

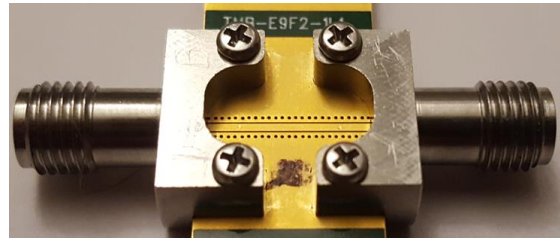
# SIGNAL INTEGRITY REPORT

## Test and Measurement Performance Report

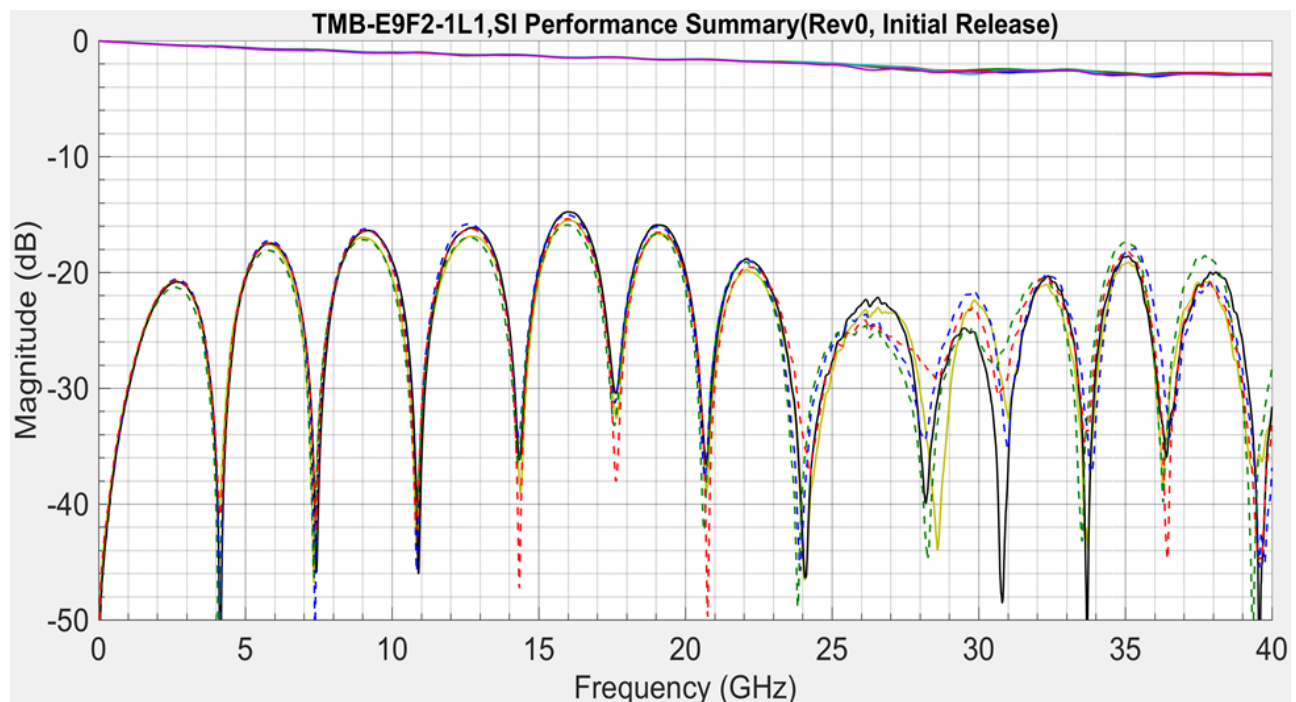
**Part Number** TMB-E9F2-1L1

(2.92mm Edge Launch Solderless Precision Connector)

**Distribution:** *Internal & External Use*



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



\* 10 connectors are shown, measured in pairs. (5 measurements) For further details regarding testing setup, configurations please see the rest of the report.

<u>REVISION:</u>  <b>2</b>	<u>ECN INFORMATION:</u> EC No: <b>N/A</b> DATE: <b>07/10/2020</b>	<u>TITLE:</u> <b>2.92mm Edge Launch, Solderless Precision Connector (TMB-E9F2-1L1)</b> <b>CARLISLE IT CONFIDENTIAL</b>	<u>SHEET No.</u>  <b>1 of 10</b>
<u>DOCUMENT NUMBER:</u> <b>RSI-TMB-E9F2-1L1_02</b>	<u>SI ENGINEER:</u> <b>R.Stavoli</b>	<u>DESIGN ENGINEER</u> <b>P. Volkov</b>	<u>ENGINEERING MANAGER</u> <b>E.Soubh</b>
TEMPLATE FILENAME: SPM(SIZE_AJ)(V.1).DOC			

