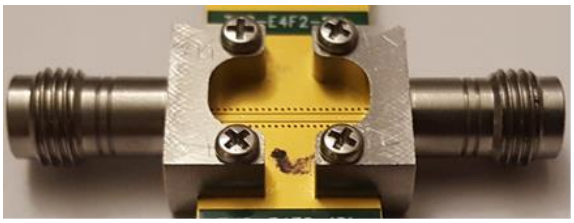
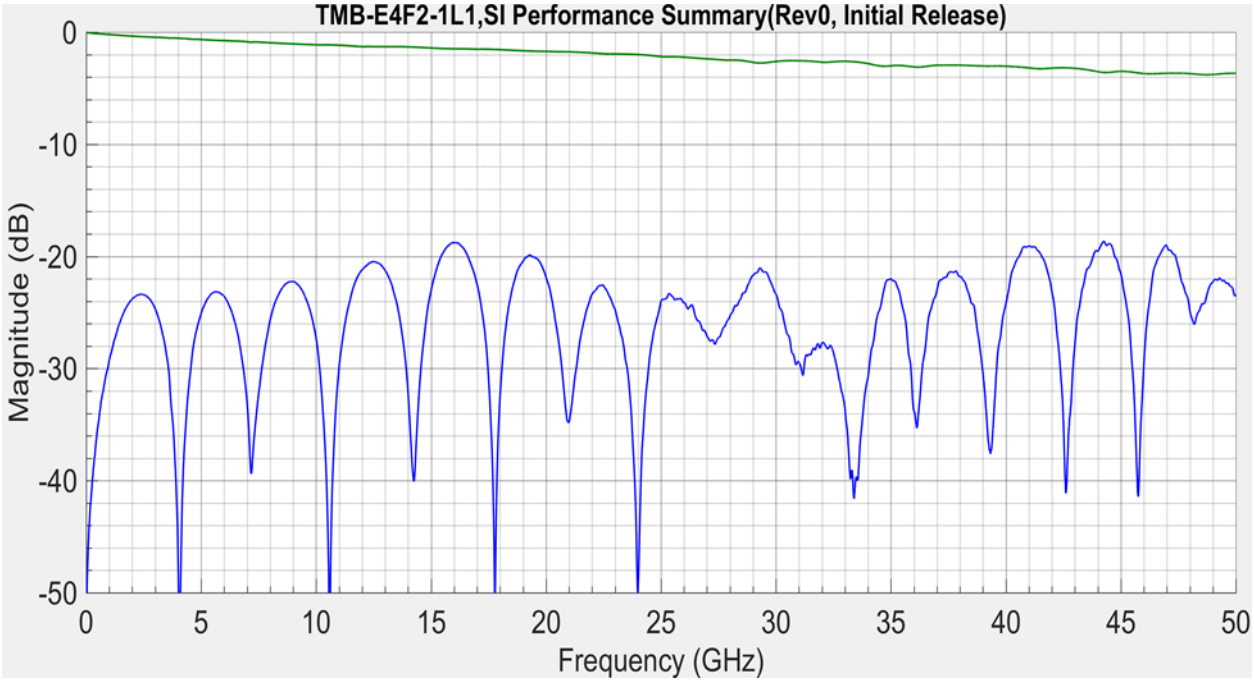
SIGNAL INTEGRITY REPORT

Test and Measurement Performance Report

Part Number TMB-E4F2-1L1
(2.4mm Edge Launch Solderless Precision Connector)
Distribution: *Internal & External Use*



SI Performance Summary
(Attenuation & Reflections, Single-Ended)



* 2 connectors are shown, measured in pairs. (1 measurement) For further details regarding testing setup, configurations please see the rest of the report.

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2	EC No: **N/A** DATE: **07/ 10 / 2020**	**2.4mm Edge Launch, Solderless Precision Connector (TMB-E4F2-1L1)** **CARLISLE IT CONFIDENTIAL**	**1** of **10**

DOCUMENT NUMBER:	SI ENGINEER:	DESIGN ENGINEER	ENGINEERING MANAGER
RSI-TMB-E4F2-1L1_02	**R.Stavoli**	**P. Volkov**	**E.Soubh**

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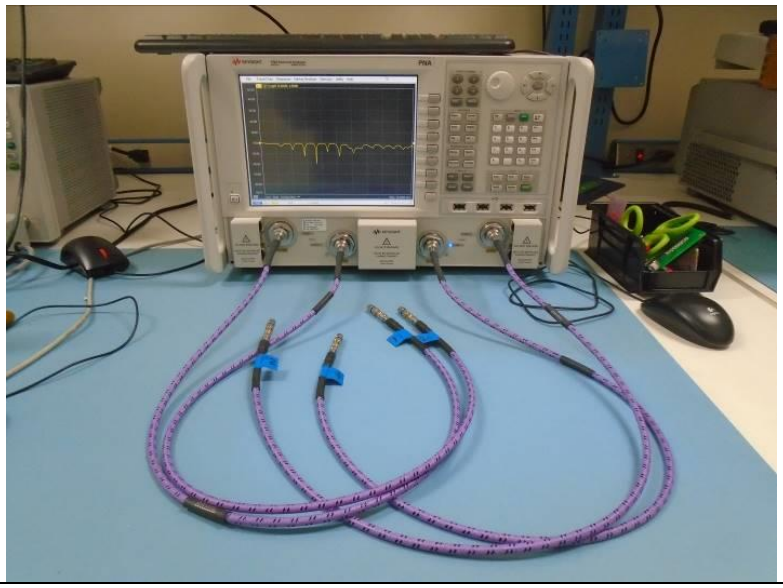
1.0 TEST SETUP AND DUT

