multiLane

PRECISION RF INTERCONNECTS

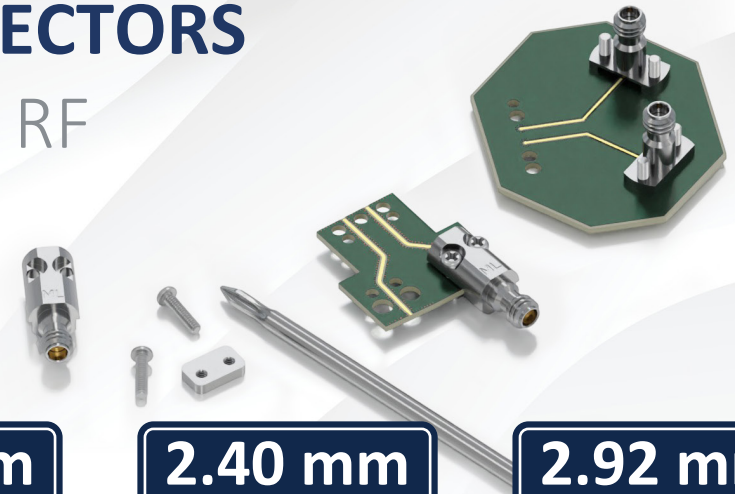
DC-110 GHz

Table of Contents

multiLane

PCB MOUNT CONNECTORS

Solderless Precision RF



1.00 mm
DC – 110 GHz

1.85 mm
DC – 67 GHz

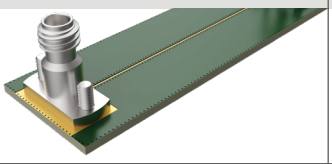
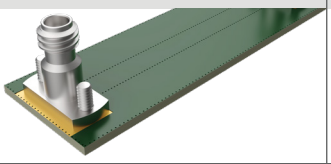
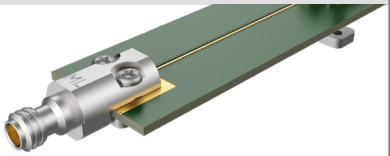
2.40 mm
DC – 50 GHz

2.92 mm
DC – 40 GHz

We recognize the industry's biggest challenge: consolidating a PCB stack up with the appropriate connector.

We developed our own solderless precision connectors to support our instrumentation and our partners with the aim to save time and cost when it comes to connector selection all the way to footprint optimization.

Standard Offering includes the following configurations:

Vertical Launch		Edge Launch
CPW	STL	EMI
		
CPW trace compatible	Exclusively Stripline trace compatible	Compatible with both Stripline & Coplanar Waveguide traces

Part Number Scheme

MLBMC-185FEEM-6

Connector Interface
100: 1.00mm
185: 1.85mm
240: 2.40mm
292: 2.92mm

Mounting Method
E: Edge Launch
V: Vertical Mount

Type
EM: EMI
CW: Coplanar Waveguide
SL: Stripline

Screw Length
Consult sales team

To place an order, reach out to: sales@multilaneinc.com

THE EMI EDGE LAUNCH CONNECTOR

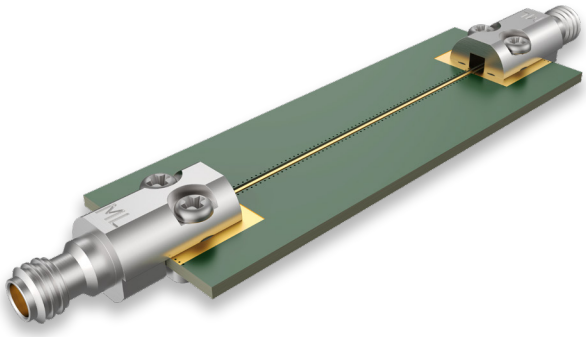
MULTILANE'S SIGNATURE PRECISION CONNECTOR

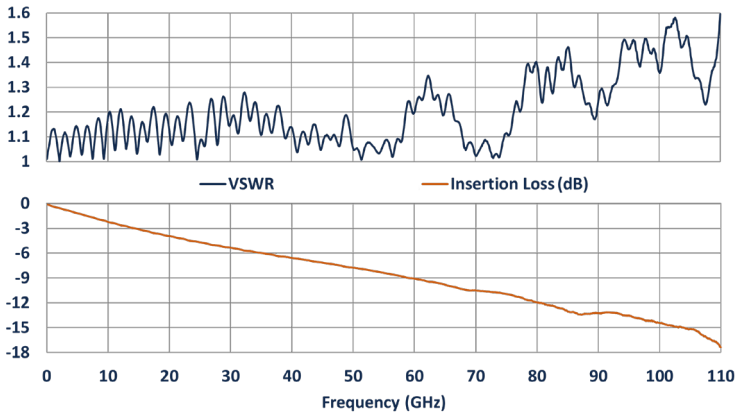
MLBMC-XXXFEEM-X

- 1.00 mm, 1.85 mm, 2.40 mm, 2.92 mm
- Solderless
- Easy 3 step installation
- Compact body for high density designs
- Compatible with both CPW & STL traces
- Compression mount

Edge Launch -EMI SI Performance Simulation for Individual Connector				
PN	**Interface**	**Frequency**	**VSWR**	**Insertion Loss**
MLBMC-100FEEM-X	1.00mm	DC-110GHz	1.12	0.097 dB
MLBMC-185FEEM-X	1.85mm	DC-67GHz	1.15	0.049 dB
MLBMC-240FEEM-X	2.40mm	DC-50GHz	1.13	0.030 dB
MLBMC-292FEEM-X	2.92mm	DC-40GHz	1.10	0.027 dB

