



## MEGAPHASE EMC LAB TEST CABLES TO 40 GHZ



### EMC Lab Test Cables to 40 GHz

Low Loss Armored Test Cables for Compliance Measurements

- Low loss & flexible design
- Long lengths available
- Excellent shielding to -110 dB
- Armored construction
- Wide connector selection
- EMI/RFI, transient & spurious emissions testing

### Electrical Data

Maximum Frequency	Impedance	Propagation Velocity	Time Delay
EMC1: 40.0 GHz EMC2: 26.5 GHz EMC3: 18.0 GHz	50 Ω nominal	84% nominal	1.21 ns/ft (43.97 ns/m)
Shielding Effectiveness	Dielectric Withstanding Voltage		Capacitance
-110 dB minimum (cable only)	EMC1: 7 kV at 60 Hz EMC2: 10 kV at 60 Hz EMC3: 15 kV at 60 Hz		24.4 pF/ft (80.1 pF/m)

### Mechanical Data

Finished Outer Diameter	Static Bend Radius	Weight with Standard Jacket/Armor	Crush Resistance	Operating Temp. Range
EMC1: 0.380 in (0.965 cm) EMC2: 0.500 in (1.270 cm) EMC3: 0.625 in (1.587 cm)	EMC1: 1.75 in (4.445 cm) EMC2: 2.50 in (6.35 cm) EMC3: 3.00 in (7.62 cm)	EMC1: 0.13 lbs/ft (0.198 kg/m) EMC2: 0.29 lbs/ft (0.426 kg/m) EMC3: 0.33 lbs/ft (0.496 kg/m)	500 lbs/linear in.	-85° to 392°F (-65° to 200°C)

### Cable Construction

Inner Conductor	Dielectric	Outer Conductor	Ruggedization	Standard Finish
Solid Ag-plated Cu	PTFE Tape	Ag-plated Cu Strip/ Ag-plated Cu Flat Braid	Metal Braid/Metal Conduit	Neoprene

### Available Connectors

EMC1: 1.85 mm, 2.4 mm 2.9 mm, 3.5 mm, SMA, TNC, Type N

EMC2: 3.5 mm, BNC, SMA, TNC, Type N

EMC3: 7-16 DIN, SMA, TNC, Type N

(Maximum frequency dependent on cable)

Other connectors available upon request



## MEGAPHASE EMC LAB EM SERIES

### Specifications

Frequency		EMC1*			EMC2**			EMC3***			Conn Loss dB	
		Attenuation		VSWR	Attenuation		VSWR	Attenuation		VSWR		
GHz	Band	dB/ft	dB/m		dB/ft	dB/m		dB/ft	dB/m		dB/ft	dB/m
0.3	UHF	0.060	0.196	1.10	0.036	0.119	1.10	0.029	0.095	1.10	0.006	
0.5		0.077	0.254		0.047	0.154		0.038	0.124		0.009	
0.8		0.098	0.323		0.060	0.196		0.048	0.157		0.012	
1.0	L	0.110	0.362	1.10	0.067	0.220	1.10	0.054	0.177	1.10	0.014	
2.0	S	0.158	0.518		0.096	0.315		0.077	0.253		0.024	
2.4		0.174	0.570		0.105	0.346		0.085	0.279		0.027	
3.0	C	0.195	0.640	1.15	0.119	0.389	1.15	0.096	0.314	1.20	0.032	
4.0		0.227	0.745		0.138	0.453		0.111	0.365		0.040	
6.0		0.281	0.923		0.171	0.562		0.138	0.454		0.055	
8.0	X	0.328	1.077	1.20	0.200	0.656	1.20	0.162	0.531	1.25	0.070	
10.0		0.370	1.215		0.226	0.740		0.183	0.600		0.084	
12.4	Ku	0.416	1.366	1.25	0.254	0.832	1.25	0.206	0.676	1.30	0.101	
15.0		0.462	1.516		0.282	0.924		0.229	0.752		0.118	
18.0		0.511	1.677		0.312	1.023		0.254	0.833		0.139	
20.0	K	0.542	1.778	1.30	0.331	1.085	1.30	-	-	-	0.152	
22.0		0.571	1.875		0.349	1.145		-	-		-	0.165
24.0		0.600	1.969		0.366	1.202		-	-		-	0.178
26.5	Ka	0.635	2.082	1.35	0.388	1.272	1.35	-	-	-	0.194	
28.0		0.655	2.148		-	-		-	-		-	0.204
30.0		0.681	2.233		-	-		-	-		-	0.217
32.0		0.706	2.317		-	-		-	-		-	0.230
34.0		0.731	2.398		-	-		-	-		-	0.243
36.0		0.755	2.478		-	-		-	-		-	0.256
40.0	0.803	2.633	1.45	-	-	-	-	-	-	0.281		