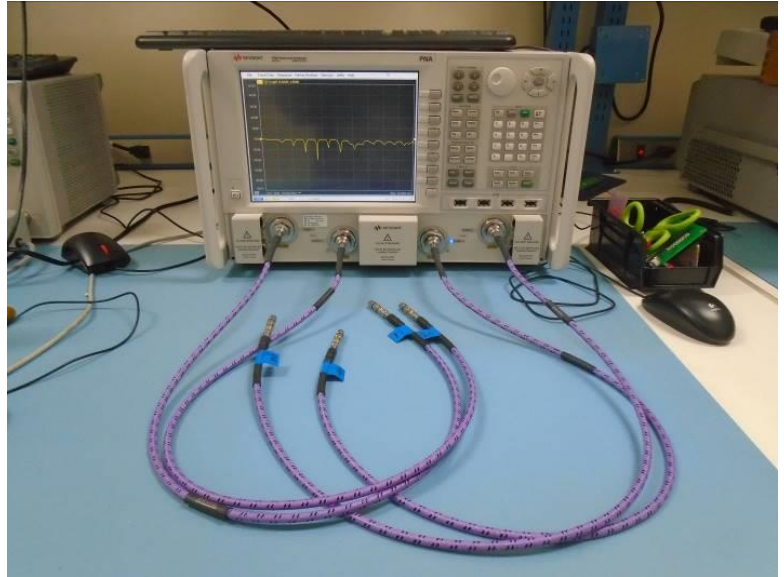
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## 1.0 TEST SETUP AND DUT

### Equipment, fixtures, and methods

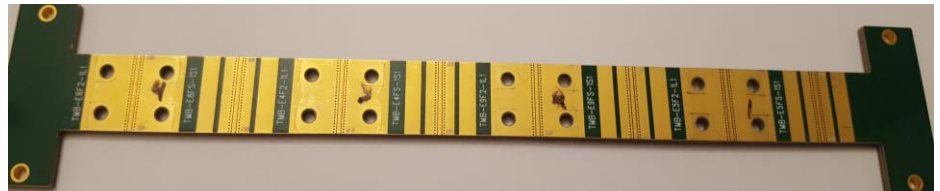
**Test method:** All data measured from test PCB shown below and a N5227A PNA Network Analyzer

- Calibration was performed up to the 2.92mm adapters using calibration kit: 8770F
- Data was swept from 10 MHz to 40GHz for 4000 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-E9F2-1L1
- Carlisle DUT PCB: Edge Launch Precision Connector Test Board (Rev A)
- Industry Leading Supplier Edge Launch PCB
- Port 1: 2.92mm edge mount
- Port 2: 2.92mm edge mount



### Testing Samples:

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

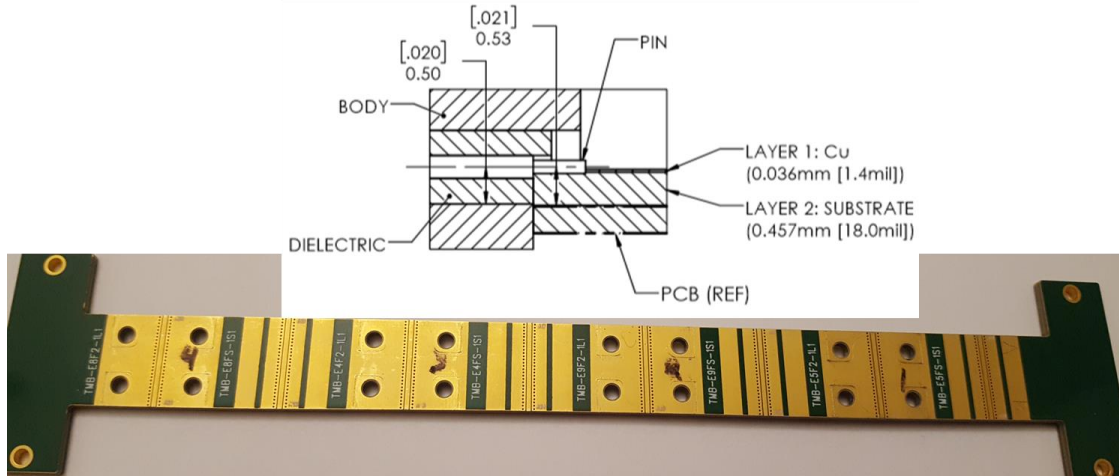
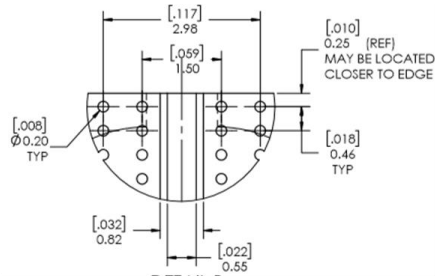
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TEMPLATE FILENAME: SPM(SIZE_A)(V.1).DOC			

# SIGNAL INTEGRITY REPORT

## 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:		
Layer	Material	Thickness		Notes
		mm	mils	
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	



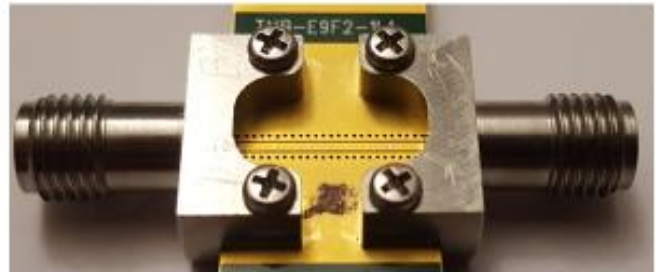
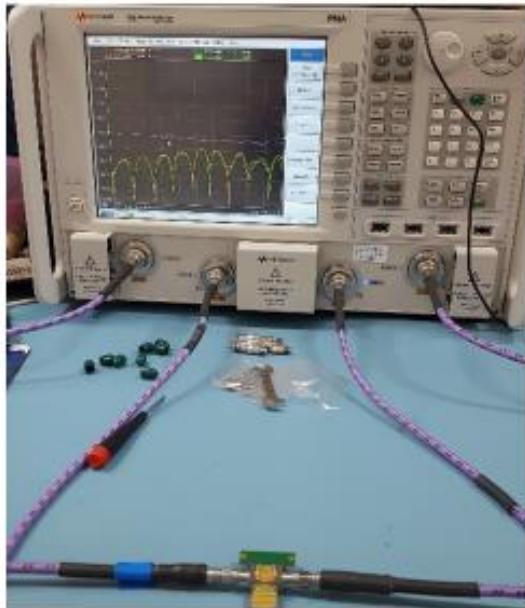
- Industry Leading Supplier Edge Launch Test Board
  - Microstrip
- Dielectric Material: Rodgers 4003 (Dk. 3.38, Df 0.0027 @ 10Ghz)
  - Thickness: 0.2032mm / 8 mil