SI Performance

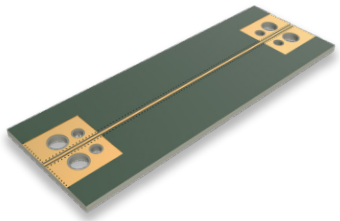




Measured Data for: 1.00mm Edge Launch – EMI

This measurement data was obtained using a 2in coplanar waveguide trace on 3.2 mils thick TU933+ substrate and two edge launch 1.00mm connectors

DEVELOPMENT BOARD AVAILABLE



MLPB-TB-CMFE

Compatible with 1.00 mm - 1.85 mm - 2.40 mm - 2.92 mm connectors interfaces

VERTICAL LAUNCH CONNECTORS

INDUSTRY STANDARD

COPLANAR WAVEGUIDE

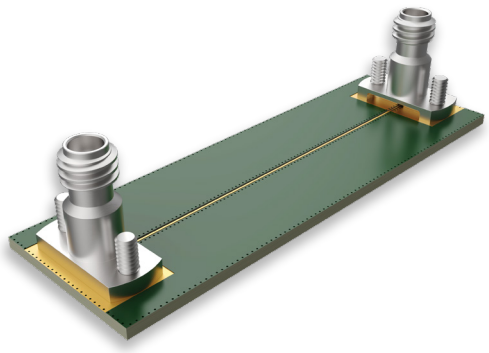
MLBMC-CMXXXFSTVCW-X

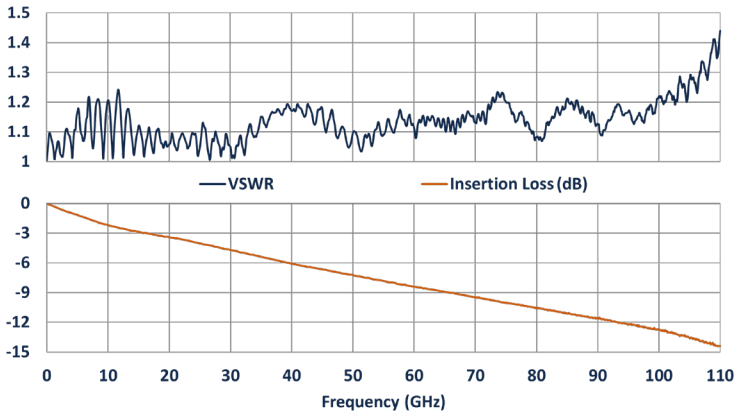
- 1.00 mm, 1.85 mm, 2.40 mm, 2.92 mm
- Solderless
- Easy 2 step installation
- Compatible only with CPW traces
- Compression mount

Reach out to sales@multilaneinc.com to request DXF, s2p or STEP files.
Our connectors are customizable.

Vertcial Mount - Coplanar Waveguide SI Performance Simulation for Individual Connector				
PN	**Interface**	**Frequency**	**VSWR**	**Insertion Loss**
MLBMC-100FVSL-X	1.00mm	DC-110GHz	1.06	0.059 dB
MLBMC-185FVSL-X	1.85mm	DC-67GHz	1.05	0.026 dB
MLBMC-240FVSL-X	2.40mm	DC-50GHz	1.03	0.018 dB
MLBMC-292FVSL-X	2.92mm	DC-40GHz	1.02	0.015 dB

SI Performance

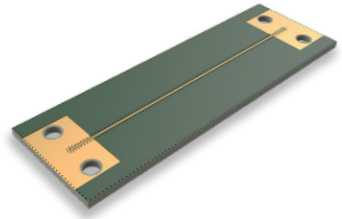




Measured Data for: 1.00mm Vertical Mount - CPW

This measurement data was obtained using a 2in coplanar waveguide trace on a 3.7 mils thick TU933+ substrate and two vertical launch 1.00mm connectors.

DEVELOPMENT BOARD AVAILABLE



MLBMC-TB-CM185FSTVCW
Compatible with 1.85 mm - 2.40 mm - 2.92 mm connectors interfaces

MLBMC-TB-CM100FSTVCW
Compatible with 1.00 mm connectors interfaces

VERTICAL LAUNCH CONNECTORS

INDUSTRY STANDARD

STRIPLINE

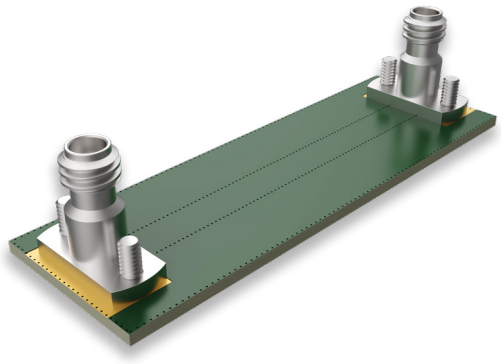
MLBMC-CMXXXFSTVSL-X

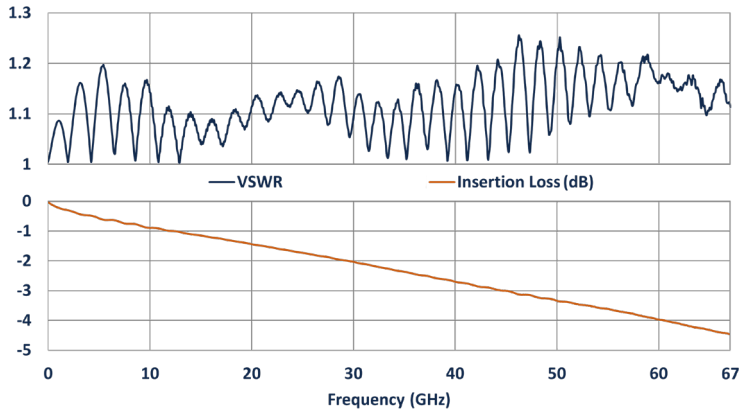
- 1.00 mm, 1.85 mm, 2.40 mm, 2.92 mm
- Solderless
- Easy 2 step installation
- Compatible only with STL traces
- Compression mount

Reach out to sales@multilaneinc.com to request DXF, s2p or STEP files.
Our connectors are customizable.

