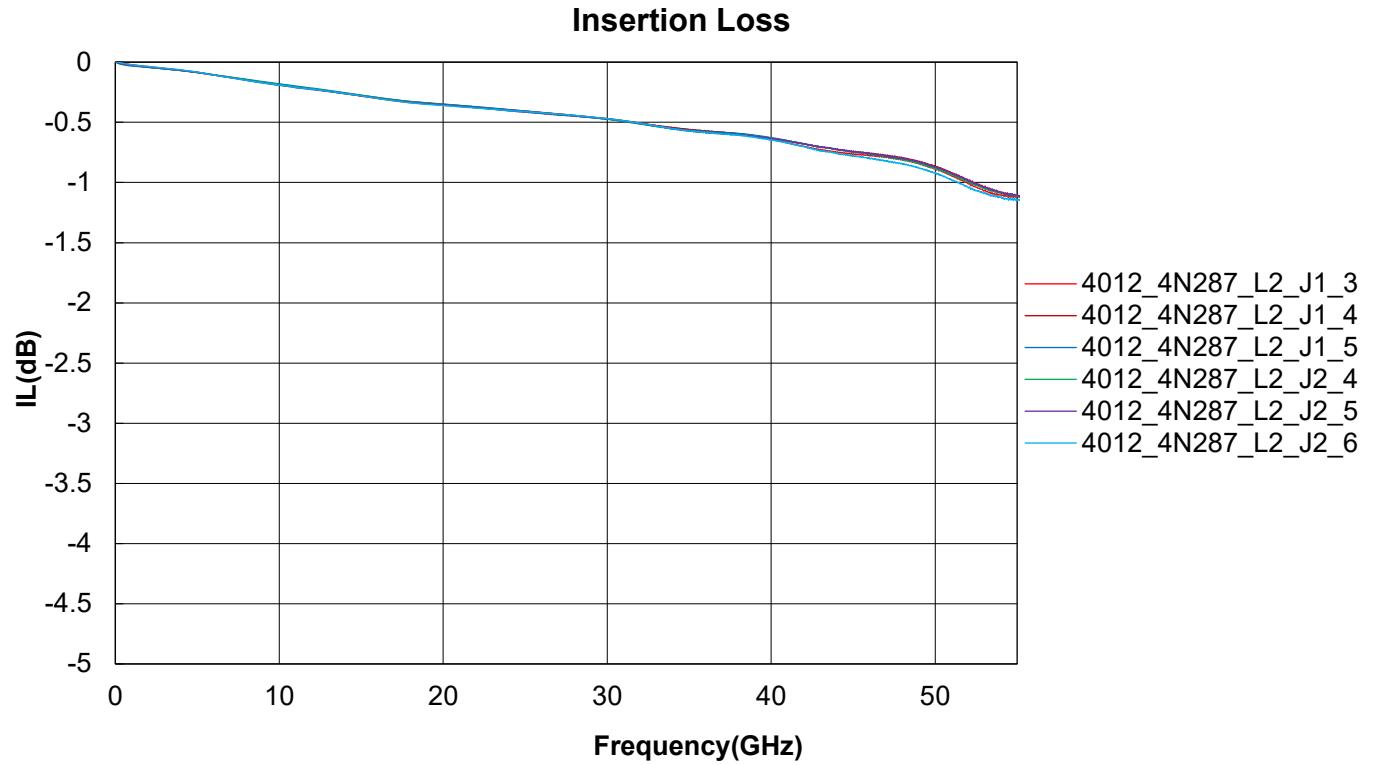
Layer 2 (Stripline)

VSWR



Return Loss



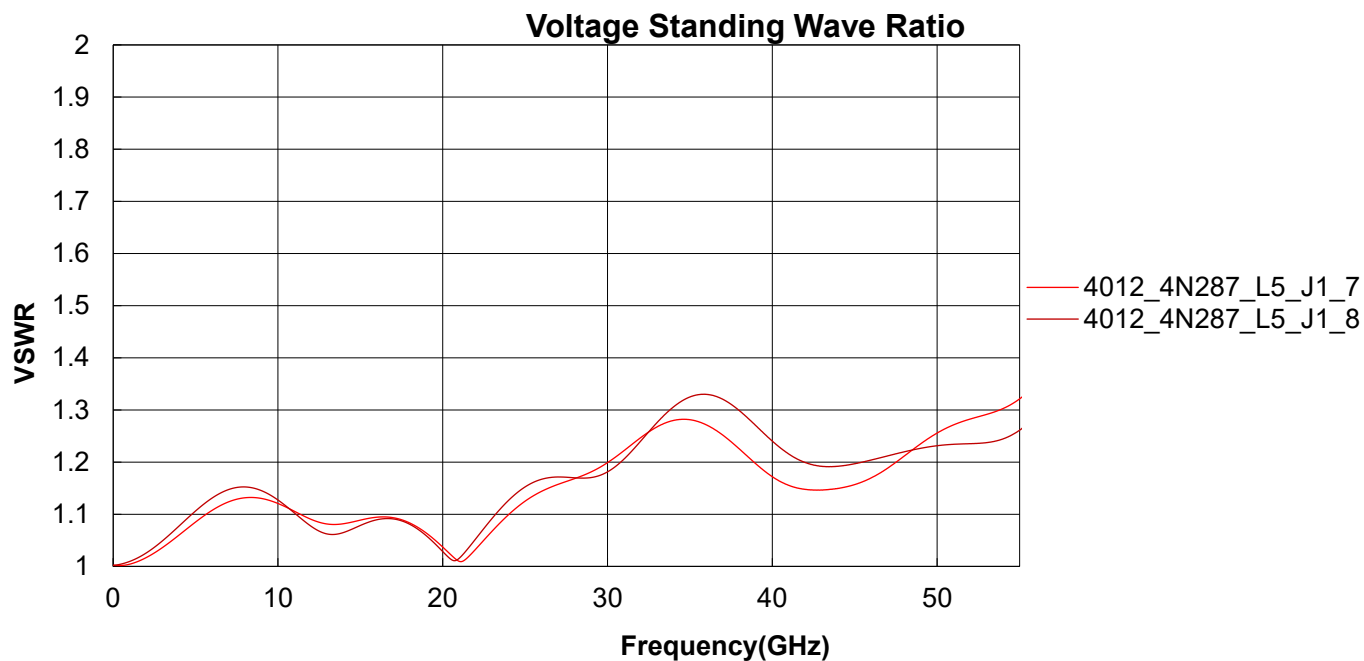
Series: GPPC**Description:** Magnum RF™ Ganged, Multi-Position SMPM Block, Stub Launch, 0.140" PitchInsertion Loss

