RF Characterization Report

SMPM-PC-P-XX-ST-TH-1

Test Date: 10 Jun 2020

Description
50 Ohm SMPM Plug, Through Hole

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Report Revision: 7/20/2020

Series: SMPM-TH
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Test Setup Information

Scope:

Provide standing wave ratio, return loss and insertion loss performance parameters for SMPM Plug, Through hole connector.

Instrument Setup & Test Accessories:

Network Analyzer	Keysight PNA N5227B
Averaging Factor	2
Smoothing	Off
IF Bandwidth	700 Hz
Sweep Start	10 MHz
Sweep End	67 GHz
Points	6700
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 85058E 1.85mm Mechanical Calibration kit

Adapter Use:

API 5299 1.85 mm Female to SMPM Female adapter and PCB-SMPMTH-110530-SIG-0 were used for the measurements of SMPM-PC-P-XX-ST-TH. The adapter and traces effects were removed from the measurement using the Fixture Removal method.

Test System Description

The test fixture is composed of a six-layer Isola material with 50Ω signal trace and varying launch designs to reflect performance on different routing layers. Optimization of the RF launch was performed using full wave simulation tools to minimize reflections. These launch designs were implemented on PCB-SMPMTH-110530-SIG-0. 30 GHz Calibration standards specific to the aforementioned PCB were used for SMPM-PC-P-XX-ST-TH measurements.

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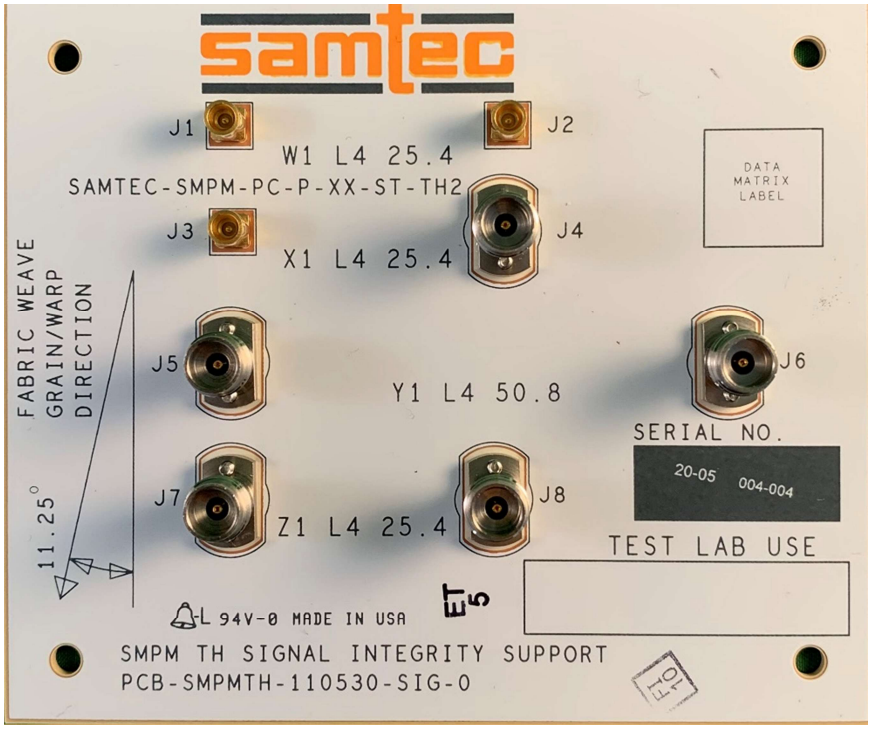
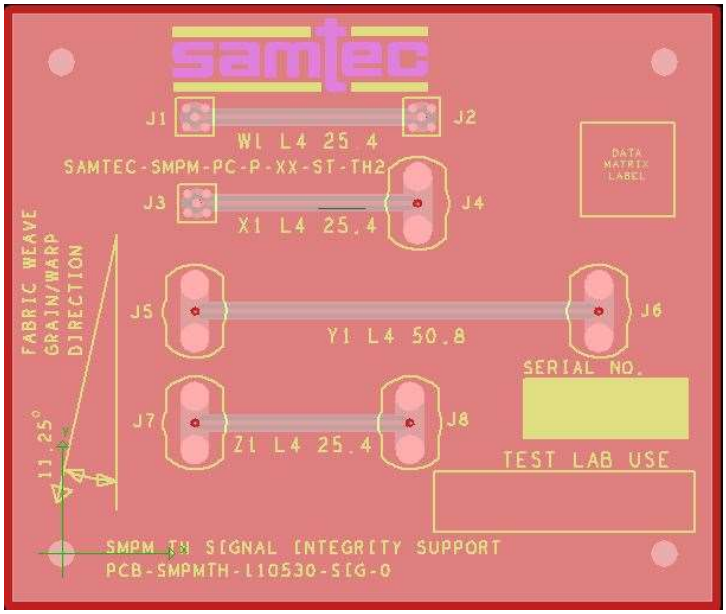
PCB-SMPMTH-110530-SIG-0 Test Fixtures

Shown below is a photograph of the test board.