Vertcial Mount - Stripline SI Performance Simulation for Individual Connector				
PN	**Interface**	**Frequency**	**VSWR**	**Insertion Loss**
MLBMC-100FVSL-X	1.00mm	DC-110GHz	1.06	0.059 dB
MLBMC-185FVSL-X	1.85mm	DC-67GHz	1.05	0.026 dB
MLBMC-240FVSL-X	2.40mm	DC-50GHz	1.03	0.018 dB
MLBMC-292FVSL-X	2.92mm	DC-40GHz	1.02	0.015 dB

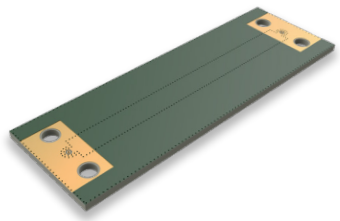
SI Performance





Measured Data for: 1.85mm Vertical Mount - STL
This measurement data was obtained using a 1.5in stripline trace on a 1.00mm thick PCB and two vertical launch 1.85mm connectors.

DEVELOPMENT BOARD AVAILABLE



MLBMC-TB-CM185FSTVSL
Compatible with 1.85 mm - 2.40 mm - 2.92 mm connectors interfaces

MLBMC-TB-CM100FSTVSL
Compatible with 1.00 mm connectors interfaces

TECHNICAL SPECIFICATIONS

TYPICAL VALUES

General Electrical Specifications

Coaxial PCB Mount Connector		
Impedance		50 Ω
Working Voltage at Sea Level		500V RMS Max.
Dielectric Withstanding Voltage at Sea Level		500V RMS Min.
Contact Resistance	Center Contact	3 Milliohms Max.
	Outer Contact	2.5 Milliohms Max.
Insulation Resistance		5000 Megaohms Min.

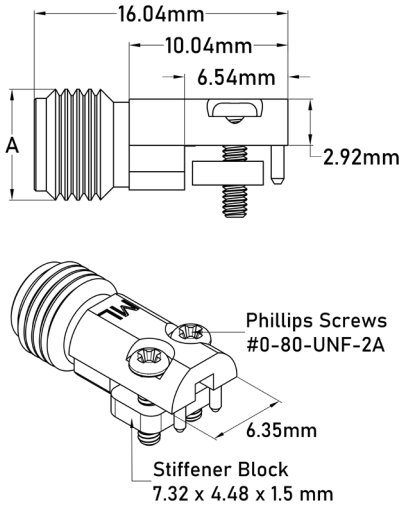
Mechanical & Environmental Specifications

Coaxial PCB Mount Connector		
Mating Cycles	Male to Female	500
	PCB Installation	100
Operating Temperature Range		+25 to +150°C
Materials	Center Pin	Gold plated beryllium copper
	Connector Body	Passivated stainless steel

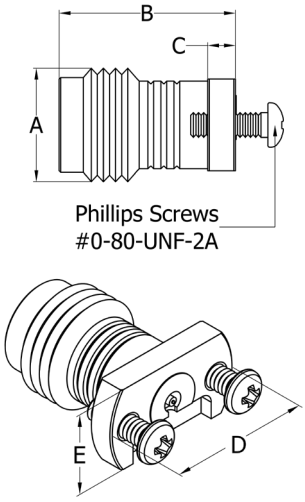
Mechanical Dimensions

STEP files available upon request, reach out to sales@multilaneinc.com

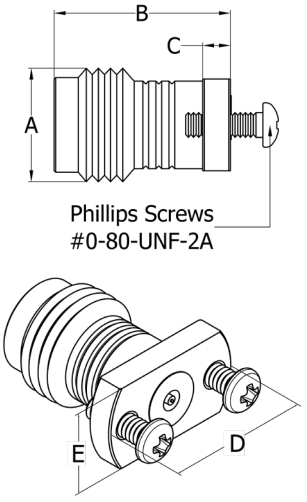
EMI Edge Launch Connector



CPW Vertical Launch Connector



STI Vertical Launch Connector



Connector Interface	A	B	C	D	E
1.00mm	M4	9.53mm	1.27mm	9.90mm	4.57mm
1.85mm	M7	10.86mm	1.71mm	10.01mm	5.66mm
2.40mm	M7	10.86mm	1.71mm	10.01mm	5.66mm
2.92mm	1/4-36 UNS	10.86mm	1.65mm	10.01mm	5.66mm

multiLane

RF JUMPER CABLES

Coax Cable Assemblies

1.00 mm
DC – 110 GHz

1.85 mm
DC – 67 GHz

2.40 mm
DC – 50 GHz

2.92 mm
DC – 40 GHz

General Electrical Specifications

- High performance flexible low loss cables
- Phase stable assemblies
- Cable sets of 2, 4, 8, 16 & 32 cable assemblies
- Time delay matched to +/- 0.5 ps or +/-0.15 or custom upon request
- Robust precision connectors termination
- High flex cycles up to 2K
- Customizable

