



## EMC Lab Test Cables to 40 GHz

### Low Loss Armored Test Cables for Compliance Measurements

- Low Loss
- Long Lengths Available
- Excellent Shielding -110 dB
- Armored
- Wide Variety of Connectors
- Flexible

MegaPhase designed its EMC series test cable specifically for the needs of EMC lab technicians. With assembly shielding effectiveness of -110 dB, these low loss, ultra-rugged armored cables are constructed using materials that meet electromagnetic compatibility standards including conductive interface gaskets. Phase matching, alternative conductive jackets (such as Ferrite), and long lengths are just some of the features available for EMI/RFI test environments including transient and spurious emissions measurements.

#### Electrical Data

**Maximum Frequency:**

EMC1: 40.0 GHz  
EMC2: 26.5 GHz  
EMC3: 18.0 GHz

**Impedance:**

50  $\Omega$  nominal

**Propagation Velocity:**

84% nominal

**Time Delay:**

1.21 ns/ft (43.97 ns/m)

**Shielding Effectiveness:**

-110 dB minimum (cable only)

**Dielectric Withstanding Voltage:**

EMC1 7 kV at 60 Hz  
EMC2: 10 kV at 60 Hz  
EMC3: 15 kV at 60 Hz

**Capacitance:**

24.4 pF/ft (80.1 pF/m)

#### Mechanical Data

**Finished Outer Diameter:**

EMC1: 0.380 in (0.965 cm)  
EMC2: 0.500 in (1.270 cm)  
EMC3: 0.625 in (1.587 cm)

**Static Bend Radius:**

EMC1: 1.75 in (4.445 cm)  
EMC2: 2.50 in (6.35 cm)  
EMC3: 3.00 in (7.62 cm)

**Weight with**

**Standard Jacket/Armor:**

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)

**Crush Resistance:**

500 lbs/linear in.

**Operating Temp. Range:**

-85° to 392°F (-65° to 200°C)



## EMC Lab EM Series (continued)

### Cable Construction

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

### Available Connectors

EMC1: 1.85 mm, 2.4 mm 2.9mm,3.5mm, SMA, TNC, Type N  
 EMC2: 3.5mm, BNC, SMA, TNC, Type N  
 EMC3: 7-16 DIN, SMA, TNC, Type N  
 (maximum frequency dependent on cable; other connectors available)

### Specifications

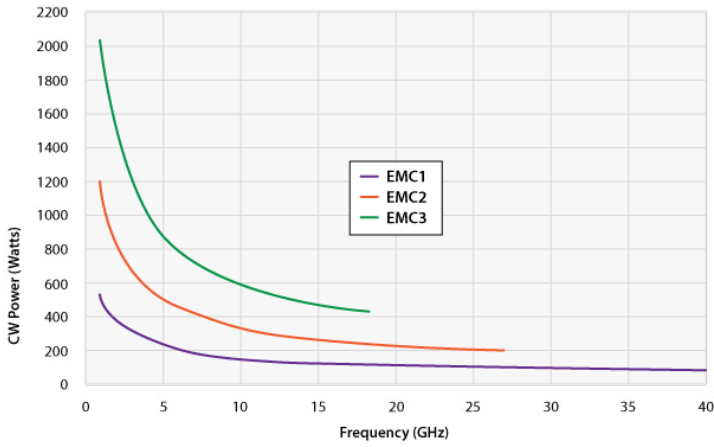
Frequency		EMC1			EMC2			EMC3			Conn. Loss dB
		Attenuation		VSWR	Attenuation		VSWR	Attenuation		VSWR	
GHz	Band	dB/ft	dB/m		dB/ft	dB/m		dB/ft	dB/m		
0.3	UHF	0.060	0.196	1.10	0.036	0.119	1.10	0.029	0.095	1.10	0.006
0.5		0.077	0.254		0.047	0.154		0.038	0.124		0.009
0.8		0.098	0.323		0.060	0.196		0.048	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		0.416	1.366		0.254	0.832		0.206	0.676		0.101
15.0	Ku	0.462	1.516	1.25	0.282	0.924	1.25	0.229	0.752	1.30	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		0.635	2.082		0.388	1.272		-	-		0.194
28.0	Ka	0.655	2.148	1.35	-	-	-	-	-	-	0.204
30.0		0.681	2.233		-	-	-	-	-	0.217	
32.0		0.706	2.317		-	-	-	-	-	0.230	
34.0		0.731	2.398	1.40	-	-	-	-	-	0.243	
36.0		0.755	2.478		-	-	-	-	-	0.256	
40.0		0.803	2.633		1.45	-	-	-	-	-	0.281

Note: Typical Insertion Loss dB = (Attenuation)(Length) + 2(Conn. Loss)  
 Attenuation at any frequency = EMC1: (0.10730 x √freq GHz) + (0.00310 x freq GHz)  
 EMC2: (0.065 x √freq GHz) + (0.002 x freq GHz)  
 EMC3: (0.052 x √freq GHz) + (0.00185 x freq GHz)

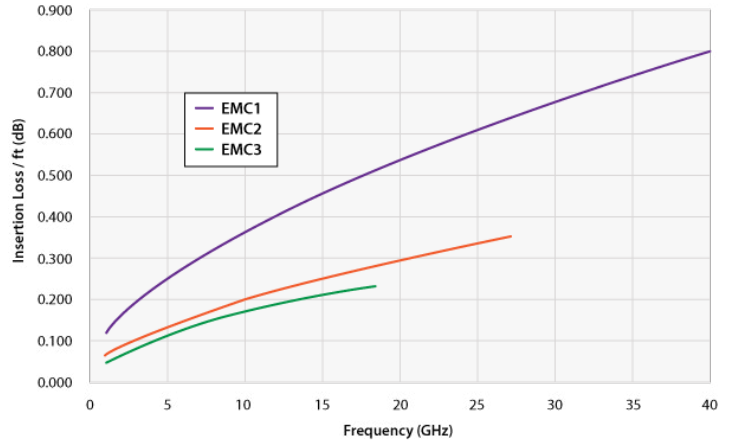


## EMC Lab EM Series (continued)

### Cable CW Power Handling



### Insertion Loss



### Phase Change vs. Flexure