Equipment, fixtures, and methods

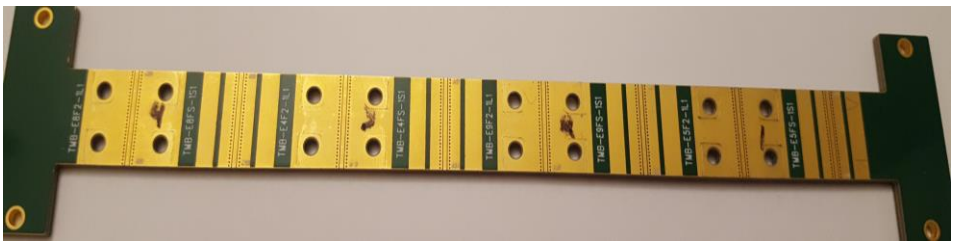
Test method: All data measured from test PCB shown below and a N5227A PNA Network Analyzer

- Calibration was performed up to the 2.4mm adapters using calibration kit: 85056A
- Data was swept from 10 MHz to 50GHz for 5000 points
- Data averaging was turned off.
- Data is not dembedded and includes the board trace/transition and two RF edge launch precision connectors



Assembly Description

- T&M PN: TMB-E4F2-1L1
- Carlisle DUT PCB: Edge Launch Precision Connector Test Board (Rev A)
- Industry Leading Supplier Edge Launch PCB
- Port 1: 2.4mm edge mount
- Port 2: 2.4mm edge mount



Testing Samples:

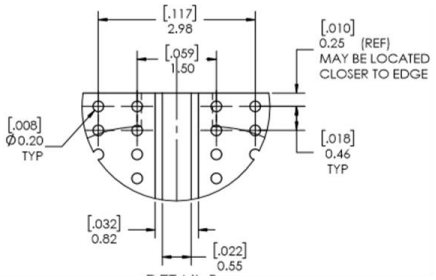
- 10 Samples
- 5 Channels

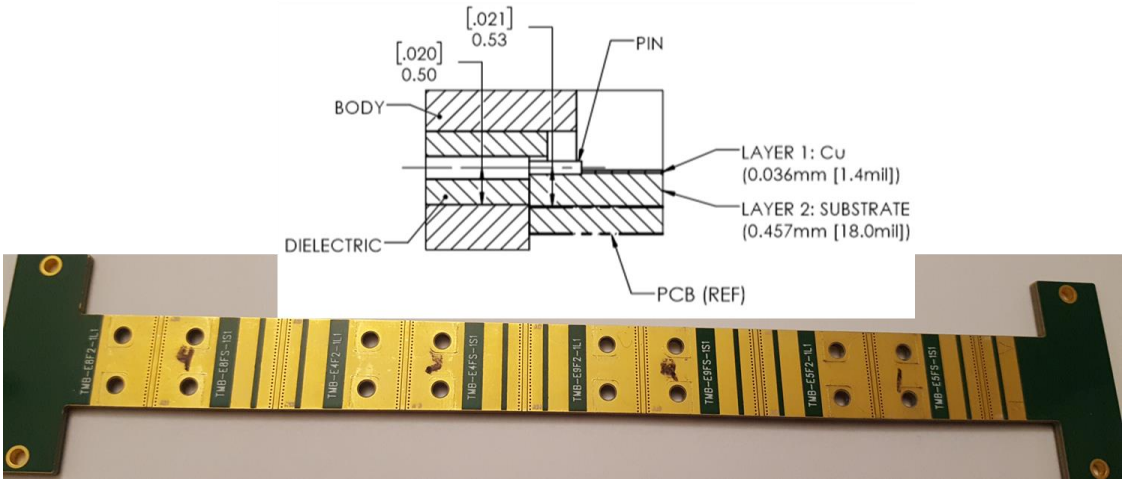
- 5 THRU Measurements (5 Channels = 10 samples) -> -Single-Ended

2.0 BOARD DETAILS & STACKUP

- Carlisle Edge Launch Precision Connector Test Board
  - Revision A, Coplanar Waveguide
  - Copper (traces, pads, ground) not all the way to the edge of the board
- Dielectric Material: Megtron6 (Dk.3.41, Df 0.004 @ 12Ghz)
  - Thickness: 0.457mm / 18 mil

Carlisle Interconnect Technologies				
Connector:	Precision Edge Mount Connectors			
PCB Step File:	EM_1.85mm_PrecisionConnectors_PCB_Megtron6_Rev_1_021220:			
		Thickness		
Layer	Material	mm	mils	Notes
1	Copper	0.03556	1.4	Signal Layer
2	Megtron 6	0.45144	17.7732283	
3	Copper	0.01778	0.7	Gnd Plane
4	Megtron 6	0.84396	33.2267717	Fill to Requirement
5	Copper	0.01778	0.7	Gnd Plane
6	Megtron 6	0.2032	8	
7	Copper	0.03556	1.4	Signal layer
TOTAL		1.60528	63.2	