Applications

- High speed IO test setup: instrumentation connection to DUT eval boards
- Pairs well with MultiLane data center test solutions such as MCB and HCB test fixtures

Part Number Scheme

MLCC-185MST-F04730-185MST-1-2

Connector Interface
100: 1.00mm
185: 1.85mm
240: 2.40mm
292: 2.92mm
M: Male
F: Female

Cable Configuration
047: Ø 0.047 in
086: Ø 0.086 in
15: 15cm
30: 30cm
60: 60cm
Custom lengths available

Phase Matched Cable Sets
null: single cable
03: skew ≤ 0.3 ps (phase match ± 0.15 ps)
1: skew ≤ 1 ps (phase match ± 0.5 ps)
2: set of 2 cables
4: set of 4 cables
8: set of 8 cables
16: set of 16 cables
32: set of 32 cables

Coax RF Jumper Cables Standard Offering						
Part Number	Frequency (max)	Connector End 1	Cable	Connector End 2	Measurement Data	
					Return Loss (max)	VSWR (max)
MLCC-100FST-F04715-100FST	110 GHz	1.00mm (F)	Ø.047 15cm	1.00mm (F)	19.25dB	1.24 *at 110 GHz*
MLCC-100FST-F04730-100FST	110 GHz	1.00mm (F)	Ø.047 30cm	1.00mm (F)	19.12dB	1.24 *at 110 GHz*
MLCC-100FST-F04760-100FST	110 GHz	1.00mm (F)	Ø.047 60cm	1.00mm (F)	19.05dB	1.25 *at 110 GHz*
MLCC-100MST-F04715-100MST	110 GHz	1.00mm (M)	Ø.047 15cm	1.00mm (M)	15.28dB	1.41 *at 110 GHz*
MLCC-100MST-F04730-100MST	110 GHz	1.00mm (M)	Ø.047 30cm	1.00mm (M)	17.73dB	1.29 *at 110 GHz*
MLCC-100MST-F04760-100MST	110 GHz	1.00mm (M)	Ø.047 60cm	1.00mm (M)	19.02dB	1.25 *at 110 GHz*
MLCC-185FST-F04715-185FST	67 GHz	1.85mm (F)	Ø.047 15cm	1.85mm (F)	24.12dB	1.13 *at 67 GHz*
MLCC-185FST-F04730-185FST	67 GHz	1.85mm (F)	Ø.047 30cm	1.85mm (F)	19.90dB	1.22 *at 67 GHz*
MLCC-185FST-F04760-185FST	67 GHz	1.85mm (F)	Ø.047 60cm	1.85mm (F)	17.68dB	1.30 *at 67 GHz*
MLCC-185MST-F04715-185MST	67 GHz	1.85mm (M)	Ø.047 15cm	1.85mm (M)	25.01dB	1.11 *at 67 GHz*
MLCC-185MST-F04730-185MST	67 GHz	1.85mm (M)	Ø.047 30cm	1.85mm (M)	23.76dB	1.13 *at 67 GHz*
MLCC-185MST-F04760-185MST	67 GHz	1.85mm (M)	Ø.047 60cm	1.85mm (M)	23.10dB	1.15 *at 67 GHz*
MLCC-240FST-F04715-240FST	50 GHz	2.40mm (F)	Ø.047 15cm	2.40mm (F)	19.55dB	1.22 *at 50 GHz*
MLCC-240FST-F04730-240FST	50 GHz	2.40mm (F)	Ø.047 30cm	2.40mm (F)	19.36dB	1.24 *at 50 GHz*
MLCC-240FST-F04760-240FST	50 GHz	2.40mm (F)	Ø.047 60cm	2.40mm (F)	19.06dB	1.27 *at 50 GHz*
MLCC-240MST-F04715-240MST	50 GHz	2.40mm (M)	Ø.047 15cm	2.40mm (M)	19.72dB	1.21 *at 50 GHz*
MLCC-240MST-F04730-240MST	50 GHz	2.40mm (M)	Ø.047 30cm	2.40mm (M)	19.59dB	1.23 *at 50 GHz*
MLCC-240MST-F04760-240MST	50 GHz	2.40mm (M)	Ø.047 60cm	2.40mm (M)	19.25dB	1.26 *at 50 GHz*
MLCC-292FST-F04715-292FST	40 GHz	2.92mm (F)	Ø.047 15cm	2.92mm (F)	27.52dB	1.08 *at 40 GHz*
MLCC-292FST-F04730-292FST	40 GHz	2.92mm (F)	Ø.047 30cm	2.92mm (F)	27.37dB	1.09 *at 40 GHz*
MLCC-292FST-F04760-292FST	40 GHz	2.92mm (F)	Ø.047 60cm	2.92mm (F)	27.21dB	1.10 *at 40 GHz*
MLCC-292MST-F04715-292MST	40 GHz	2.92mm (M)	Ø.047 15cm	2.92mm (M)	24.15dB	1.13 *at 40 GHz*
MLCC-292MST-F04730-292MST	40 GHz	2.92mm (M)	Ø.047 30cm	2.92mm (M)	23.92dB	1.14 *at 40 GHz*
MLCC-292MST-F04760-292MST	40 GHz	2.92mm (M)	Ø.047 60cm	2.92mm (M)	23.84dB	1.15 *at 40 GHz*

