

# SMPPM-T



The SMPPM-T is the smallest threaded open source connector on the market. Its unique and innovative combination of a MIL-STD-348 SMPM female interface connector together with a retractable threaded nut provides an integrated solution offering unprecedented electrical and mechanical performance. The SMPPM-T handles high density requirements with a connector centerline-to-centerline spacing of just 5 mm (0.20 in) while offering unmatched electrical stability at frequencies up to 67 GHz in even the harshest operating environments.

The SMPPM-T connector is available along with HUBER+SUHNER Astrolab's industry driving microbend «bend-to-the-end» technology that is already qualified for any aerospace application. The SMPPM-T connector complies with the hi-rel material restrictions of NASA while still offering full compliance with RoHS and REACH legislation in the commercial market.

## Key features and benefits

- No electrical length and phase variation under vibration, shock or any other kind of movement.
- The smallest threaded interface available that complies with MIL-STD-348.
- A mated SMPPM-T connector pair offers a 75% size and 85% mass reduction in comparison to a SMA connector solution.
- Advantage of 10 times higher mating cycles and reduced mating and demating force.

# SMPM-T

## Cable assemblies

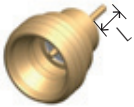
Type	Description
microbend™ MTR	<ul style="list-style-type: none"> <li>Frequency range up to 26.5 GHz</li> <li>Precision stainless steel SMA plug connector</li> <li>Precision SMPM-T female connector mateable with Corning Gilbert GPPO®</li> </ul>
microbend™ KMTR	<ul style="list-style-type: none"> <li>Frequency range up to 40 GHz</li> <li>Precision stainless steel 2.9 mm plug connector</li> <li>Precision SMPM-T female connector mateable with Corning Gilbert GPPO®</li> </ul>
microbend™ 2MTR	<ul style="list-style-type: none"> <li>Frequency range up to 67 GHz</li> <li>Precision SMPM-T female connector mateable with Corning Gilbert GPPO®</li> </ul>

## Features and benefits

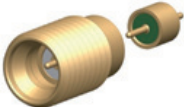
- Minimum bend radius of 1.52 mm (0.06 inch)
- Triple shielded for high isolation
- Eliminates need for costly right angle connectors
- Direct replacement for .047 inch semi-rigid cables
- Stock delivery on standard lengths
- Guaranteed 10 lbs (45 N) pull force
- 35 % lower insertion loss than .047 inch semi-rigid cable



## Hermetic male shrouds

Picture	Part number	Item number	Contact type	Interface	Contact length (L)
	29976H1-2-060S	80362701	square	full detent	0.06 in (1.52 mm)
	29976H1-2-090S	80362703		full detent	0.09 in (2.28 mm)
	29976H1-4-060S	80362705		smooth bore	0.06 in (1.52 mm)
	29976H1-4-090S	80362707		smooth bore	0.09 in (2.28 mm)

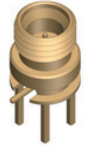

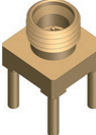
## Panel mount male connector

Picture	Part number	Item number	Interface
	29976TSP-2-005	80370422	full detent SMPM-T male
	29976TSP-4-005	80374421	smooth bore SMPM-T male


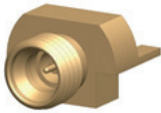

Bead as shown on picture sold separately.