- Industry Leading Supplier Edge Launch Test Board
  - Microstrip
- Dielectric Material: Rodgers 4003 (Dk. 3.38, Df 0.0027 @ 10Ghz)
  - Thickness: 0.2032mm / 8 mil

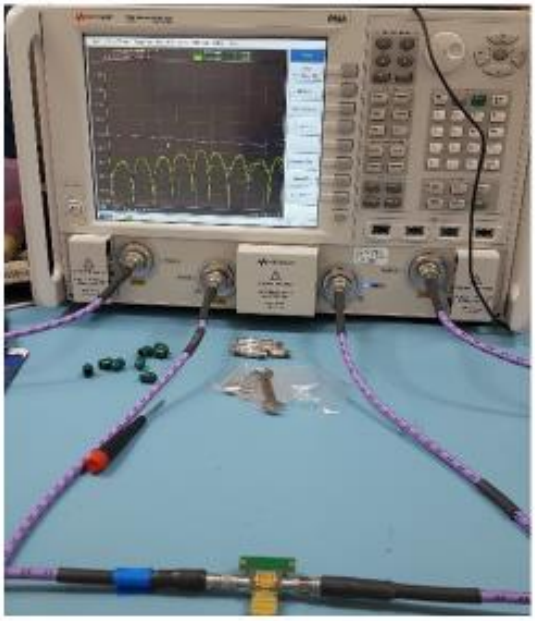
3.0 MEASUREMENT SET-UP

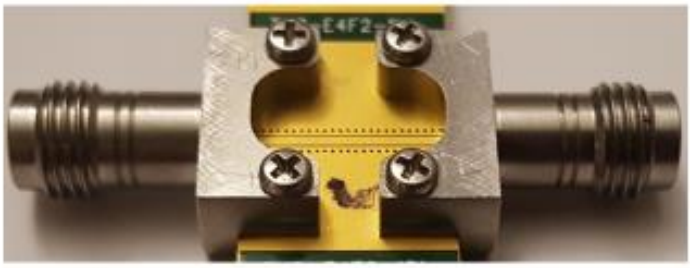
Measurements are not dembedded and include the two 2.4mm edge launch precision connectors, and the PCB (transition, traces)

Port 1:
TMB-E4F2-1L1
2.4mm Edge Launch
Solderless Precision
Connector # 1 A

→ Edge Launch Test Board →

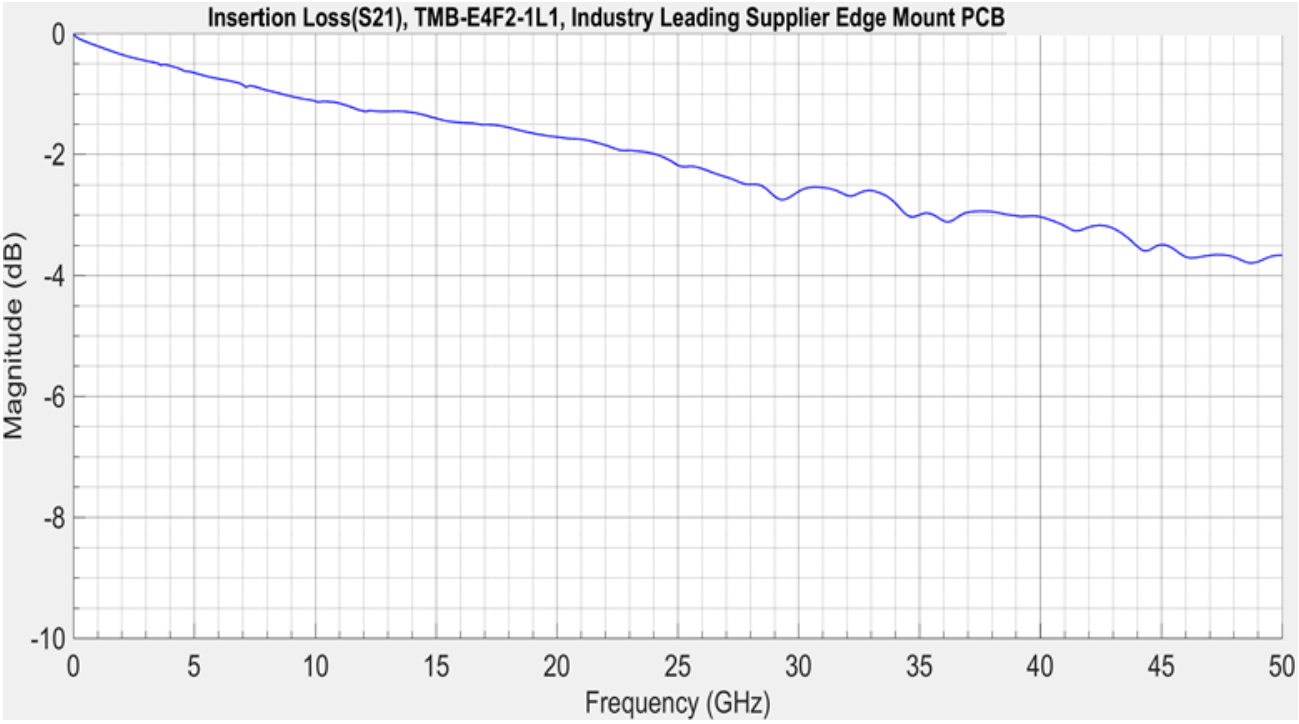
Port 2:
TMB-E4F2-1L1
2.4mm Edge Launch
Solderless Precision
Connector # 1 B