PCB-SMPMTH-110530-SIG-0 PCB Layout

Artwork of the PCB design is shown below.



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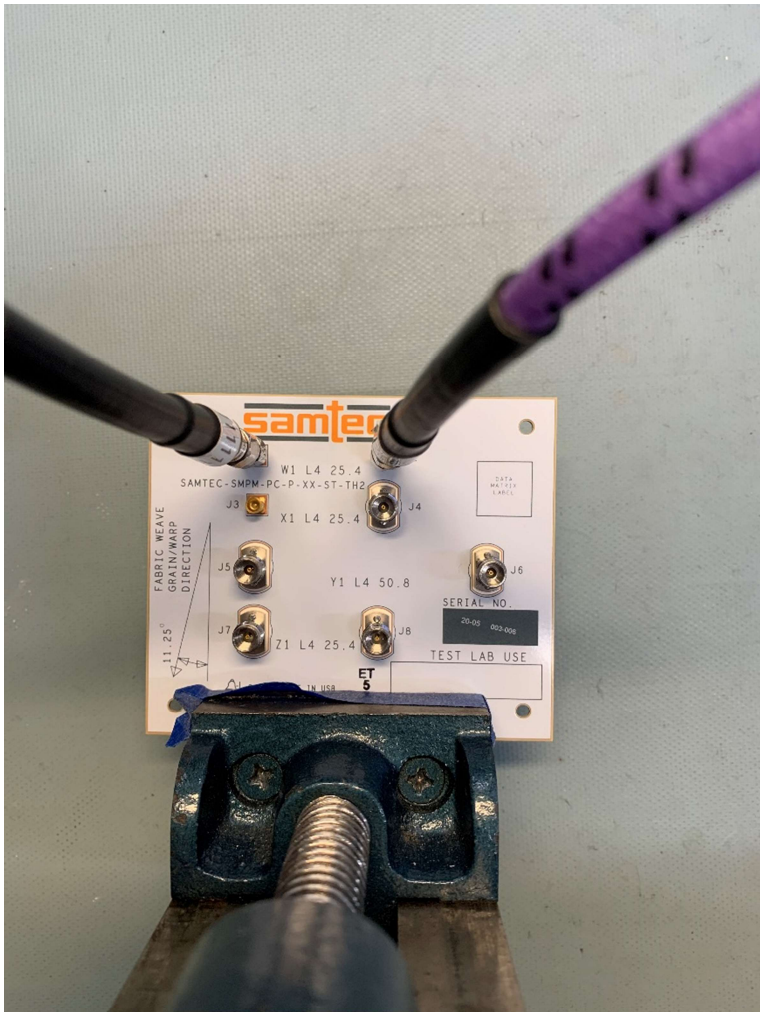
SMPM-PC-P-XX-ST-TH-1 Test Definition

Part Number	End 1
SMPM-PC-P-XX-ST-TH-1	SMPM Plug

Connector Under Test:



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Results: SMPM-PC-P-XX-ST-TH

The post processed results include the SMPM-PC-P-XX-ST-TH connector, launch, and ~100 mils of PCB trace to minimize the effects of the test setup.