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# SIGNAL INTEGRITY REPORT

## 3.0 MEASUREMENT SET-UP

Measurements are not dembedded and include the two 2.92mm edge launch precision connectors, and the PCB (transition, traces)

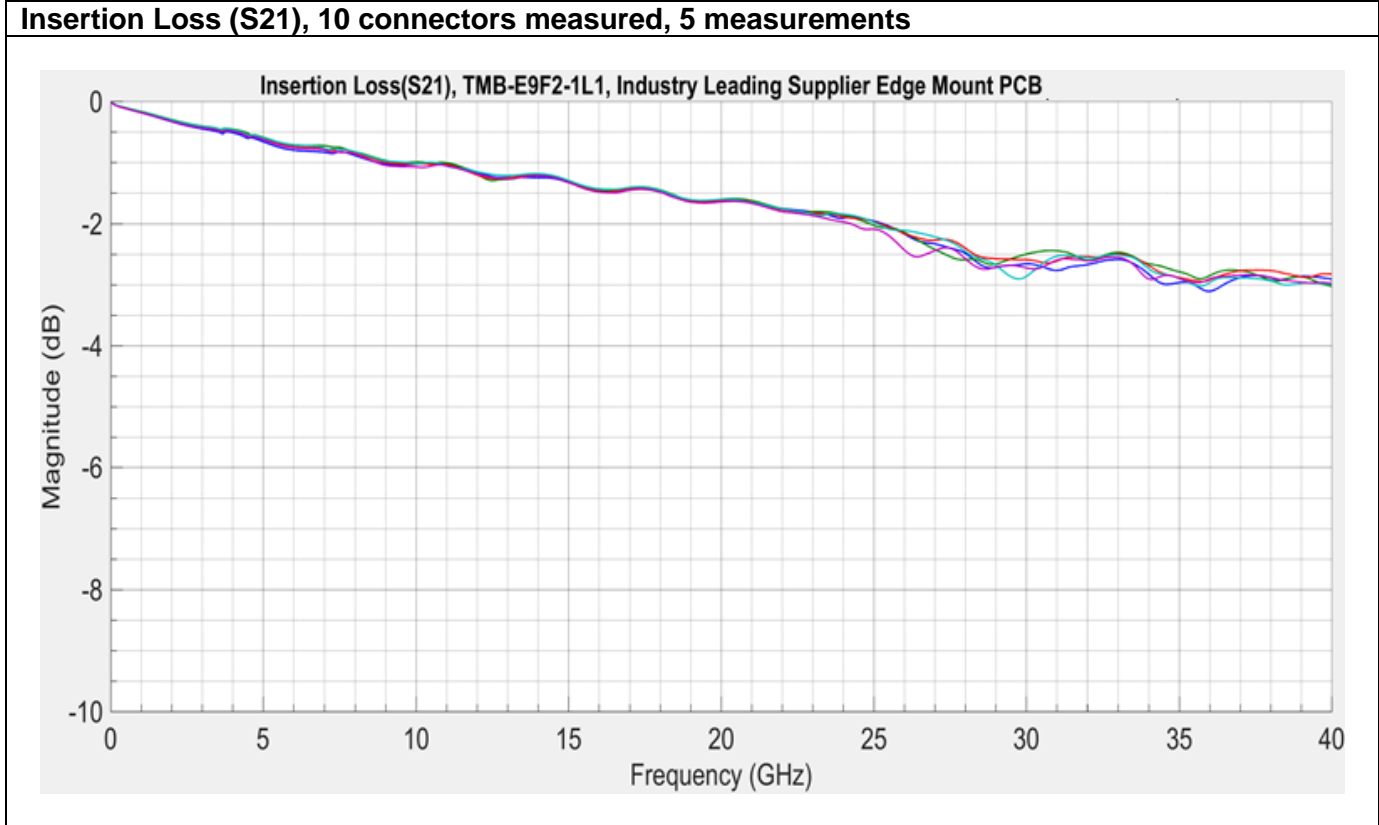