\*EMC1: 1.85 mm, 2.4 mm, 2.9 mm, 3.5 mm, SMA, TNC, Type N

\*\*EMC2: 3.5 mm, BNC, SMA, TNC, Type N

\*\*\*EMC3: 7-16 DIN, SMA, TNC, Type N

Note: Typical Insertion Loss dB = (Attenuation)(Length) + 2(Conn. Loss)

Attenuation at any frequency = EMC1:  $(0.10730 \times \sqrt{\text{freq GHz}}) + (0.00310 \times \text{freq GHz})$

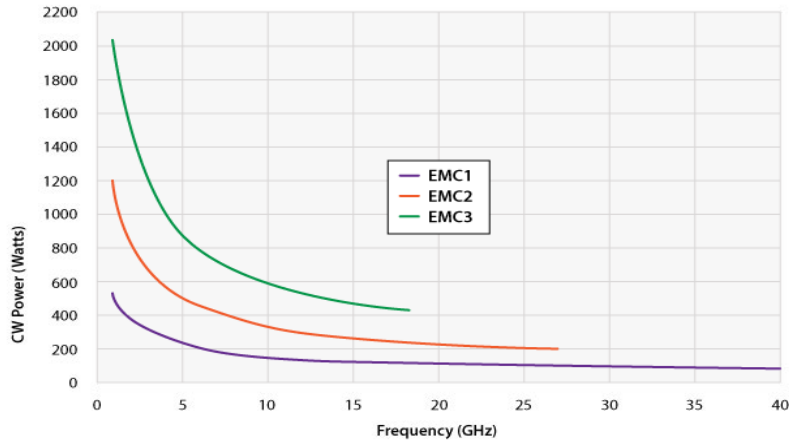
EMC2:  $(0.065 \times \sqrt{\text{freq GHz}}) + (0.002 \times \text{freq GHz})$

EMC3:  $(0.052 \times \sqrt{\text{freq GHz}}) + (0.00185 \times \text{freq GHz})$

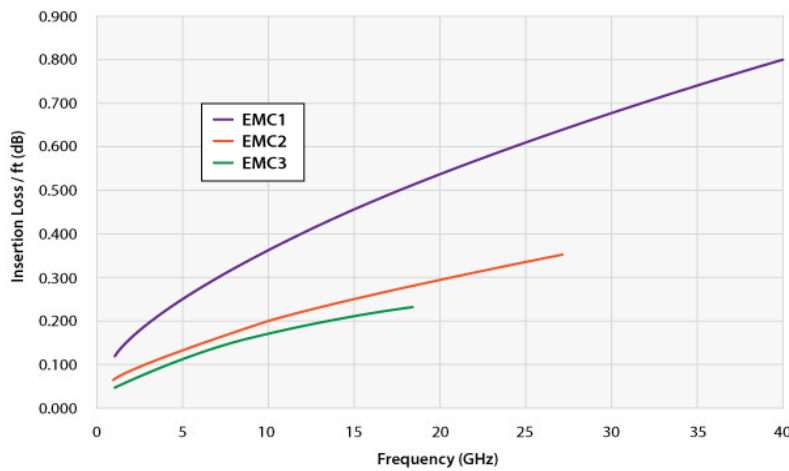


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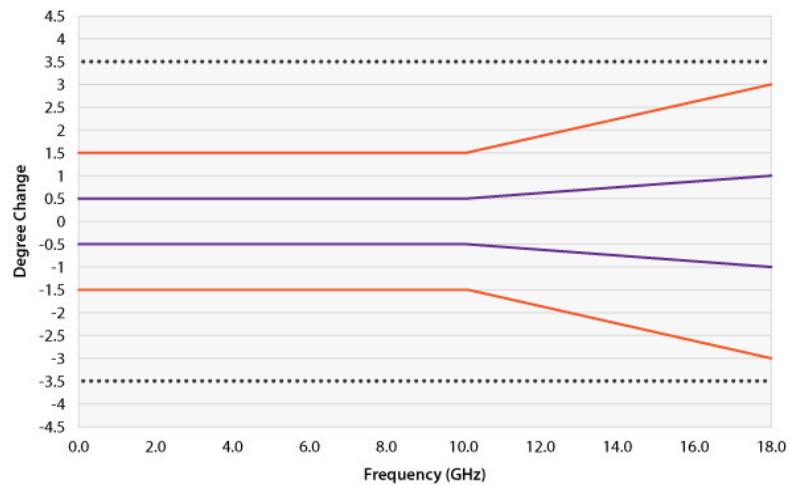
### Cable CW Power Handling



