

Phase³TM

MEGAPHASE PHASE³TM CABLES TO 67 GHz



Phase³TM Cables to 67 GHz

Ultra-Low Loss Performance

- Ultra-low loss cable assemblies with excellent shielding effectiveness up to -110 dB and low VSWR
- Lightweight, super-flexible construction with a helical foil/braid outer conductor for demanding applications
- Ideal for phased-array radar, electronic warfare, and ATE systems, with phase matching, delay matching, and armoring available

Electrical Data

Maximum Frequency	Impedance	Propagation Velocity	Time Delay
C08: 67.0 GHz C11: 50.0 GHz C12: 40.0 GHz C19: 26.5 GHz C29: 18.0 GHz	50 Ω nominal	C08: 75% nominal C11, 12, 19, 29: 84% nominal	C08: 1.35 ns/ft (4.43 ns/m) C11, 12, 19, 29: 1.21 ns/ft (3.97 ns/m)
Shielding Effectiveness	Dielectric Withstanding Voltage		Capacitance
-110 dB minimum (cable only)	C08: 2.5 kV at 60 Hz C11: 5.0 kV at 60 Hz C12: 7.0 kV at 60 Hz C19: 10.0 kV at 60 Hz C29: 15.0 kV at 60 Hz		C08: 27.0 pF/ft (88.6 pF/m) C11, 12, 19, 29: 24.0 pF/ft (78.7 pF/m)

Mechanical Data

Finished Outer Diameter	Static Bend Radius	Weight with Standard Jacket/Armor	Operating Temp. Range
C08: 0.110 in (0.279 cm) C11: 0.140 in (0.356 cm) C12: 0.144 in (0.366 cm) C19: 0.225 in (0.572 cm) C29: 0.310 in (0.787 cm)	C08: 0.50 in (1.300 cm) C11: 0.75 in (1.905 cm) C12: 0.75 in (1.905 cm) C19: 1.25 in (3.175 cm) C29: 1.75 in (4.445 cm)	C08: 0.01 lbs/ft (0.018 kg/m) C11: 0.019 lbs/ft (0.028 kg/m) C12: 0.02 lbs/ft (0.028 kg/m) C19: 0.04 lbs/ft (0.062 kg/m) C29: 0.09 lbs/ft (0.134 kg/m)	85 to 392° F (-65 to 200°C) Above 185°F (85°C) use "T" designation and provide temp. range

Cable Construction

Inner Conductor	Dielectric	Outer Conductor	Standard Finish
Solid Ag-plated Cu	PTFE Tape	Ag-plated Cu Strip/ Ag-plated Cu Flat Braid	FEP

Available Connectors

C08: 1.85 mm
 C11: 1.85 mm, 2.4 mm, 2.9 mm, 3.5 mm, SMA
 C12: 1.85 mm, 2.4 mm, 2.92 mm, 3.5 mm, SMA, TNC, Type N
 C19: 3.5 mm, BNC, SMA, TNC, Type N
 C29: 7-16 DIN, SMA, TNC, Type N
 (maximum frequency dependent on cable)
 Other connectors available upon request