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# SIGNAL INTEGRITY REPORT

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

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

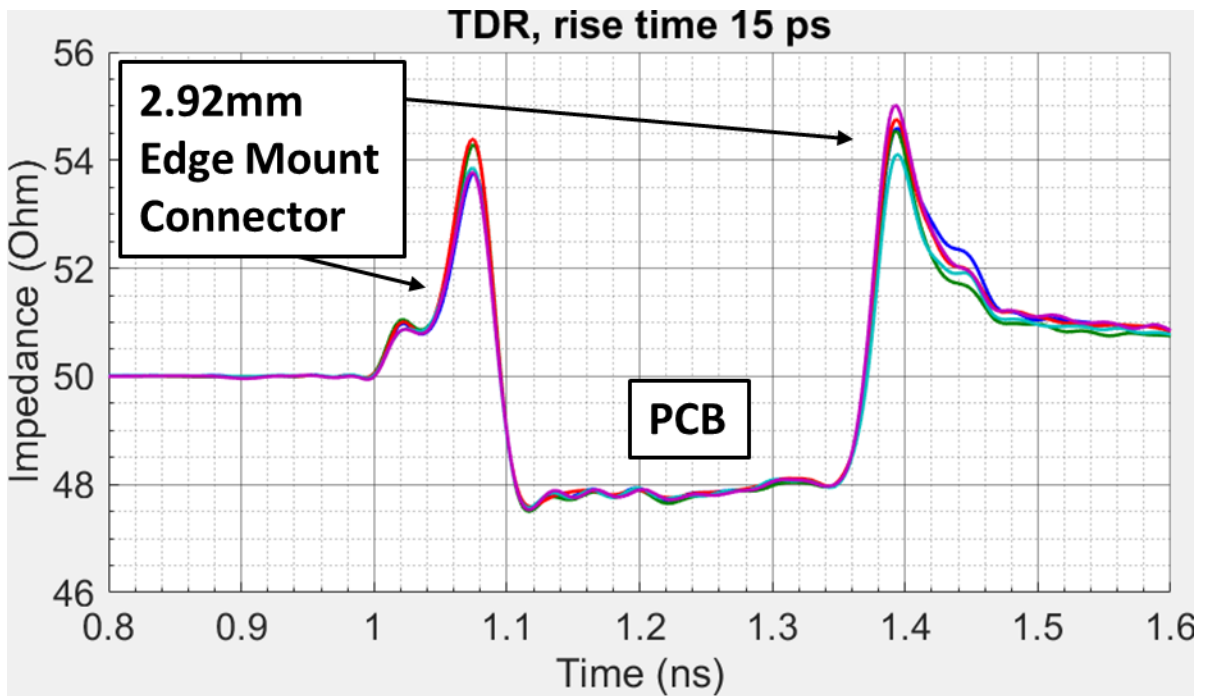
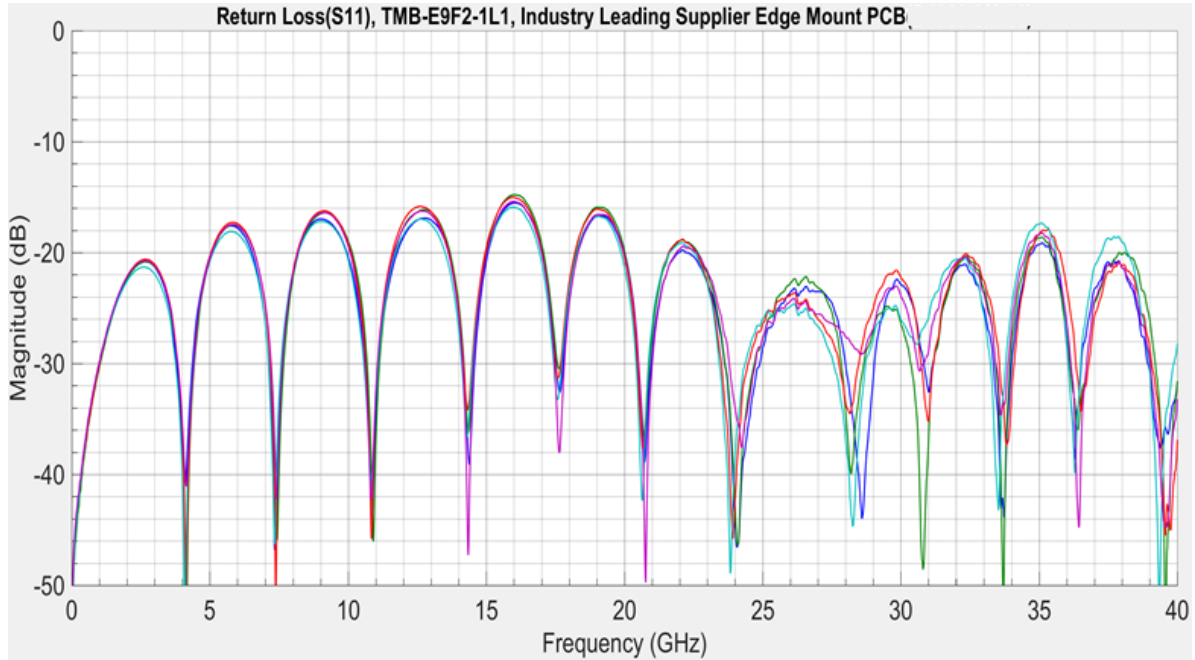