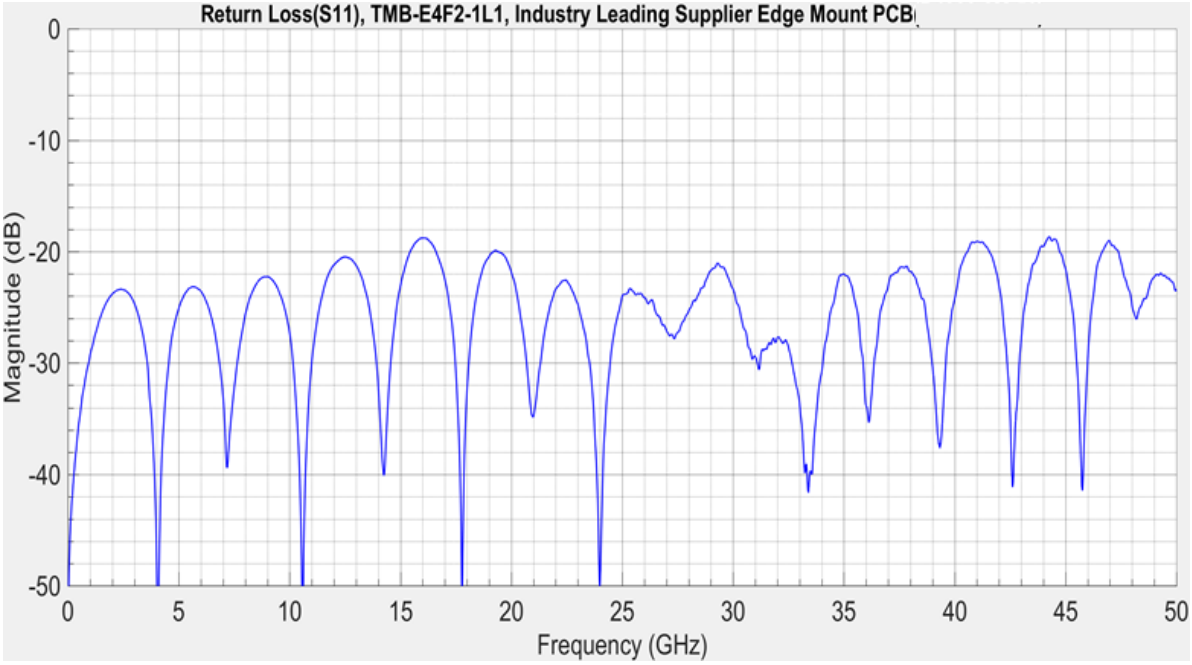
4.0 SIGNAL INTEGRITY RESULTS (INDUSTRY LEADING SUPPLIER PCB ,8MIL DIELECTRIC THICKNESS)

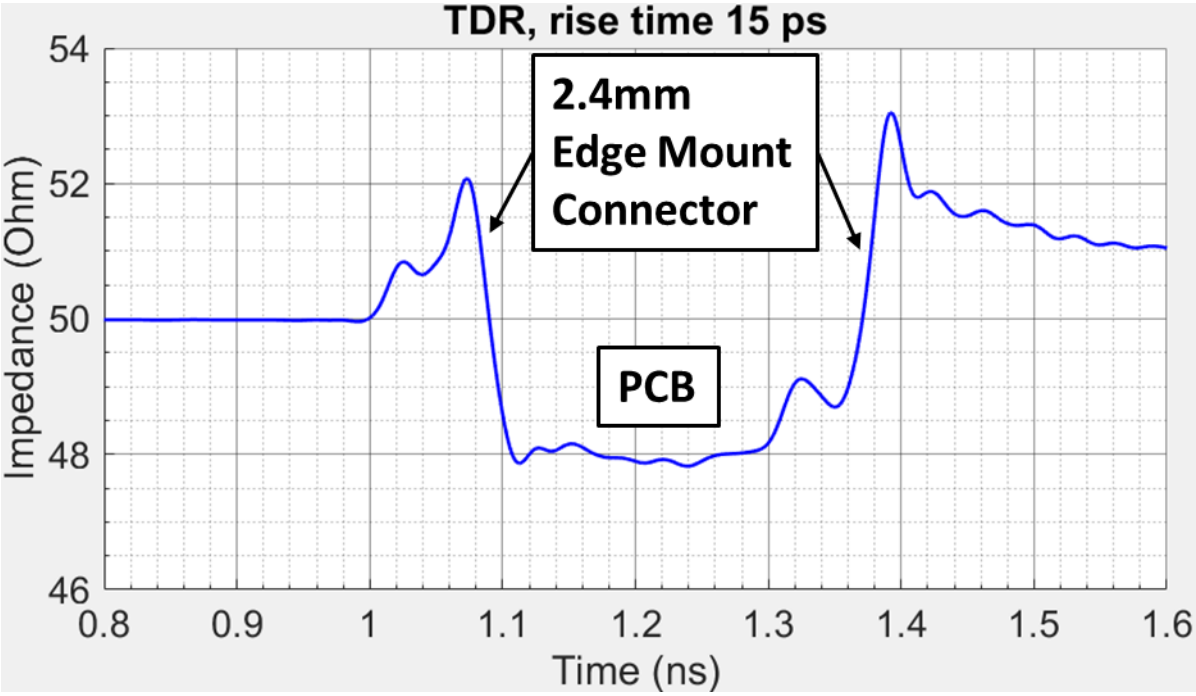
Insertion Loss (S21), 2 connectors measured, 1 measurement