# SMPM-T

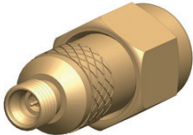
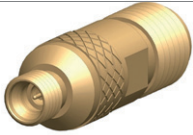
## PCB mount male connectors

Part number	Item number	Interface	Picture
29976S1-2-140	80362694	full detent	
29976S1-4-140	80362695	smooth bore	
29976RA-2-001	80374263	full detent	
29976RA-4-001	80374264	smooth bore	
29976T1-2-155	80366706	full detent	
29976T1-4-155	80370524	smooth bore	

## Edge mount male connectors

Part number	Item number	Interface	Picture
29976BM-2-001	80320230	full detent	
29976BM-4-001	80320231	smooth bore	
29976BM-2-002	80362690	full detent	
29976BM-4-002	80362691	smooth bore	
29976BM-2-004	80366009	full detent	
29976BM-4-004	80363975	smooth bore	

## Adaptors

Part number	Item number	Interface	Picture
29429-1T2	80317870	full detent SMPM-T male - SK (2.92 mm) plug	
29429-4T2	80362561	full detent SMPM-T male - SK (2.92 mm) jack	

# SMPM-T product characteristics<sup>1</sup>

Electrical data	
Impedance	50 $\Omega$
Frequency range	DC to 67 GHz
Contact resistance	Center conductor 6.0 milliohms max.; outer conductor 2.0 milliohms max.
DWV	335 Vrms at sea level
Insulation resistance	5000 megaohms min.
Corona levels	125 Vrms at 70000 ft
RF high potential	200 Vrms at 5 MHz
RF leakage	-80 dB max. at 3 GHz, -65 dB max. at 3 to 26.5 GHz
Magnetic permeability	<2 $\mu$
VSWR	1.1:1 to 26.5 GHz; 1.3:1 to 67 GHz
Insertion loss	.05 + .04 $\sqrt{f}$ in GHz (non-hermetic connectors); .12 $\sqrt{f}$ in GHz (hermetic connectors)
Mechanical data	
Center contact retention	1.5 lbs min. (captivated designs)
Durability	100 cycles min. into a full detent shroud; 1000 cycles min. into a smooth bore shroud
Force to engage	SMPM full detent - 3.5 lbs. typical; SMPM smooth bore - 1.5 lbs typical
Force to disengage	SMPM full detent - 5 lbs. typical; SMPM smooth bore - 1.5 lbs typical
Mating torque	22 $\pm$ 2 in-oz
Proof torque	36 in-oz min.
Environmental data	
Temperature range	-65 °C to +165 °C
Thermal shock	MIL-STD-202, method 107, test condition B
Moisture resistance	MIL-STD-202, method 106
Corrosion	MIL-STD-202, method 101, test condition B
Sine vibration	MIL-STD-202, method 204, 28 g peak
Random vibration	MIL-STD-202, method 214, test condition K-I, 46.3 grms
Shock	MIL-STD-202, method 213, 12000 g peak
Material and finishes	
Cable and shroud connectors	
Body and contact	Beryllium copper per ASTM B-196, gold plate per ASTM B-488, code C, type II over nickel plate per SAE-AMS-QQ-N-290, type 1
Dielectric	PTFE per ASTM D-1710, type I, grade 1, Torlon™ per ASTM D-5204 or Ultem™ per ASTM D-5205
Hermetic shroud connectors	
Body and contact	Kovar® per ASTM F-15, class 1, gold plate per ASTM B-488, code A, type III over nickel plate per SAE-AMS-QQ-N-290, type 1
Dielectric	Corning 7070 glass or equivalent
Adaptors	
Body and nut	#303 SS per ASTM A-582, gold plate per ASTM B-488, code C, type II over nickel plate per SAE-AMS-QQ-N-290, type 1
Contact	Beryllium copper per ASTM B-196, gold plate per ASTM B-488, code C, type II over nickel plate per SAE-AMS-QQ-N-290, type 1
Dielectric	PTFE per ASTM D-1710, type I, grade 1 and Ultem™ per ASTM D-5205

<sup>1</sup> Performance listed is typical. Individual part configuration may vary. Contact HUBER+SUHNER Astrolab for more information and specifications by part number. Customer specific factors pertaining to recommended mounting patterns including transmission line topology, substrate thickness and material, board-stackup, operating frequency, etc. must be submitted to HUBER+SUHNER Astrolab for analysis prior to release of final performance levels and mounting configuration.

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