MEGAPHASE PHASE3™ SERIES CABLES TO 67 GHz

Specifications

Frequency		C08 Series		C11 Series		C12 Series		C19 Series		VSWR	Conn. Loss dB
GHz	Band	Attenuation		Attenuation		Attenuation		Attenuation			
GHz	Band	dB/ft	dB/m	dB/ft	dB/m	dB/ft	dB/m	dB/ft	dB/m		
0.3	UHF	0.107	0.352	0.074	0.242	0.060	0.196	0.034	0.119	1.10	0.006
0.5		0.139	0.457	0.095	0.313	0.077	0.254	0.047	0.154		0.009
0.8		0.178	0.584	0.121	0.396	0.098	0.323	0.060	0.196		0.012
1.0	L	0.200	0.656	0.135	0.443	0.110	0.362	0.067	0.220		0.014
2.0	S	0.288	0.946	0.192	0.629	0.158	0.518	0.096	0.315	1.15	0.024
2.4		0.318	1.043	0.210	0.690	0.174	0.570	0.105	0.346		0.027
3.0		0.359	1.176	0.235	0.772	0.195	0.640	0.119	0.389		0.032
4.0	C	0.419	1.375	0.272	0.893	0.227	0.745	0.138	0.453		0.040
6.0		0.524	1.719	0.335	1.098	0.281	0.923	0.171	0.562	0.055	
8.0	X	0.615	2.018	0.388	1.272	0.328	1.077	0.200	0.656	1.20	0.070
10.0		0.698	2.290	0.434	1.425	0.370	1.215	0.226	0.740	1.25	0.084
12.4		0.789	2.290	0.485	1.592	0.416	1.366	0.254	0.832	1.30	0.101
15.0	Ku	0.881	2.589	0.535	1.755	0.462	1.516	0.282	0.924		0.118
18.0		0.980	2.891	0.588	1.928	0.511	1.677	0.312	1.023	0.139	
20.0	K	1.043	3.422	0.620	2.036	0.542	1.778	0.331	1.085	1.35	0.152
22.0		1.104	3.621	0.652	2.138	0.571	1.875	0.349	1.145		0.165
24.0		1.163	3.814	0.682	2.237	0.600	1.969	0.366	1.202	0.178	
26.5		1.234	4.048	0.718	2.355	0.635	2.082	0.388	1.272	0.194	
28.0	Ka	1.276	4.185	0.739	2.423	0.655	2.148	-	-	1.40	0.204
30.0		1.330	4.364	0.766	2.512	0.681	2.233	-	-		0.217
32.0		1.383	4.539	0.792	2.598	0.706	2.317	-	-	0.230	
34.0	V	1.436	4.711	0.817	2.681	0.731	2.398	-	-	1.45	0.243
36.0		1.487	4.879	0.842	2.762	0.755	2.478	-	-		0.256
40.0		1.587	5.207	0.890	2.919	0.803	2.633	-	-	1.50	0.281
45.0	1.708	5.604	0.946	3.104	-	-	-	-	0.313		
50.0	V	1.825	5.988	1.000	3.281	-	-	-	-	1.55	0.344
60.0		2.049	6.722	-	-	-	-	-	-		0.406
67.0		2.200	7.218	-	-	-	-	-	-	1.60	0.450

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

Attenuation at any frequency =

C08: $(0.19043 \times \sqrt{\text{freqGHz}}) + (0.00957 \times \text{freqGHz})$;

C12: $(0.1073 \times \sqrt{\text{freqGHz}}) + (0.0031 \times \text{freqGHz})$;

C19: $(0.065 \times \sqrt{\text{freqGHz}}) + (0.002 \times \text{freqGHz})$



MEGAPHASE PHASE3™ SERIES CABLES TO 67 GHZ

Specifications (continued)

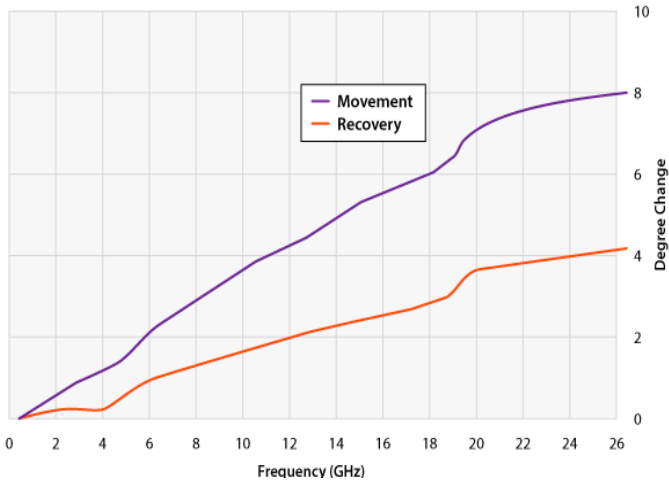
Frequency		C29 Series		VSWR	Conn. Loss dB
GHz	Band	Attenuation			
		dB/ft	dB/m		
0.3	UHF	0.029	0.095	1.10	0.006
0.5		0.038	0.124		0.009
0.8		0.048	0.157		0.012
1.0	L	0.054	0.177		0.014
2.0	S	0.077	0.253	1.15	0.024
2.4		0.085	0.279		0.027
3.0		0.096	0.314		0.032
4.0	C	0.111	0.365	1.20	0.040
6.0		0.138	0.454		0.055
8.0	X	0.162	0.531	1.25	0.070
10.0		0.183	0.600		0.084
12.4		0.206	0.676		0.101
15.0	Ku	0.229	0.752	1.30	0.118
18.0		0.254	0.833	1.35	0.139