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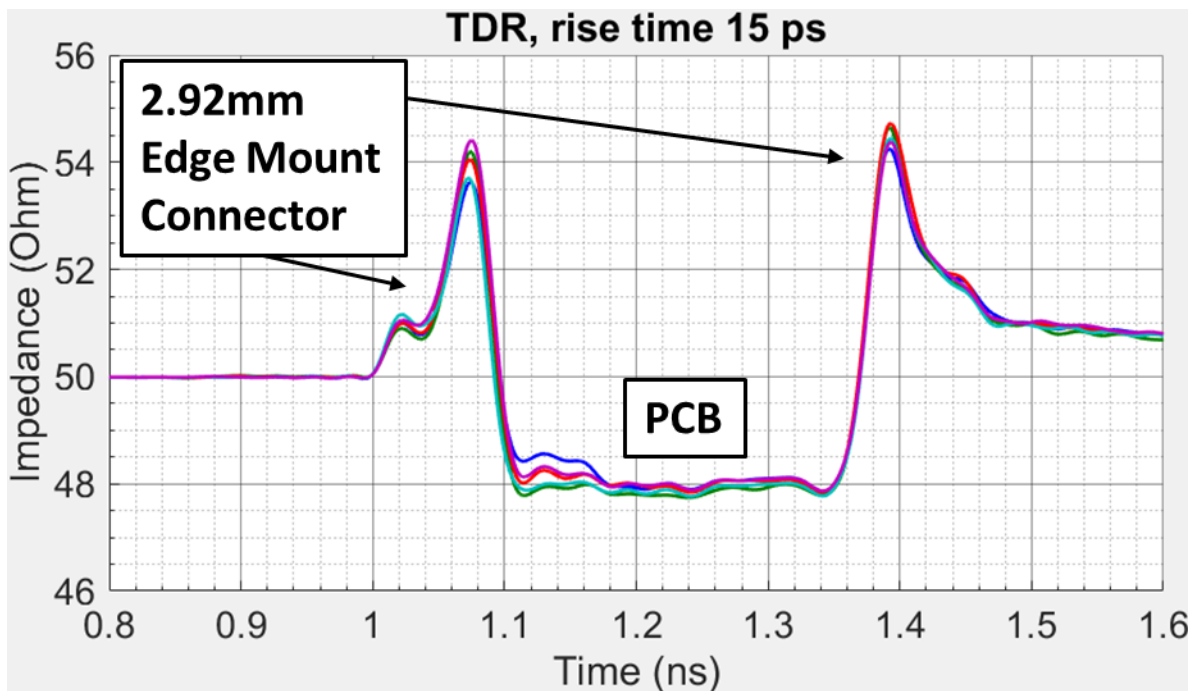
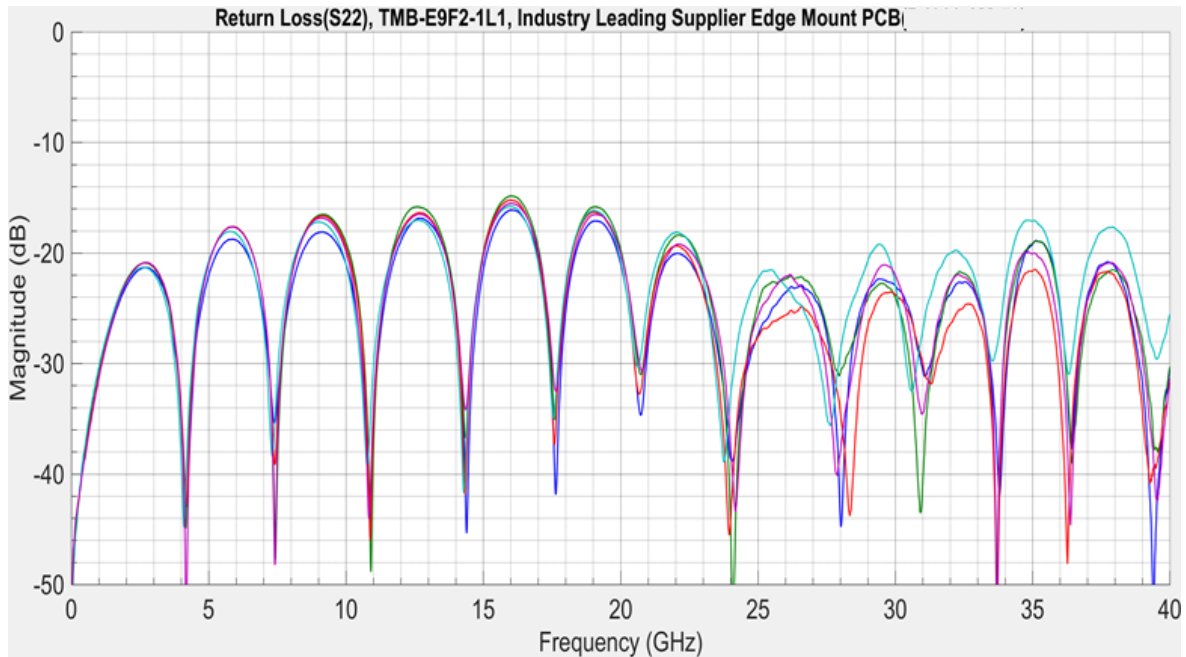
Return Loss (S11), 10 connectors measured, 5 measurements



REVISION: <b>2</b>	ECN INFORMATION: EC No: <b>N/A</b> DATE: <b>07/10/2020</b>	TITLE: <b>2.92mm Edge Launch, Solderless Precision Connector (TMB-E9F2-1L1)</b> CARLISLE IT CONFIDENTIAL	SHEET No. <b>6 of 10</b>
DOCUMENT NUMBER: <b>RSI-TMB-E9F2-1L1_02</b>	SI ENGINEER: <b>R.Stavoli</b>	DESIGN ENGINEER <b>P. Volkov</b>	ENGINEERING MANAGER <b>E.Soubh</b>
<small>TEMPLATE FILENAME: SPM(SIZE_A)(V.1).DOC</small>			