SIGNAL INTEGRITY REPORT

Return Loss (S11), 2 connectors measured, 1 measurement





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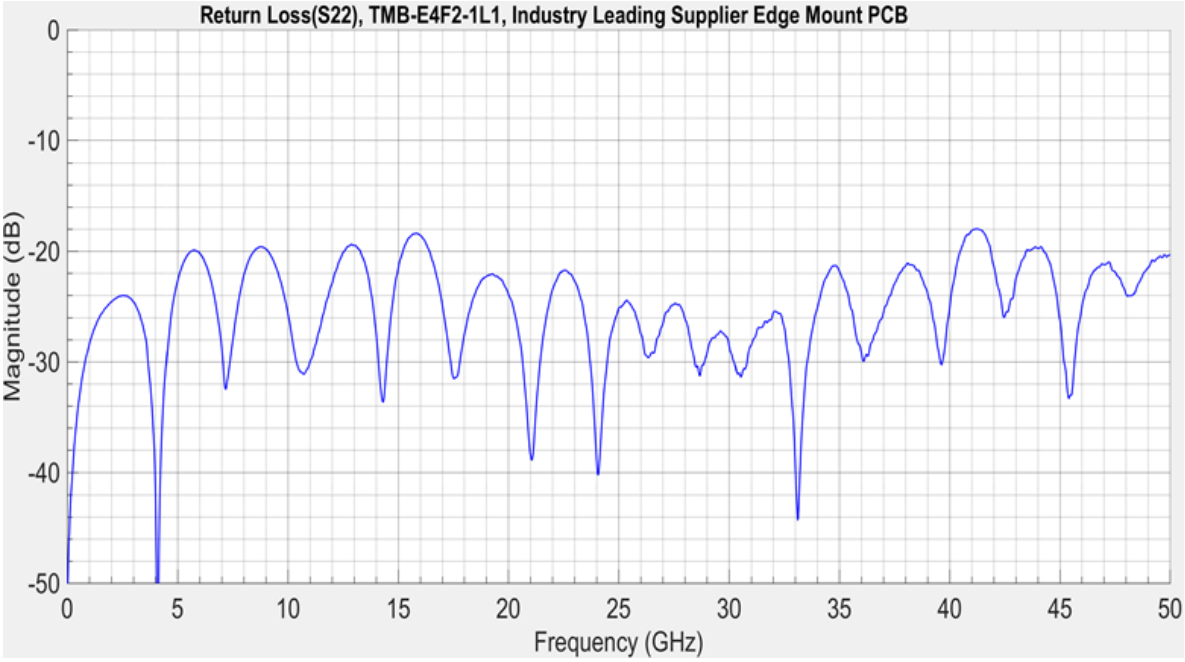
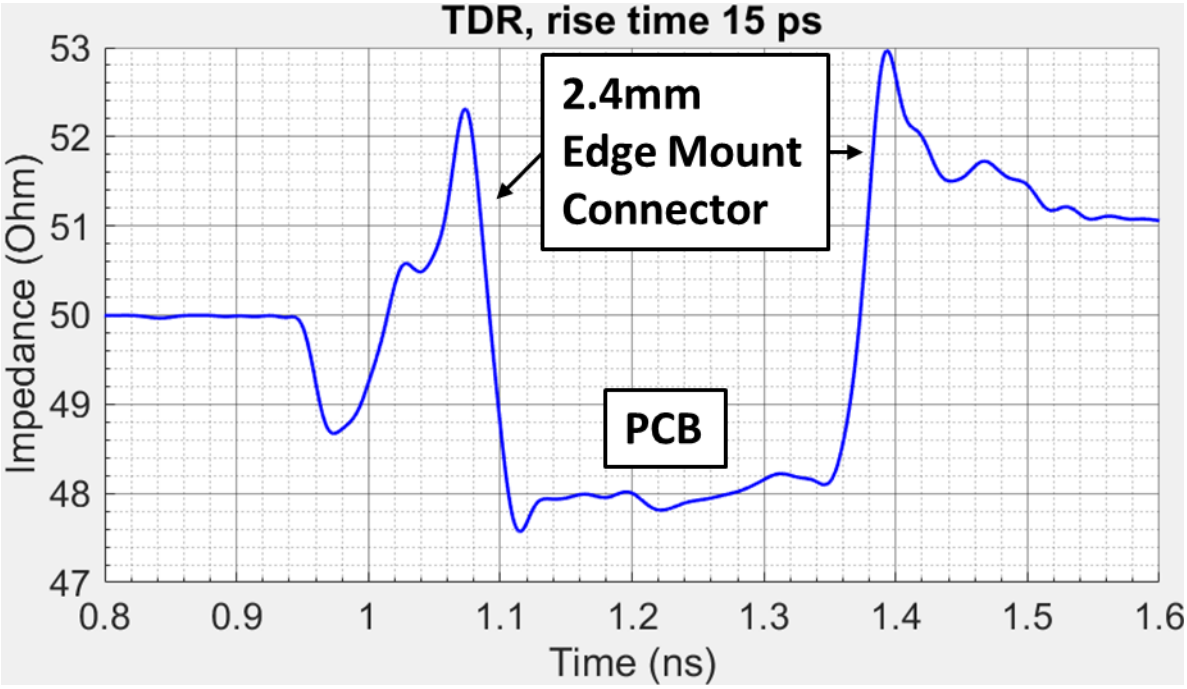
SIGNAL INTEGRITY REPORT

