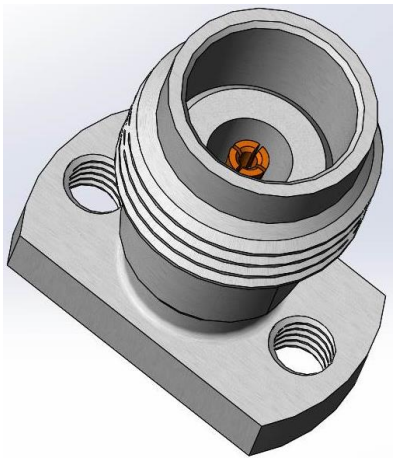
RF Characterization Report

240-J-P-XX-ST-CMM-X

Test Date: 22 Jul 2020



Description
50 Ohm 2.40 mm Jack, Compression Mount Microstrip

Samtec Inc.
520 Park East Blvd.
New Albany IN 47151-1147 USA

WWW.SAMTEC.COM
1-800-SAMTEC-9 (US & Canada)
RF@samtec.com

Phone: 812-944-6733
Fax: 812-948-5047
Report Revision: 8/21/2020

Series: 2.40 mm
Description: 50 Ohm 2.40 mm Jack, Compression Mount Microstrip

Table of Contents

Test Setup Information 1
Scope: 1
Instrument Setup & Test Accessories: 1
Calibration Type: 1
Adapter Use: 1
Test System Description 1
PCB-RFCMM-110841-SIG-0 Test Fixtures 2
PCB-RFCMM-110841-SIG-0 PCB Layout 2
240-J-P-XX-ST-CMM-X Test Definition 3
Connector Under Test: 3
Results: 240-J-P-XX-ST-CMM-X 4
VSWR 4
Return Loss 4
Insertion Loss 5

Series: 2.40 mm
Description: 50 Ohm 2.40 mm Jack, Compression Mount Microstrip

Test Setup Information

Scope:

Provide standing wave ratio, return loss and insertion loss performance parameters for 2.40 mm compression mount microstrip connector.

Instrument Setup & Test Accessories:

Network Analyzer	Keysight PNA N5227B
Averaging Factor	0
Smoothing	Off
IF Bandwidth	1 KHz
Sweep Start	10 MHz
Sweep End	50 GHz
Points	5000
Test Cables	1m Junkosha 2.4mm male to female cables

Calibration Type:

A Keysight mechanical calibration is performed using the Keysight 85056D Standard Mechanical Calibration kit.

Calibration Kit	Keysight 85056D 2.4mm Mechanical Calibration Kit

Adapter Use:

PCB-RFCMM-110841-SIG-0 RF compression mount microstrip board, was used for the measurements of 240-J-P-XX-ST-CMM-X. The traces effects were removed from the measurement using the Fixture Removal method.

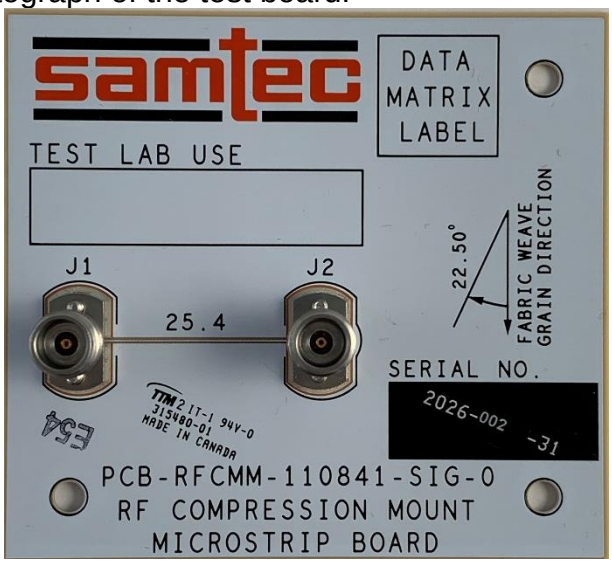
Test System Description

The test fixture is composed of a six-layer Tachyon material with a 50Ω grounded coplanar waveguide and an optimized launch. Optimization of the RF launch was performed using full wave simulation tools to minimize reflections. These launch designs were implemented on PCB-RFCMM-110841-SIG-0.