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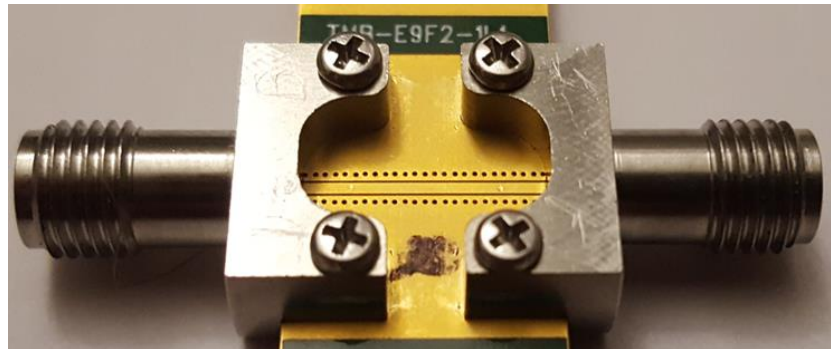
Return Loss (S22), 10 connectors measured, 5 measurements



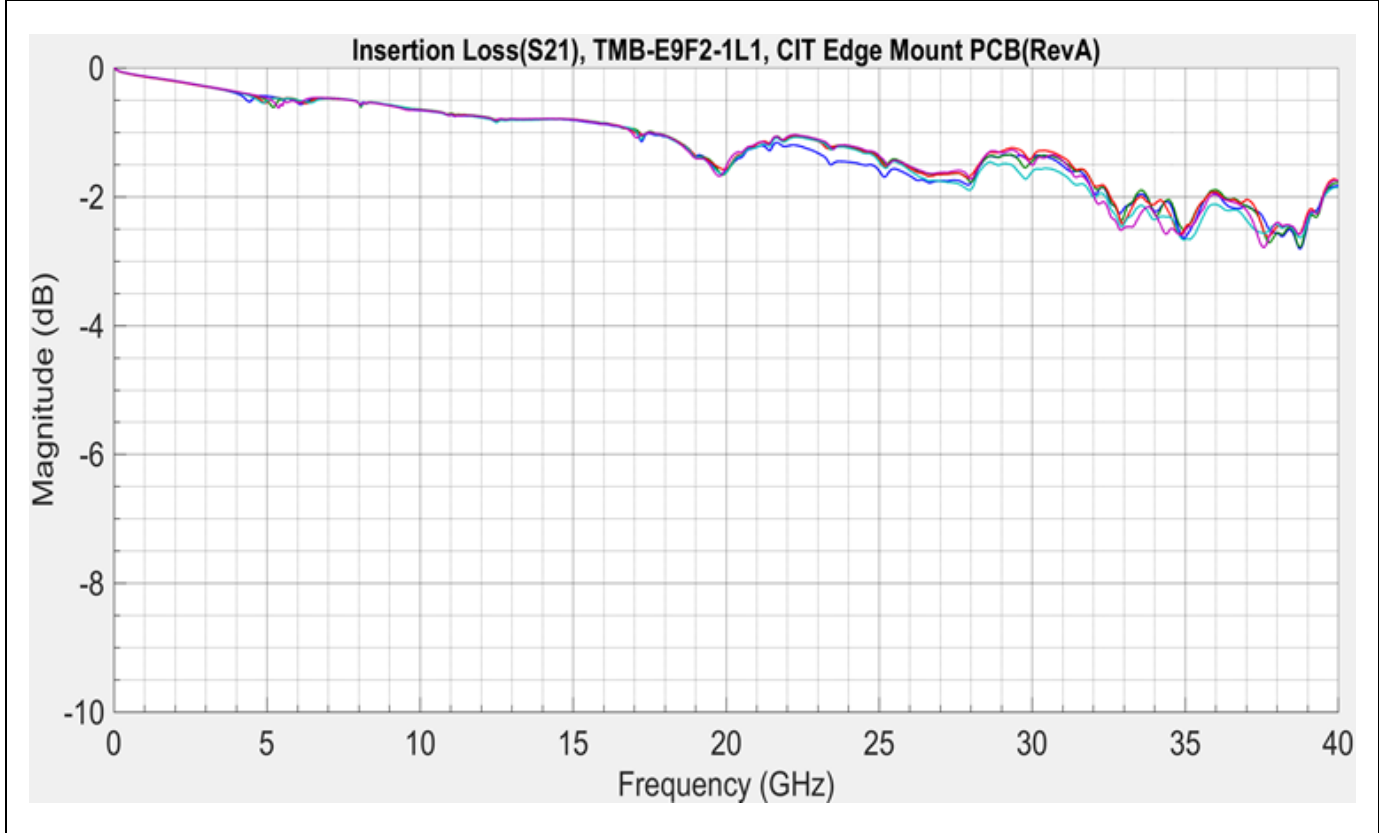
REVISION: <b>2</b>	ECN INFORMATION: EC No: N/A DATE: 07/10/2020	TITLE: <b>2.92mm Edge Launch, Solderless Precision Connector (TMB-E9F2-1L1)</b> CARLISLE IT CONFIDENTIAL	SHEET No. <b>7 of 10</b>
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<small>TEMPLATE FILENAME: SPM(SIZE_A)(V.1).DOC</small>			