Return Loss (S22), 2 connectors measured, 1 measurement





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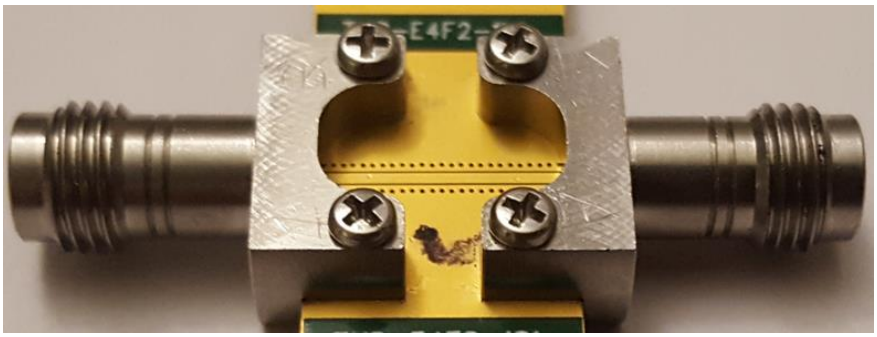
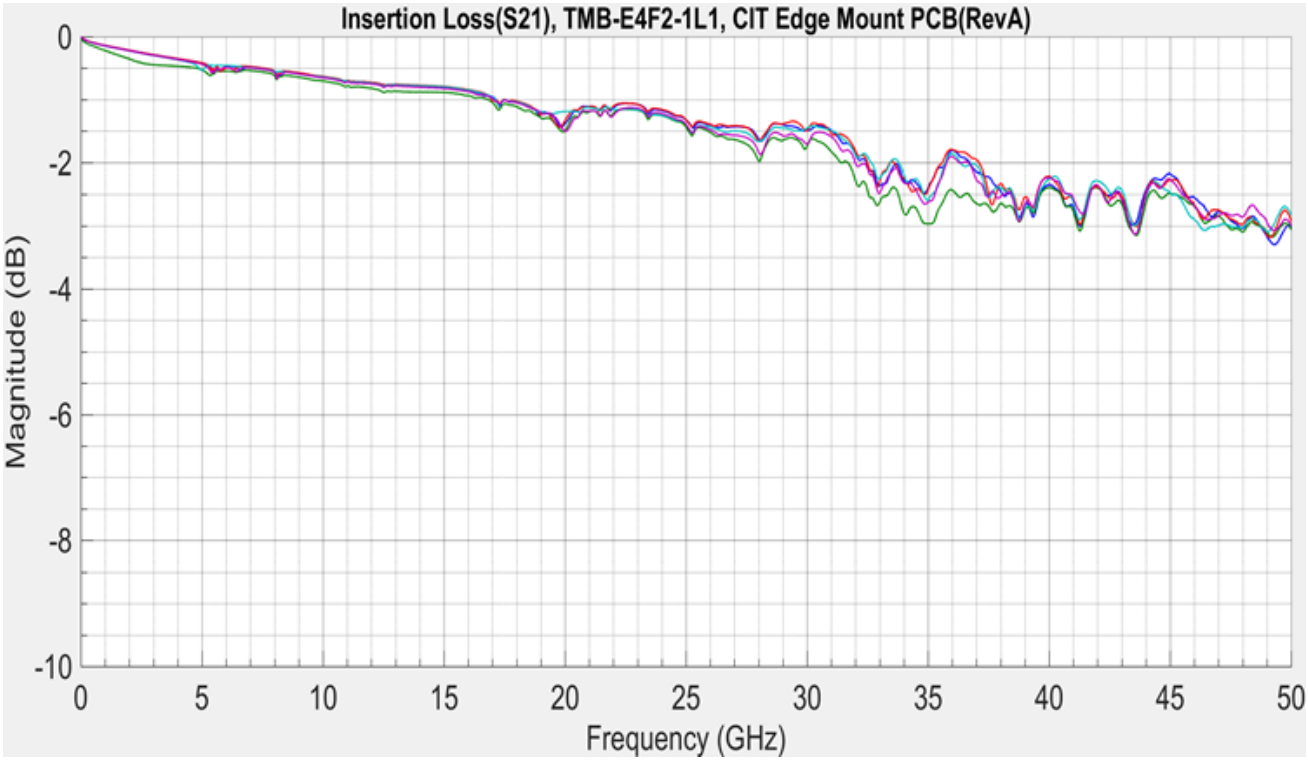
5.0 SIGNAL INTEGRITY RESULTS (CIT PCB, 18MIL DIELECTRIC THICKNESS)