Series: 2.40 mm
Description: 50 Ohm 2.40 mm Jack, Compression Mount Microstrip

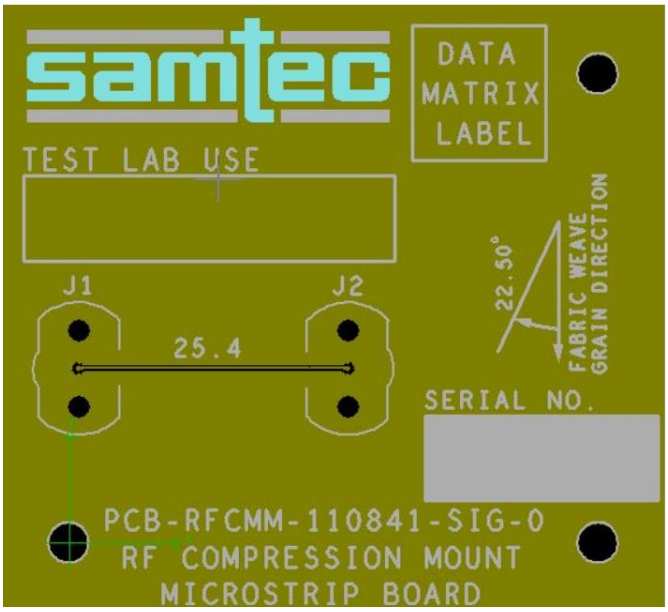
PCB-RFCMM-110841-SIG-0 Test Fixtures

Shown below is a photograph of the test board.



PCB-RFCMM-110841-SIG-0 PCB Layout

Artwork of the PCB design is shown below.

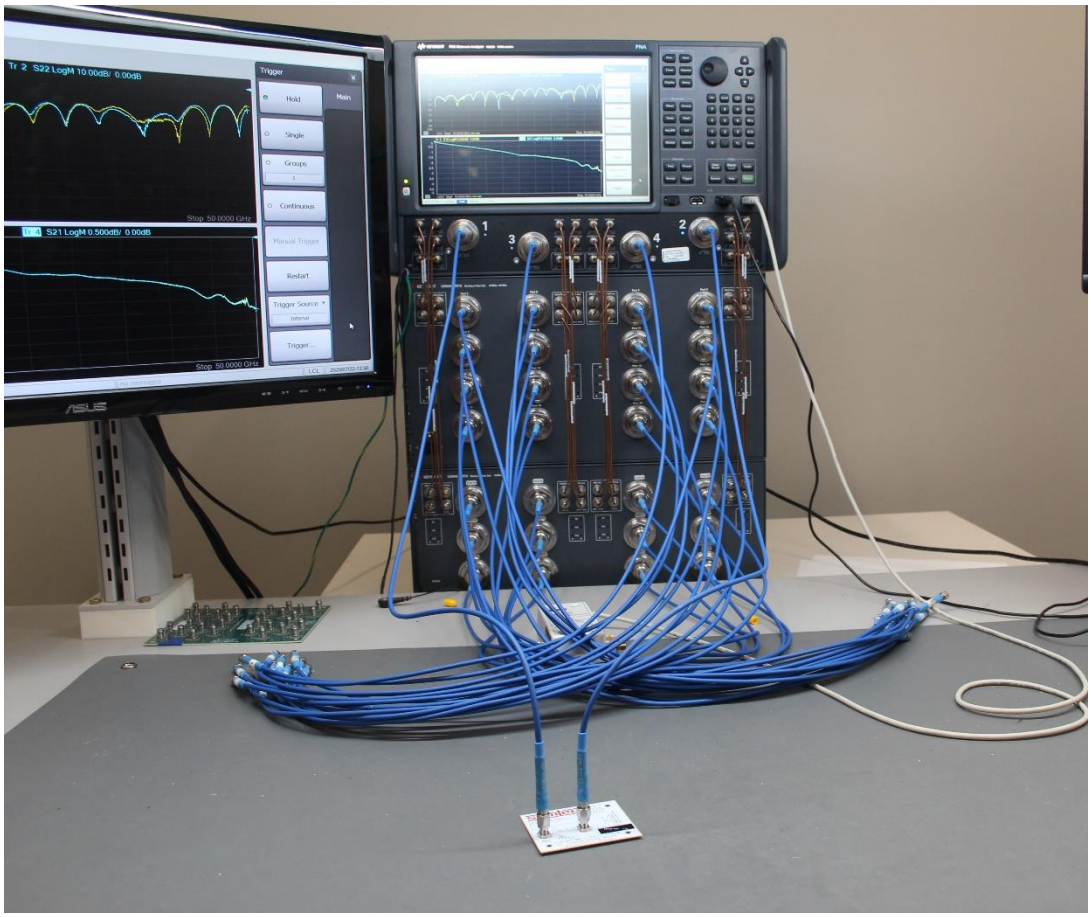


Series: 2.40 mm
Description: 50 Ohm 2.40 mm Jack, Compression Mount Microstrip

240-J-P-XX-ST-CMM-X Test Definition

Part Number	End 1
240-J-P-XX-ST-CMM-X	2.40 mm

Connector Under Test:



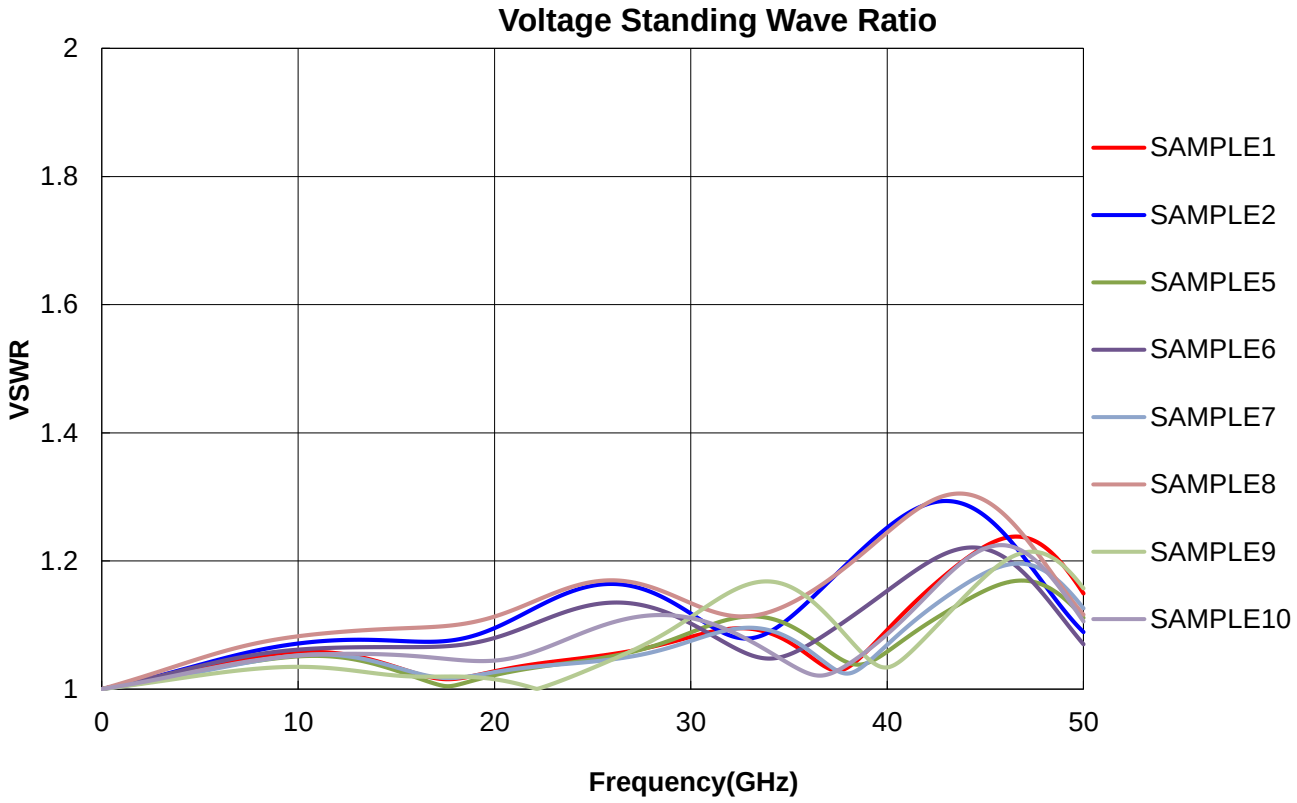
Series: 2.40 mm
Description: 50 Ohm 2.40 mm Jack, Compression Mount Microstrip

Results: 240-J-P-XX-ST-CMM-X

The post processed results include the 240-J-P-XX-ST-CMM-X connector, launch, and ~100 mils of PCB trace to minimize the effects of the test setup.