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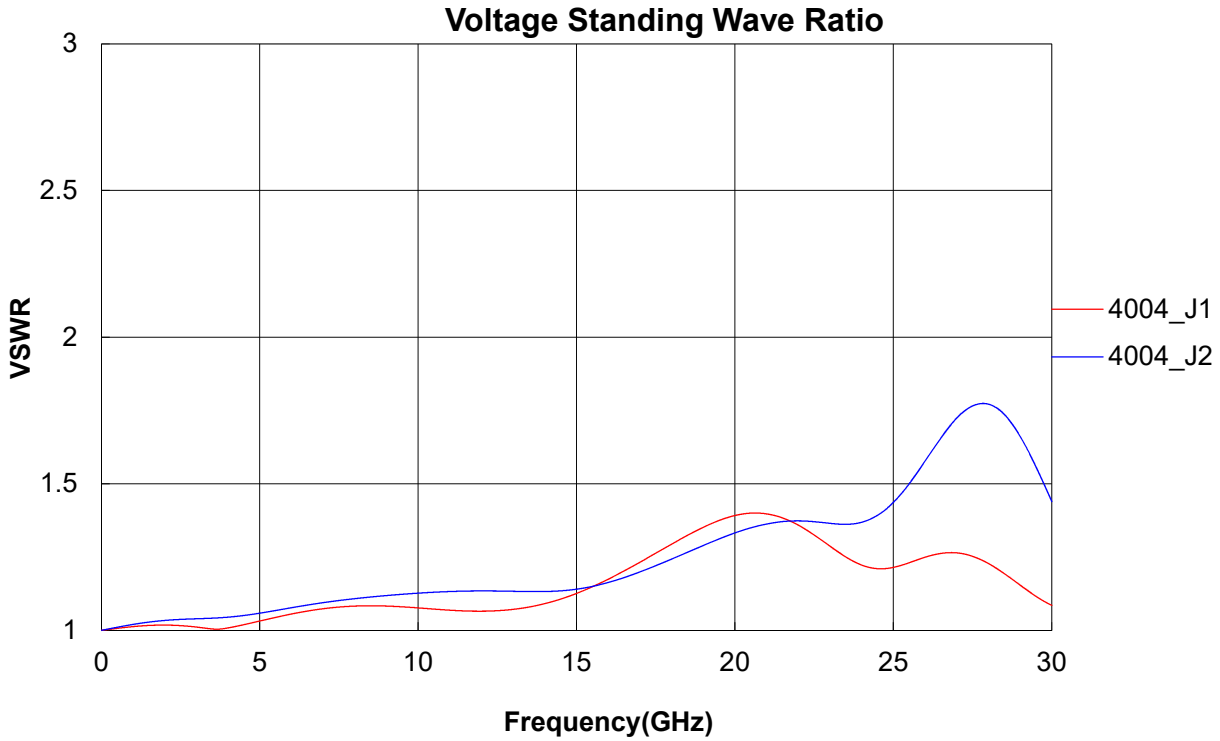
Sample	**SWR(max)**	**RL(max)**	**IL(min)**
4004_J1	1.40@20.63GHz	-15.56@20.63GHz	-1.71@27.31GHz
4004_J2	1.77@27.84GHz	-11.09@27.84GHz	-1.74@27.30GHz

VSWR



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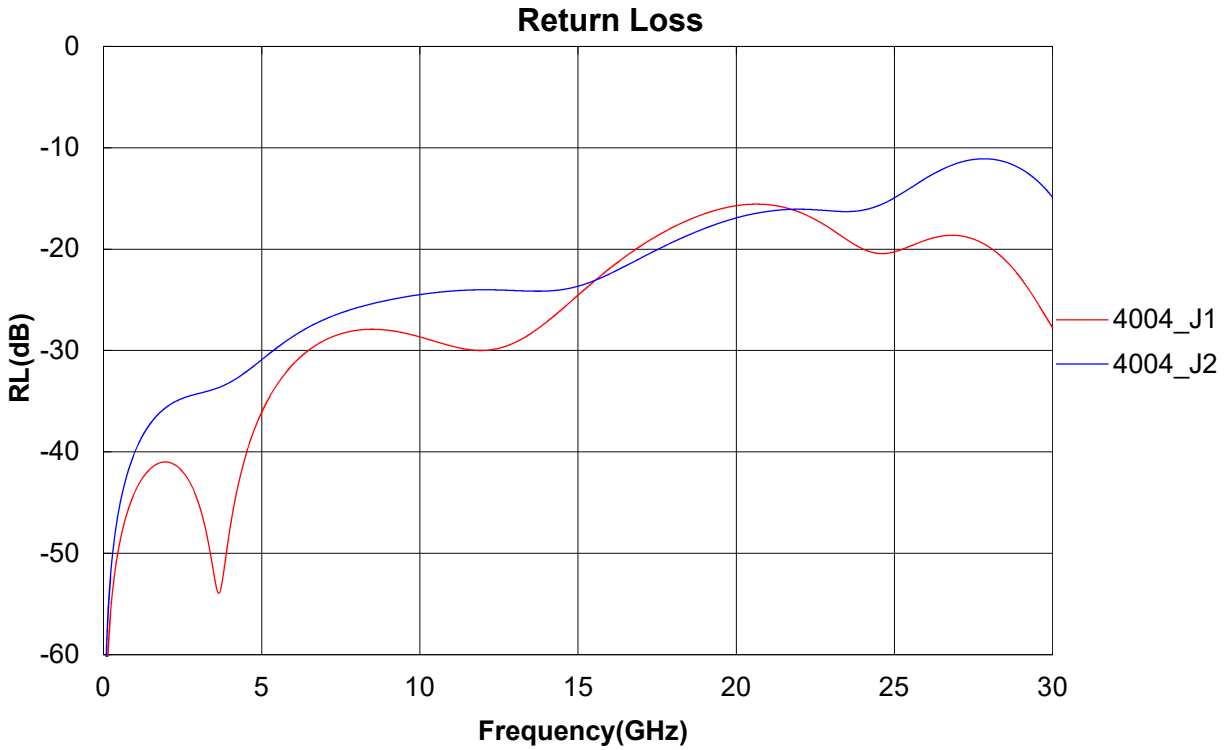
Return Loss



Insertion Loss