Coax RF Jumper Cables Standard Offering						
Part Number	Frequency (max)	Connector End 1	Cable	Connector End 2	Measurement Data	
					Return Loss (max)	VSWR (max)
MLCC-185MST-F08615-185MST	67 GHz	1.85mm (M)	Ø.086 15cm	1.85mm (M)	19.60dB	1.23 *at 67 GHz*
MLCC-185MST-F08630-185MST	67 GHz	1.85mm (M)	Ø.086 30cm	1.85mm (M)	18.89dB	1.25 *at 67 GHz*
MLCC-185MST-F08660-185MST	67 GHz	1.85mm (M)	Ø.086 60cm	1.85mm (M)	18.52dB	1.27 *at 67 GHz*
MLCC-240MST-F08615-240MST	50 GHz	2.40mm (M)	Ø.086 15cm	2.40mm (M)	22.87dB	1.15 *at 50 GHz*
MLCC-240MST-F08630-240MST	50 GHz	2.40mm (M)	Ø.086 30cm	2.40mm (M)	21.31dB	1.18 *at 50 GHz*
MLCC-240MST-F08660-240MST	50 GHz	2.40mm (M)	Ø.086 60cm	2.40mm (M)	20.49dB	1.21 *at 50 GHz*
MLCC-292MST-F08615-292MST	40 GHz	2.92mm (M)	Ø.086 15cm	2.92mm (M)	27.00dB	1.09 *at 40 GHz*
MLCC-292MST-F08630-292MST	40 GHz	2.92mm (M)	Ø.086 30cm	2.92mm (M)	25.73dB	1.10 *at 40 GHz*
MLCC-292MST-F08660-292MST	40 GHz	2.92mm (M)	Ø.086 60cm	2.92mm (M)	25.06dB	1.12 *at 40 GHz*

Insertion loss values are provided in the respective product datasheets.

Custom lengths and configurations available upon request, reach out to sales@multilaneinc.com

TECHNICAL SPECIFICATIONS

TYPICAL VALUES

General Electrical Specifications

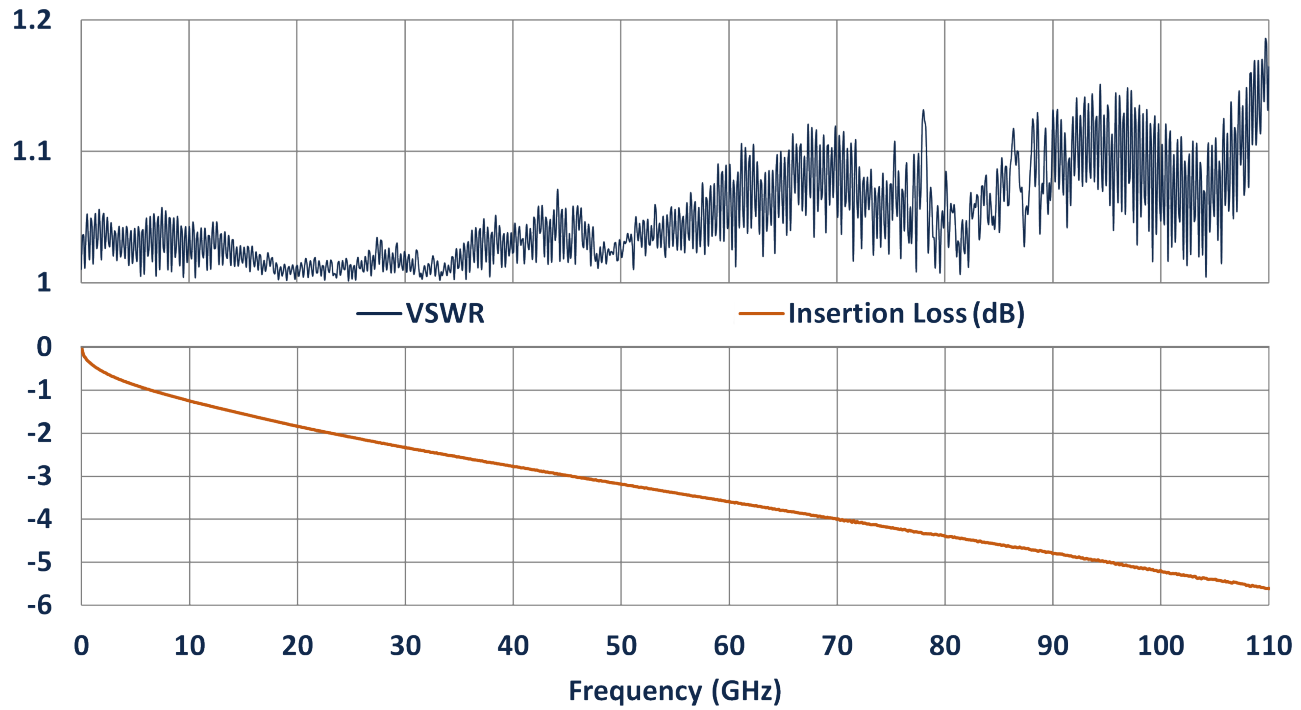
Ø.047 Coax Cable	
Impedance	50 Ω
Velocity of Propagation	80 %
Shielding Effectiveness	< -90 dB
Capacitance	81.7 pF / m

Ø.086 Coax Cable	
Impedance	50 Ω
Velocity of Propagation	82 %
Shielding Effectiveness	< -90 dB
Capacitance	83 pF / m

SI Performance

Measured data for: MLCC-100MST-F04730-100MST

Coaxial Cable Assembly, 1.00 mm (M) ST. to 1.00 mm (M) ST., 30cm, Flexible 047, Single Phase Stable Cable