# SIGNAL INTEGRITY REPORT

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



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

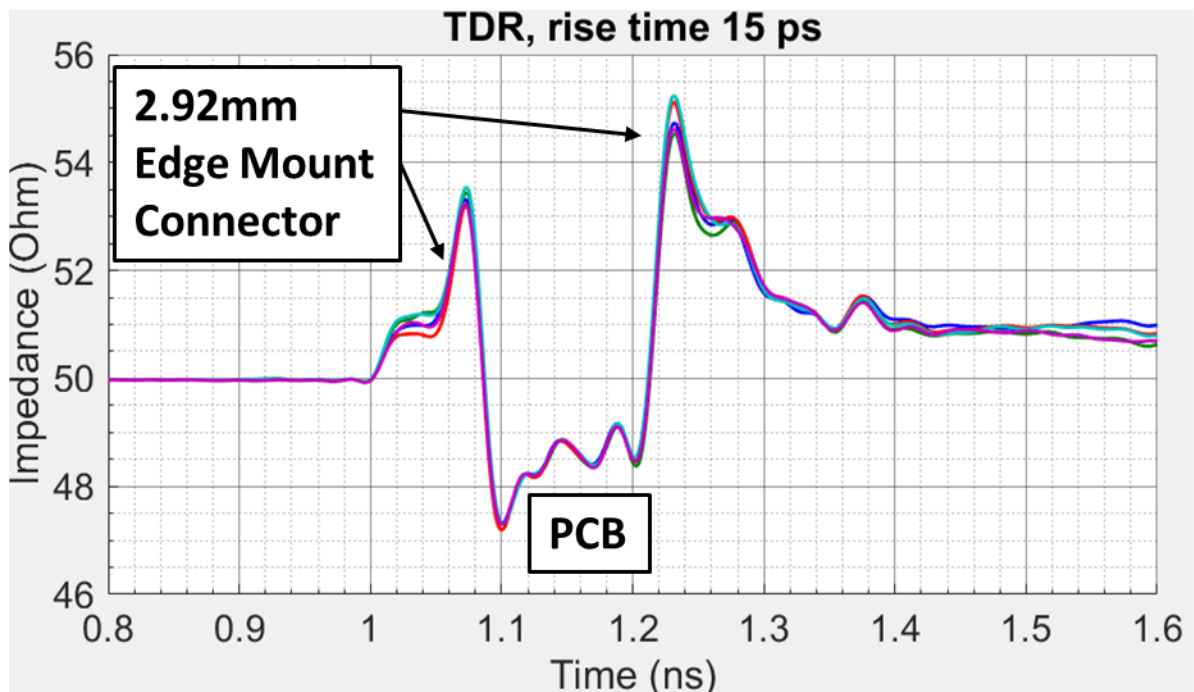
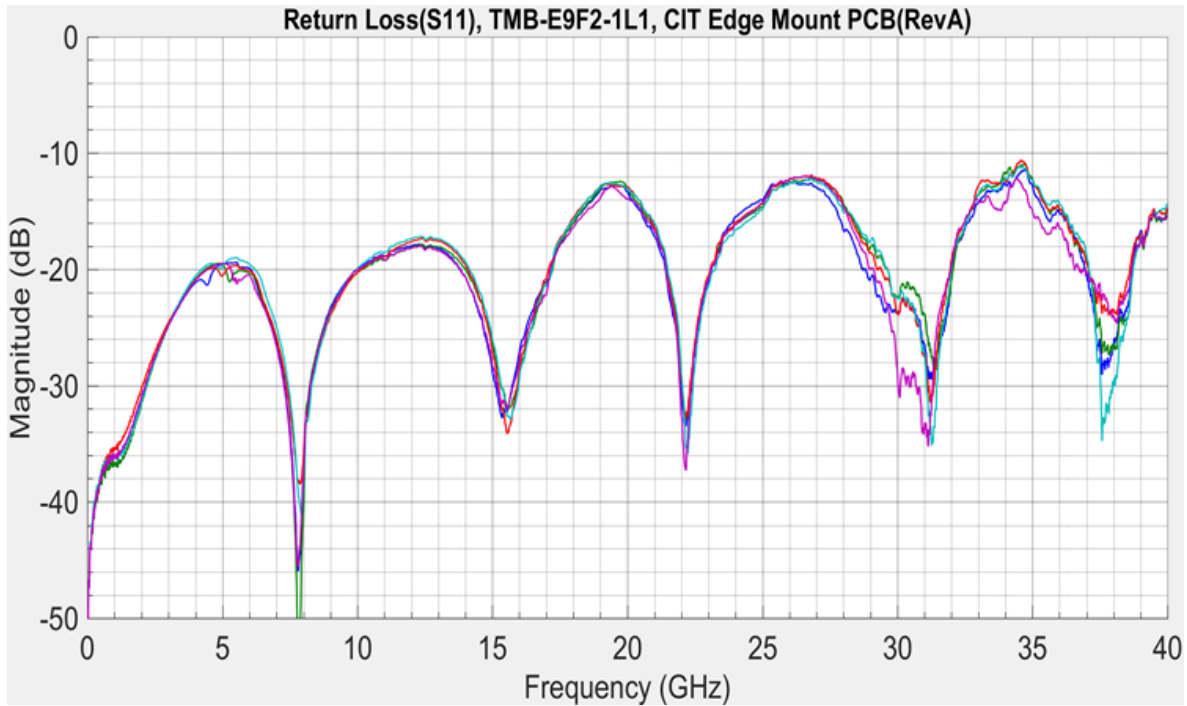


