MegaPhase

EMC LAB TEST

MADE IN THE USA

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 Ω 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: 0.355 in (0.902 cm)
EMC2: 0.475 in (1.207 cm)
EMC3: 0.570 in (1.488 cm)

Static Bend Radius:
EMC1: 1.25 in (3.175 cm)
EMC2: 1.5 in (3.800 cm)
EMC3: 2.0 in (5.080 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:
EMC1: 500 lbs/linear in (89.3 kg/linear cm)
EMC2: 300 lbs/linear in (53.6 kg/linear cm)
EMC3: 300 lbs/linear in (53.6 kg/linear cm)

Operating Temp. Range:
-65° to 392°F (-65° to 200°C)
Above 185° F (85° C) use "T" designation and provide temperature range.

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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	0.034	0.113	1.10	0.026	0.086	1.10	0.006
0.5		0.077	0.254		0.044	0.146		0.034	0.112		0.009
0.8		0.098	0.323		0.056	0.185		0.043	0.142		0.012
1.0	L	0.110	0.362		0.063	0.207		0.049	0.159		0.014
2.0	S	0.158	0.518		0.090	0.294		0.070	0.229		0.024
2.4		0.174	0.570		0.098	0.322		0.077	0.252		0.027
3.0		0.195	0.640		0.110	0.361		0.086	0.283		0.032
4.0	C	0.227	0.745	1.15	0.127	0.418	1.15	0.101	0.330	1.20	0.040
6.0		0.281	0.923		0.157	0.515		0.125	0.411		0.055
8.0	X	0.328	1.077	1.20	0.182	0.597	1.20	0.146	0.480	1.25	0.070
10.0		0.370	1.215		0.204	0.670		0.166	0.543		0.084
12.4	Ku	0.416	1.366	1.25	0.228	0.749	1.25	0.186	0.612	1.30	0.101
15.0		0.462	1.516		0.252	0.827		0.207	0.681		0.118
18.0		0.511	1.677	1.30	0.277	0.910	1.30	0.230	0.755	1.35	0.139
20.0	K	0.542	1.778		0.293	0.962		-	-	-	0.152
22.0		0.571	1.875		0.308	1.011		-	-	-	0.165
24.0		0.600	1.969		0.323	1.058		-	-	-	0.178
26.5	Ka	0.635	2.082	1.35	0.340	1.115	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	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: (0.06227 x √freq GHz) + (0.00073 x freq GHz)
EMC3: (0.04687 x √freq GHz) + (0.00173 x freq GHz)

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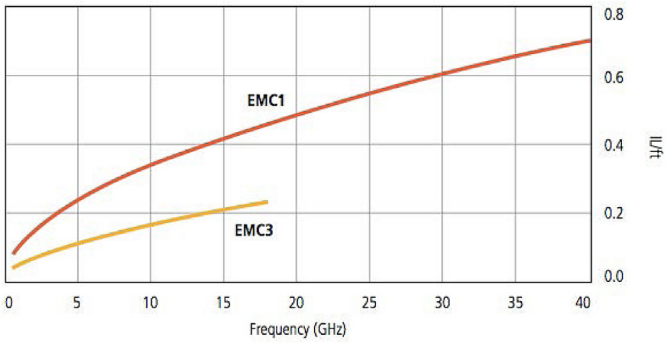
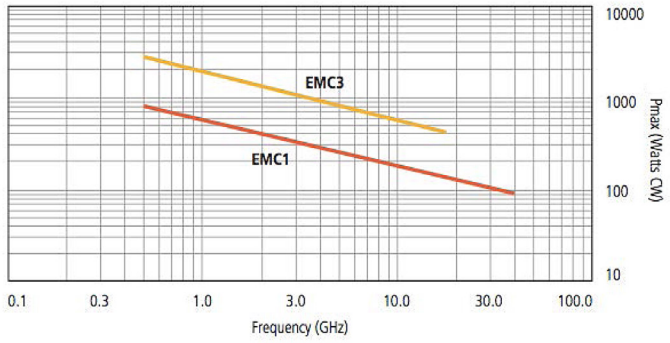
EMC Lab EM Series (continued)

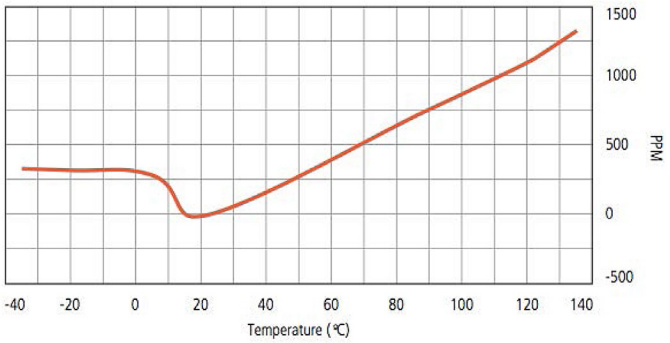
Insertion Loss



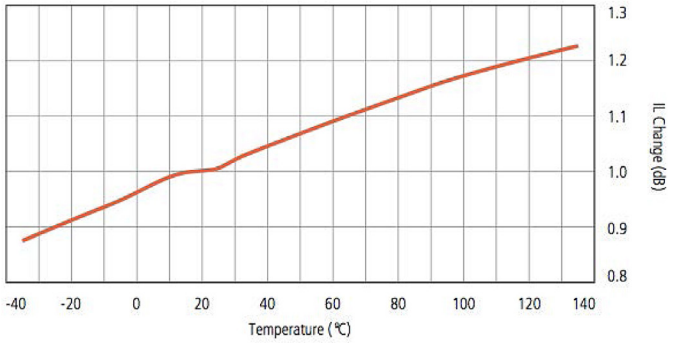
Cable CW Power Capability



Phase Change vs. Temperature



Insertion Loss vs. Temperature



Note: Typical Insertion Loss dB = (Attenuation)(Length) + 2(Conn. Loss)
Attenuation at any frequency = (0.19043 x √freq GHz) + (0.00957 x freq GHz)

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