### Insertion Loss



### Phase Change vs. Flexure



\*EMC1: 1.85 mm, 2.4 mm, 2.9 mm, 3.5 mm, SMA, TNC, Type N

\*\*EMC2: 3.5 mm, BNC, SMA, TNC, Type N

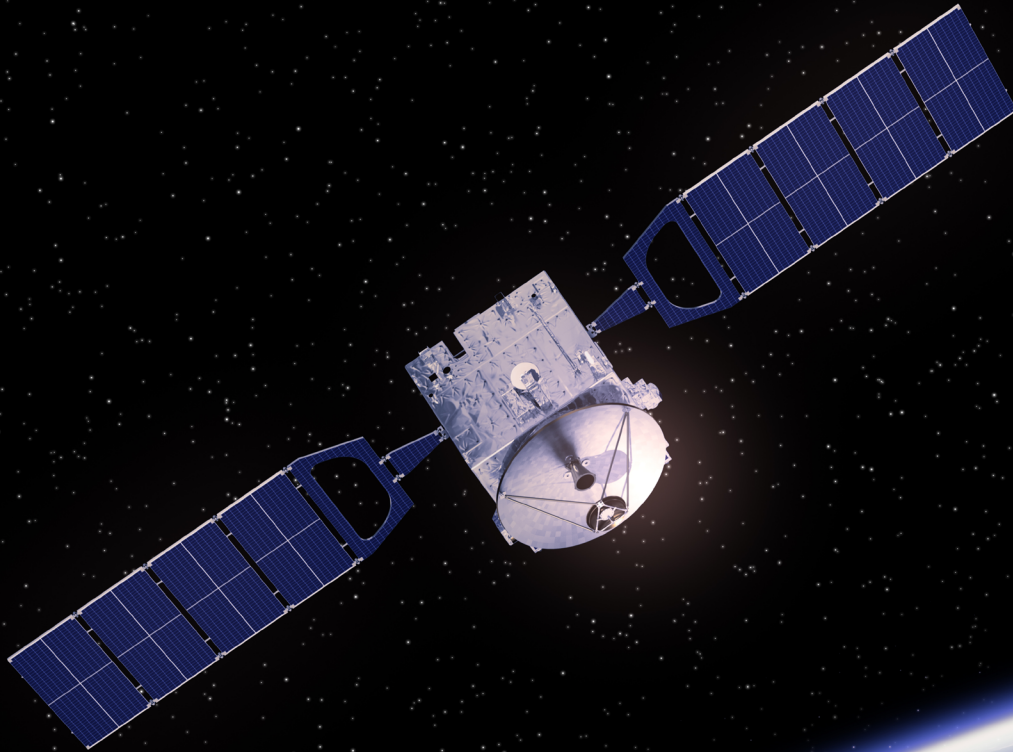
\*\*\*EMC3: 7-16 DIN, SMA, TNC, Type N





# MegaPhase®

*With the right connection anything is possible*



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## About us

Founded in 1998 and headquartered in Stroudsburg, Pennsylvania, MegaPhase designs and manufactures high-performance RF coaxial cables and connectors for OEMs in critical markets including test instrumentation, defense, aerospace, telecommunications, and satellite systems. Serving more than 500 customers in 30 countries—including major technology leaders and the U.S. government—MegaPhase is best known for its industry-leading GrooveTube® technology, a breakthrough flexible cable design used in high-reliability, high-power, and phase-defined applications across ground, sea, air, and space platforms. All products are manufactured in-house, tested 100% in a state-of-the-art RF lab up to 110 GHz, and engineered to deliver exceptional phase stability, low loss, and long-term measurement repeatability, helping customers achieve more reliable results at a lower cost per measurement.

**MegaPhase**

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