Series: GPPC

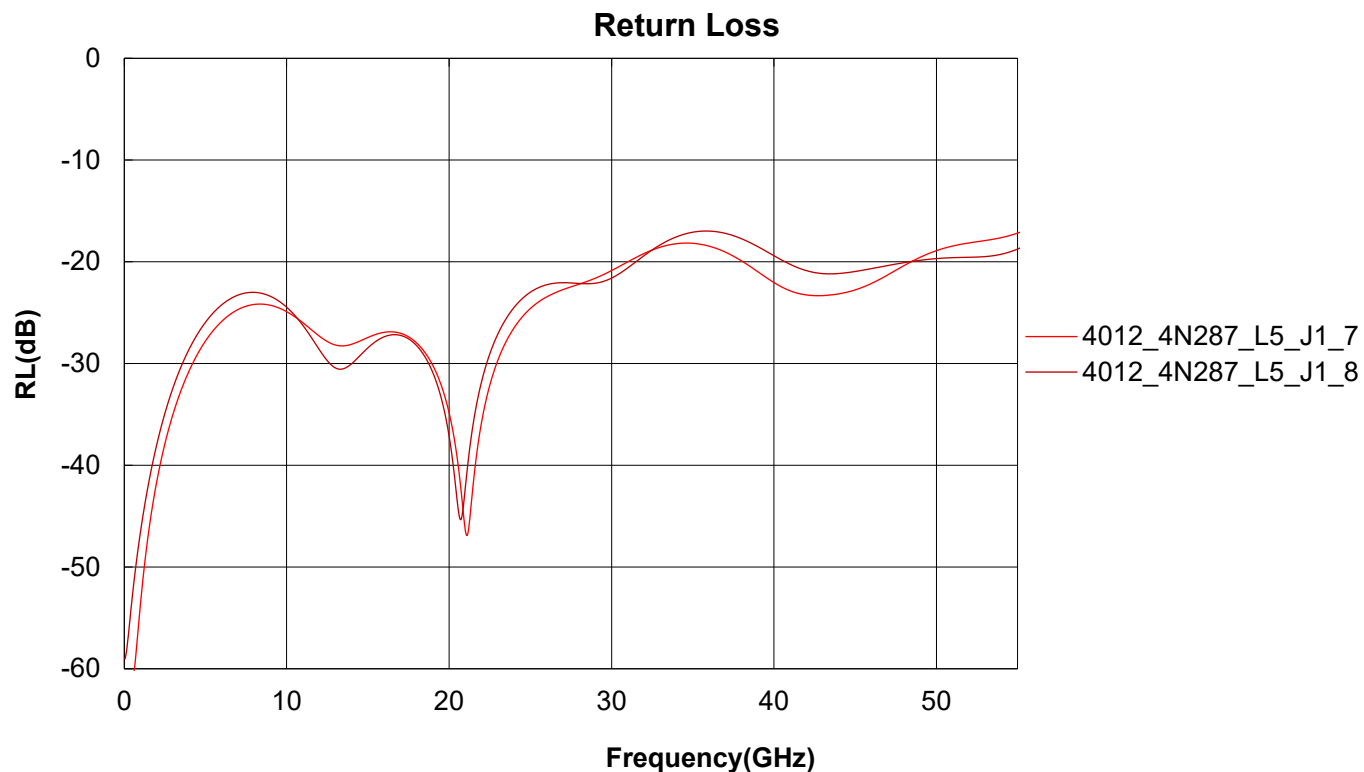
Description: Magnum RF™ Ganged, Multi-Position SMPM Block, Stub Launch, 0.140" Pitch

Layer 5 (Stripline)

VSWR



Return Loss



Series: GPPC**Description:** Magnum RF™ Ganged, Multi-Position SMPM Block, Stub Launch, 0.140" PitchInsertion Loss