Insertion Loss (S21), 10 connectors measured, 5 measurements



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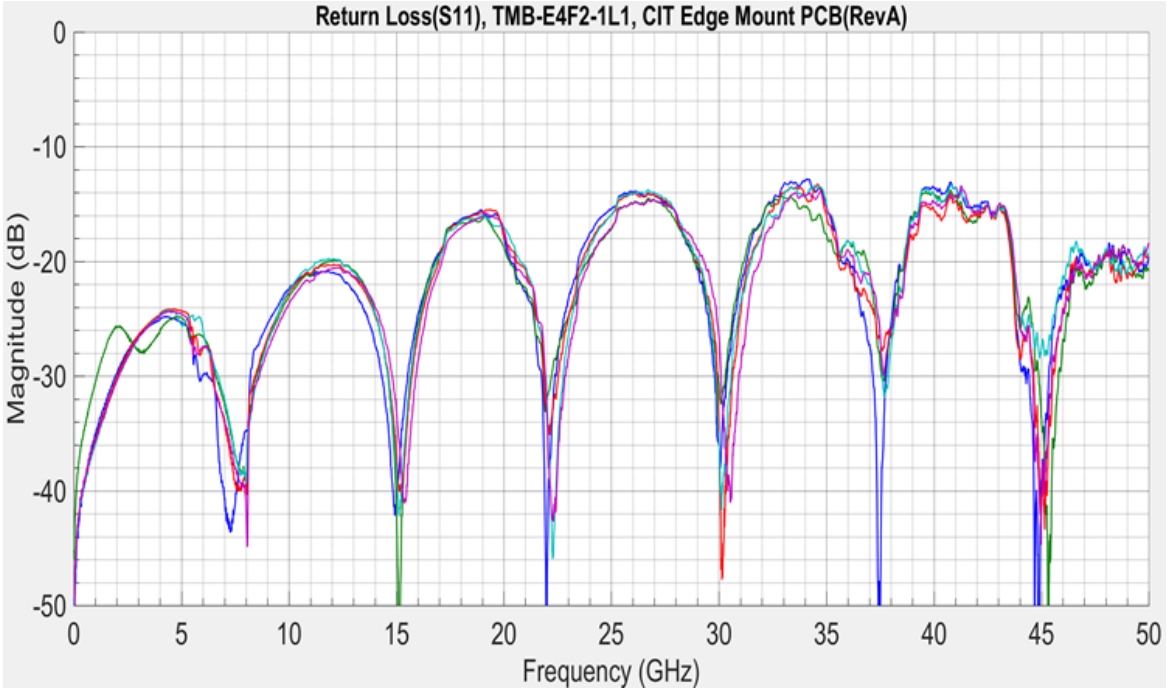
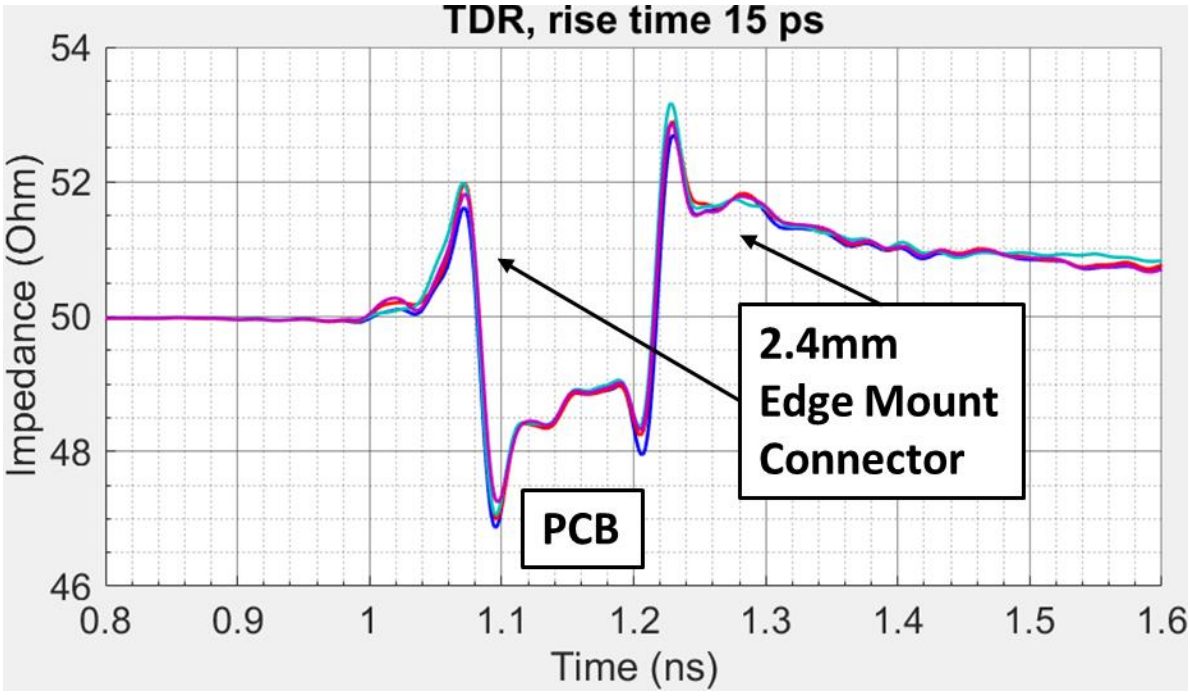
SIGNAL INTEGRITY REPORT