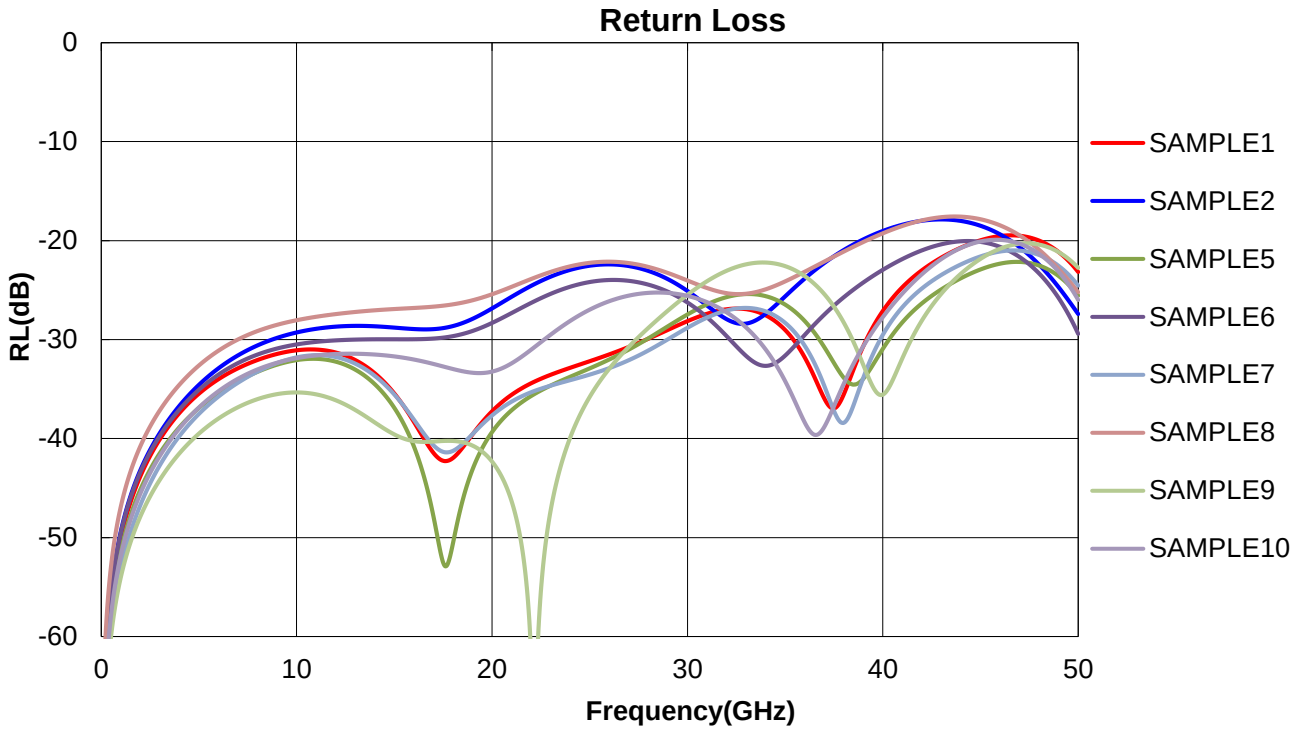
Description: 50 Ohm 2.4 mm Compression Mount Microstrip			
Sample	**VSWR(max)**	**RL(max)**	**IL(min)**
SAMPLE1	1.24@46.57GHz	-19.46@46.57GHz	-0.56@49.25GHz
SAMPLE2	1.29@43.01GHz	-17.85@43.01GHz	-0.55@49.29GHz
SAMPLE5	1.17@46.85GHz	-22.15@46.85GHz	-0.56@48.58GHz
SAMPLE6	1.22@44.32GHz	-20.04@44.32GHz	-0.55@48.58GHz
SAMPLE7	1.20@46.73GHz	-20.99@46.73GHz	-0.57@49.24GHz
SAMPLE8	1.31@43.69GHz	-17.56@43.69GHz	-0.57@49.24GHz
SAMPLE9	1.21@47.36GHz	-20.28@47.36GHz	-0.60@49.22GHz
SAMPLE10	1.22@45.83GHz	-19.91@45.83GHz	-0.59@49.22GHz

VSWR



Series: 2.40 mm
Description: 50 Ohm 2.40 mm Jack, Compression Mount Microstrip

Return Loss



Insertion Loss