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TEMPLATE FILENAME: SPM(SIZE_AJ)(V.1).DOC			



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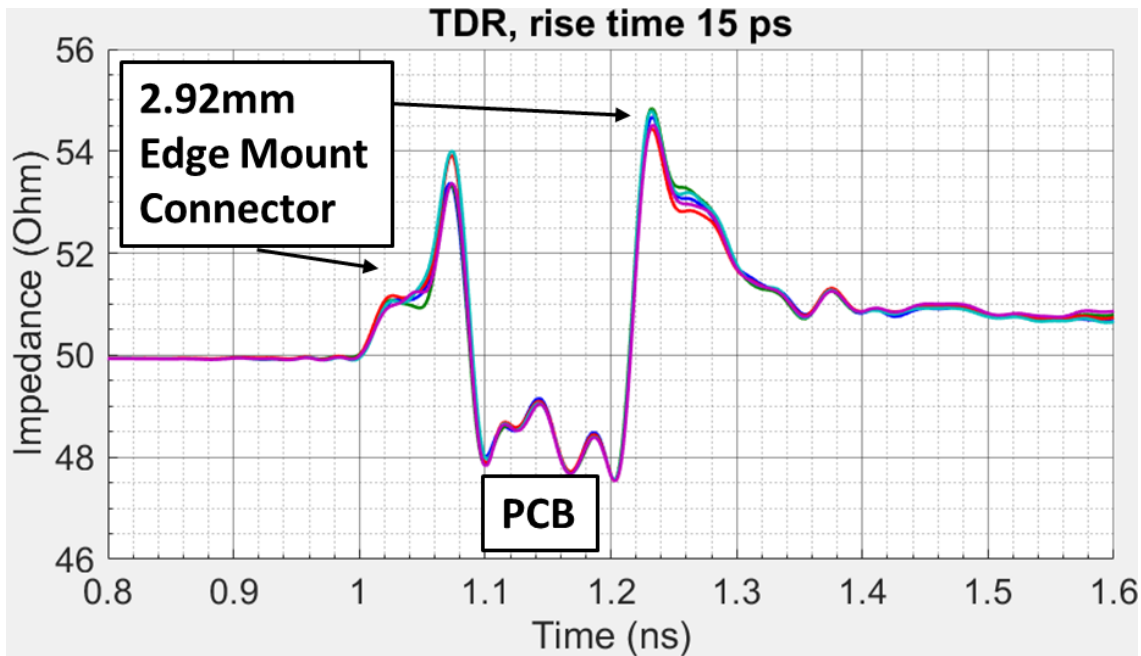
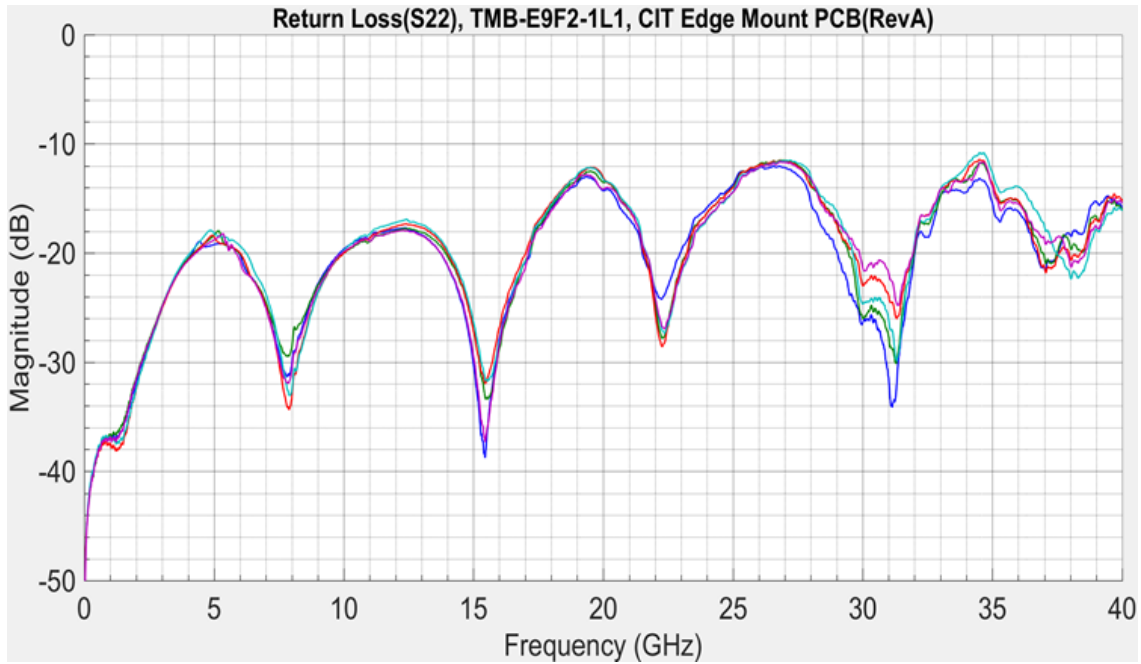
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# SIGNAL INTEGRITY REPORT

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



## 6.0 APPENDIX, (SPARAMETERS SHOWN IN REPORT)

PrecisionConnector\_TMB-E9F2-1L1\_Measurements\_040920 7/10/2020 10:07 AM Compressed (zipp... 1,449 KB

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