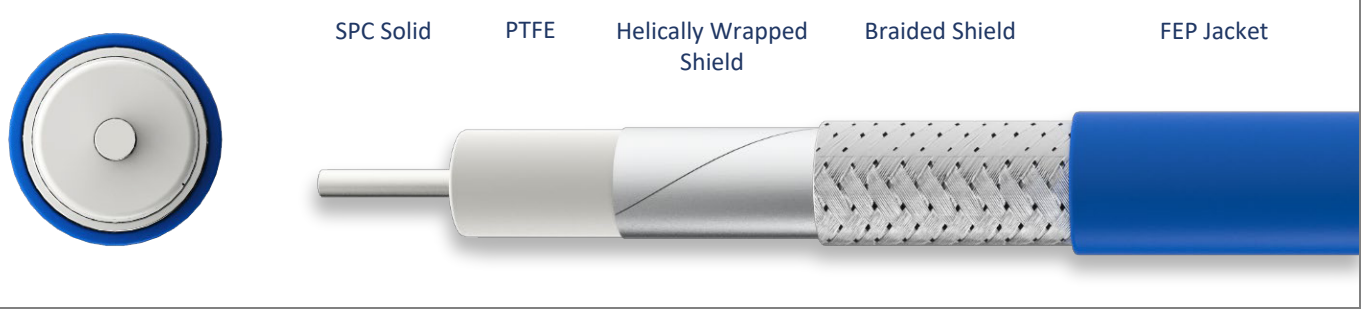
Mechanical & Environmental Specifications

Ø.047 Coax Cable		
Cable Type		Flexible
Shield Diameter		0.047 in (1.19 mm)
Operating Temperature Range		-45 to +200°C
Minimum Bending Radius	Static	7 mm
	Dynamic	15 mm
Flex cycles over 1 in diameter mandrel, o.5 lb Weight		>2000

Ø.086 Coax Cable		
Cable Type		Flexible
Shield Diameter		0.086 in (2.18 mm)
Operating Temperature Range		-55 to +125°C
Minimum Bending Radius	Static	11 mm
	Dynamic	22 mm
Flex cycles over 1 in diameter mandrel, o.5 lb Weight		>2000

Cable Mount Precision Connectors		
Mating Cycles		500
Pull strength: Cable to connector		10 lbs minimum
Operating Temperature Range		-55 to +125°C
Materials	Center Pin	Gold plated beryllium copper
	Connector Body	Passivated stainless steel

Cable Construction
Ø.047 Cable & Ø.086 Cable



Detailed cable mechanical dimensions available in datasheets.

multiLane

PRECISION ADAPTERS

Coaxial Connector Savers

1.00 mm
DC – 110 GHz

1.85 mm
DC – 67 GHz

2.40 mm
DC – 50 GHz

2.92 mm
DC – 40 GHz

Features & Benefits

- Designed for repeatability and accuracy
- Wide variety of mating interfaces
- Customizable

Applications

- High speed IO test setup: instrumentation connection to DUT eval boards
- Precision connector savers
- Adapts two different precision interfaces

Part Number Scheme

To place an order, reach out to: sales@multilaneinc.com

MLCC-185MST-185MST

Connector Interface
100: 1.00mm
185: 1.85mm
240: 2.40mm
292: 2.92mm
M: Male
F: Female

Connector Interface
100: 1.00mm
185: 1.85mm
240: 2.40mm
292: 2.92mm
M: Male
F: Female