Return Loss (S11), 10 connectors measured, 5 measurements





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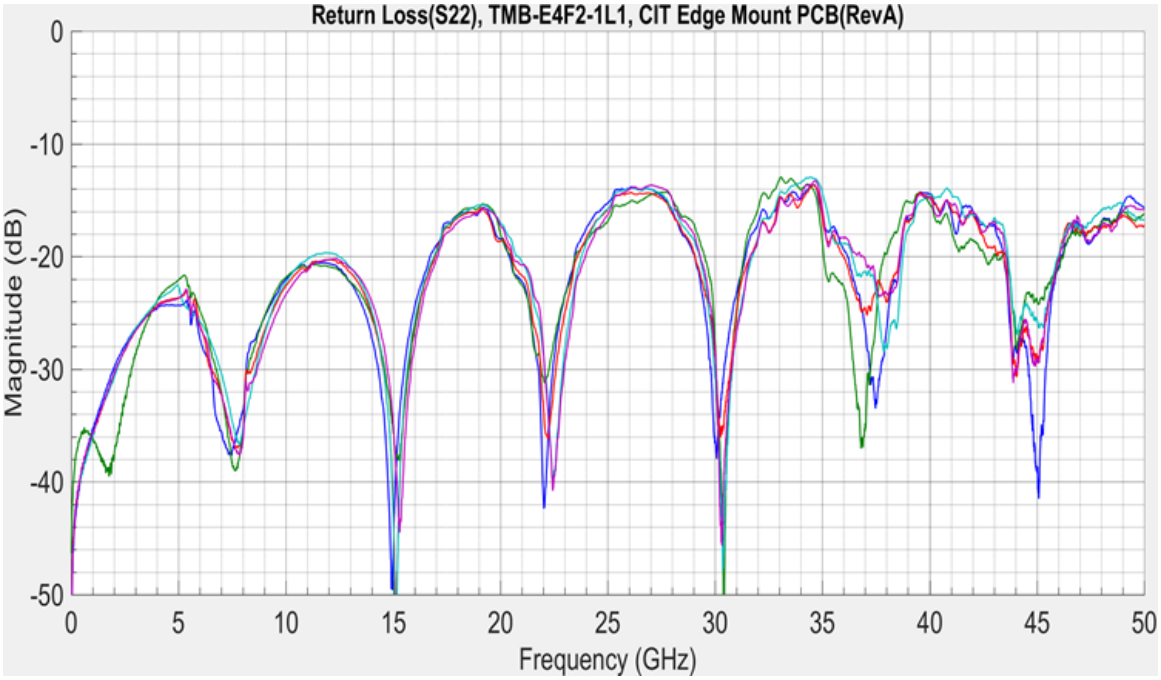
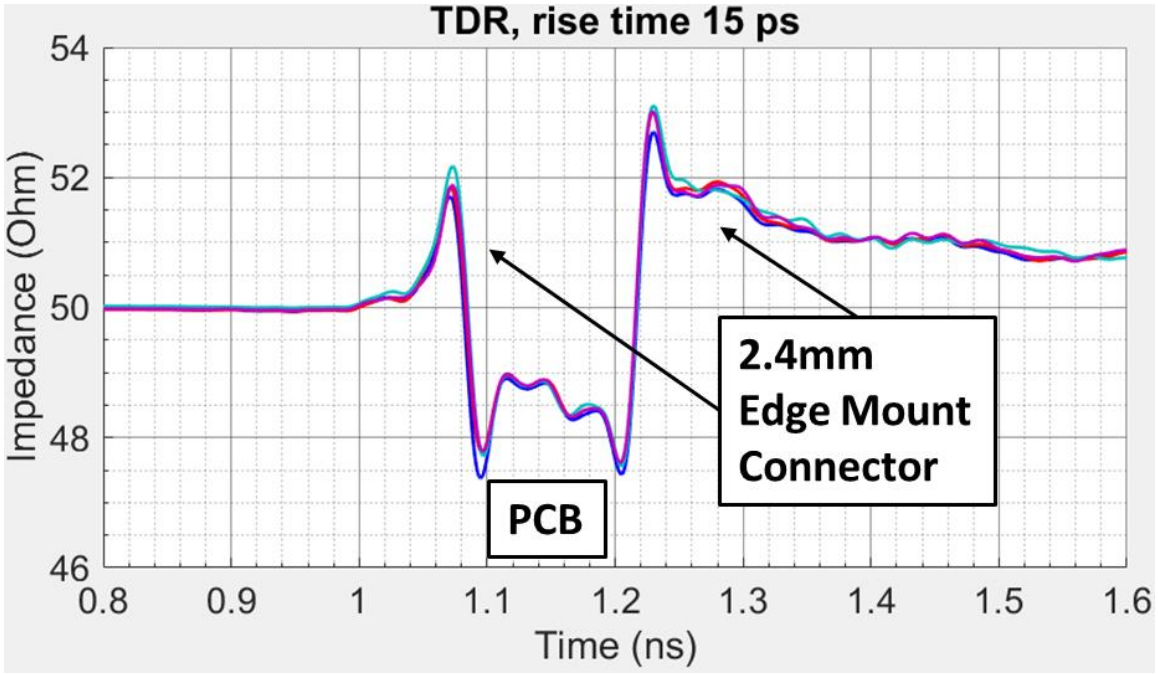
Return Loss (S22), 10 connectors measured, 5 measurements





6.0 APPENDIX, (SPARAMETERS SHOWN IN REPORT)

PrecisionConnector_TMB-E4F2-1L1_Measurements_041320 7/10/2020 11:36 AM Compressed (zipp... 1,095 KB

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