TECHNICAL SPECIFICATIONS

TYPICAL VALUES

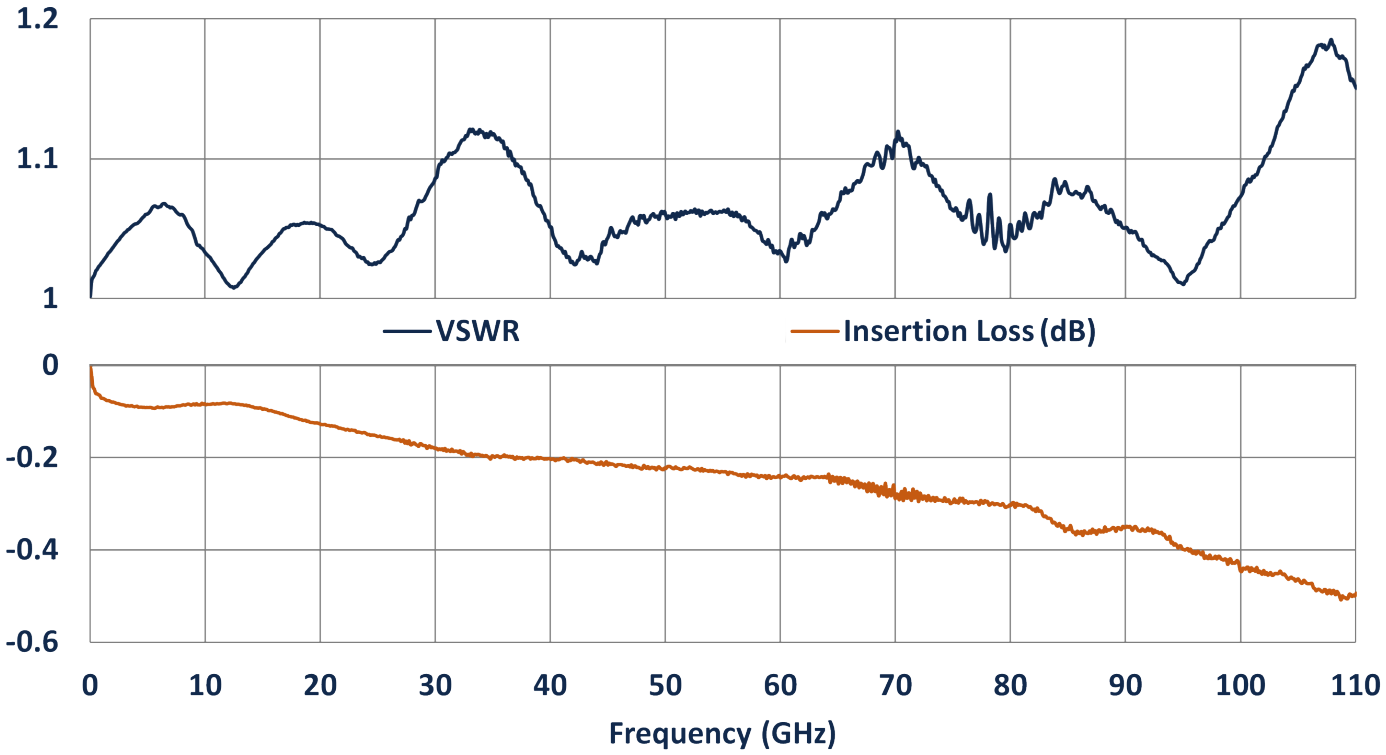
General Electrical Specifications

50 Ω RF Coaxial Adapters Standard Offering					
Configuration	**Part Number**	**Interface 1**	**Interface 2**	**Insertion Loss (max)**	**VSWR (max)**
Straight Plug to Plug Within Series	MLA-100MST-100MST	1.00mm (M)	1.00mm (M)	0.63dB *at 110 GHz*	1.30 *at 110 GHz*
	MLA-185MST-185MST	1.85mm (M)	1.85mm (M)	0.48dB *at 67 GHz*	1.15 *at 67 GHz*
	MLA-240MST-240MST	2.40mm (M)	2.40mm (M)	0.42dB *at 50 GHz*	1.15 *at 50 GHz*
	MLA-292MST-292MST	2.92mm (M)	2.92mm (M)	0.38dB *at 40 GHz*	1.15 *at 40 GHz*
Straight Jack to Jack Within Series	MLA-100FST-100FST	1.00mm (F)	1.00mm (F)	0.63dB *at 110 GHz*	1.30 *at 110 GHz*
	MLA-185FST-185FST	1.85mm (F)	1.85mm (F)	0.48dB *at 67 GHz*	1.20 *at 67 GHz*
	MLA-240FST-240FST	2.40mm (F)	2.40mm (F)	0.42dB *at 50 GHz*	1.20 *at 50 GHz*
	MLA-292FST-292FST	2.92mm (F)	2.92mm (F)	0.38dB *at 40 GHz*	1.20 *at 40 GHz*
Straight Plug to Jack Within Series	MLA-100MST-100FST	1.00mm (M)	1.00mm (F)	0.63dB *at 110 GHz*	1.30 *at 110 GHz*
	MLA-185MST-185FST	1.85mm (M)	1.85mm (F)	0.48dB *at 67 GHz*	1.20 *at 67 GHz*
	MLA-240MST-240FST	2.40mm (M)	2.40mm (F)	0.42dB *at 50 GHz*	1.20 *at 50 GHz*
	MLA-292MST-292FST	2.92mm (M)	2.92mm (F)	0.38dB *at 40 GHz*	1.20 *at 40 GHz*
Straight In-Between Series	MLA-185FST-100MST	1.85mm (F)	1.00mm (M)	0.49dB *at 67 GHz*	1.20 *at 67 GHz*
	MLA-185FST-100FST	1.85mm (F)	1.00mm (F)	0.49dB *at 67 GHz*	1.20 *at 67 GHz*
	MLA-185FST-240MST	1.85mm (F)	2.40mm (M)	0.42dB *at 50 GHz*	1.20 *at 50 GHz*
	MLA-185FST-240FST	1.85mm (F)	2.40mm (F)	0.42dB *at 50 GHz*	1.20 *at 50 GHz*
	MLA-185FST-292MST	1.85mm (F)	2.92mm (M)	0.38dB *at 40 GHz*	1.20 *at 40 GHz*
	MLA-185FST-292FST	1.85mm (F)	2.92mm (F)	0.38dB *at 40 GHz*	1.20 *at 40 GHz*
	MLA-185MST-100MST	1.85mm (M)	1.00mm (M)	0.49dB *at 67 GHz*	1.20 *at 67 GHz*
	MLA-185MST-100FST	1.85mm (M)	1.00mm (F)	0.49dB *at 67 GHz*	1.20 *at 67 GHz*
	MLA-185MST-240MST	1.85mm (M)	2.40mm (M)	0.42dB *at 50 GHz*	1.15 *at 50 GHz*
	MLA-185MST-240FST	1.85mm (M)	2.40mm (F)	0.42dB *at 50 GHz*	1.20 *at 50 GHz*
	MLA-185MST-292MST	1.85mm (M)	2.92mm (M)	0.38dB *at 40 GHz*	1.15 *at 40 GHz*
	MLA-185MST-292FST	1.85mm (M)	2.92mm (F)	0.38dB *at 40 GHz*	1.20 *at 40 GHz*
	MLA-240FST-292MST	2.40mm (F)	2.92mm (M)	0.38dB *at 40 GHz*	1.20 *at 40 GHz*
	MLA-240FST-292FST	2.40mm (F)	2.92mm (F)	0.38dB *at 40 GHz*	1.20 *at 40 GHz*
	MLA-240MST-292MST	2.40mm (M)	2.92mm (M)	0.38dB *at 40 GHz*	1.15 *at 40 GHz*
	MLA-240MST-292FST	2.40mm (M)	2.92mm (F)	0.38dB *at 40 GHz*	1.20 *at 40 GHz*

SI Performance

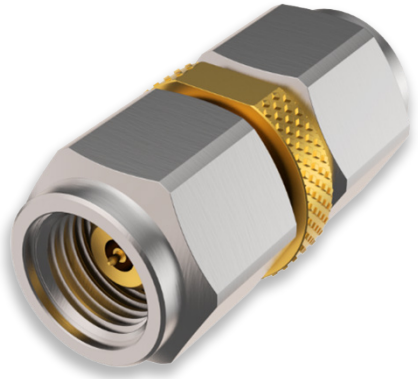
Measured data for: MLA-100MST-100MST

RF Coaxial Adapter, 50 Ohm, 1.00 mm (M) to 1.00 mm (M)



Mechanical & Environmental Specifications

Coaxial Adapters		
Mating Cycles		500
Operating Temperature Range	Within Series	-65 to +165°C
	Between Series	-55 to +165°C
Materials	Center Pin	Gold plated beryllium copper
	Shell	Passivated stainless steel



multiLane

PRECISION TERMINATORS

Coaxial Loads

1.00 mm
DC – 110 GHz

1.85 mm
DC – 67 GHz

2.40 mm
DC – 50 GHz

2.92 mm
DC – 40 GHz

Features & Benefits

- Designed for repeatability and accuracy
- Wide variety of mating interfaces
- Customizable

Applications

- Loads dissipating signal reflections from open ports

Part Number Scheme

To place an order, reach out to: sales@multilaneinc.com

MLCC-185MST-2

Connector Interface
100: 1.00mm
185: 1.85mm
240: 1.35mm
292: 2.92mm
M: Male
F: Female

Power Handling
1: 1 Watt
2: 2 Watt

General Electrical Specifications

Ω RF Coaxial Terminators Standard Offering				
Configuration	**Part Number**	**Interface**	**VSWR (max)**	**Power Handling**
Straight Plug	MLT-100MST-1	1.00mm (M)	1.56 *at 110 GHz*	1 Watt *at 25°C*
	MLT-185MST-2	1.85mm (M)	1.40 *at 67 GHz*	2 Watt *at 25°C*
	MLT-240MST-1	2.40mm (M)	1.35 *at 50 GHz*	1 Watt *at 25°C*
	MLT-292MST-2	2.92mm (M)	1.20 *at 40 GHz*	2 Watt *at 25°C*
Straight Jack	MLT-100FST-1	1.00mm (F)	1.56 *at 110 GHz*	1 Watt *at 25°C*
	MLT-185FST-2	1.85mm (F)	1.40 *at 67 GHz*	2 Watt *at 25°C*
	MLT-240FST-1	2.40mm (F)	1.35 *at 50 GHz*	1 Watt *at 25°C*
	MLT-292FST-2	2.92mm (F)	1.20 *at 40 GHz*	2 Watt *at 25°C*

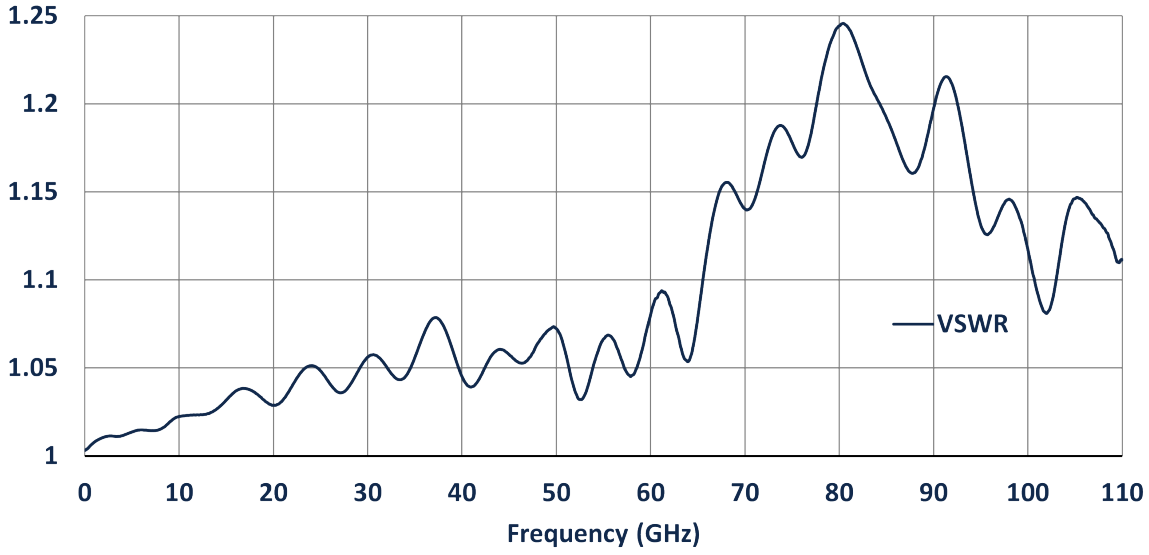
Mechanical & Environmental Specifications

Coaxial Adapters		
Mating Cycles		500
Operating Temperature Range		-55 to +125°C
Materials	Center Pin	Gold plated beryllium copper
	Shell	Passivated stainless steel

SI Performance

Measured data for: MLT-100MST

RF Coaxial Terminator, 50 Ohm, 1.00 mm (M), 1 Watt



Revision No.	Last Modified
1.2	October 2025

multiLane

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