Note: Typical Insertion Loss dB = (Attenuation)(Length) + 2(Conn. Loss)
 Attenuation at any frequency = C29: (0.052 x √freqGHz) + (0.00185 x freqGHz)

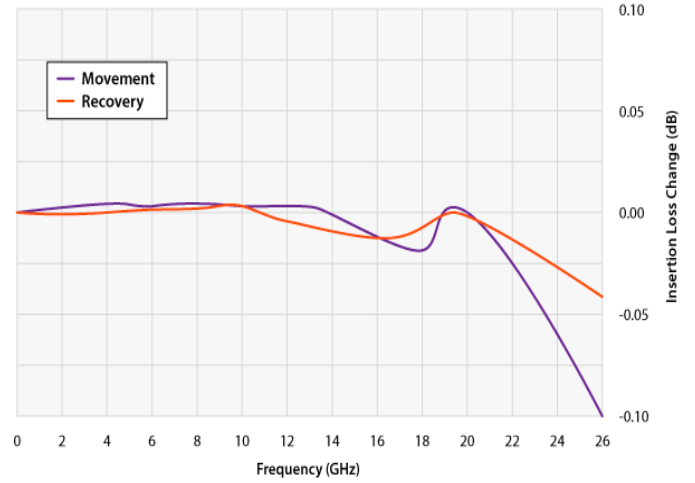


MEGAPHASE PHASE3™ SERIES CABLES TO 67 GHz

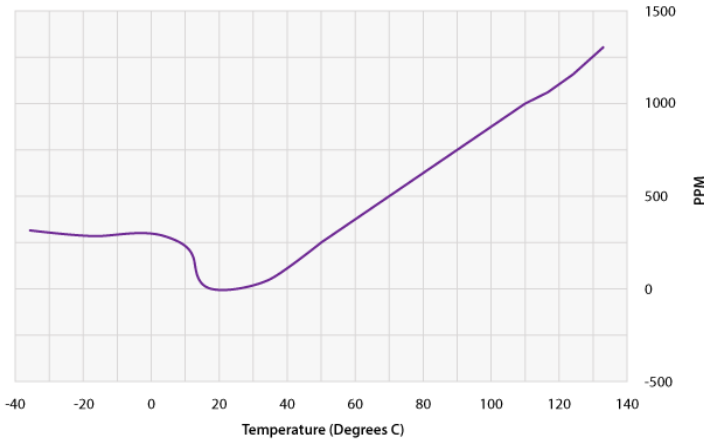
Phase Change vs. Flexure



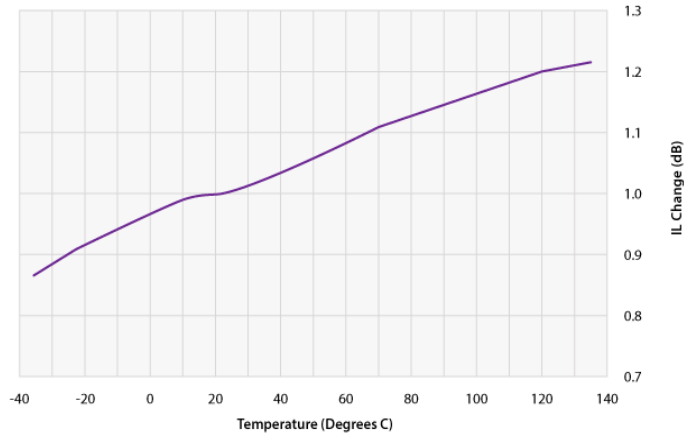
Insertion Loss vs. Flexure



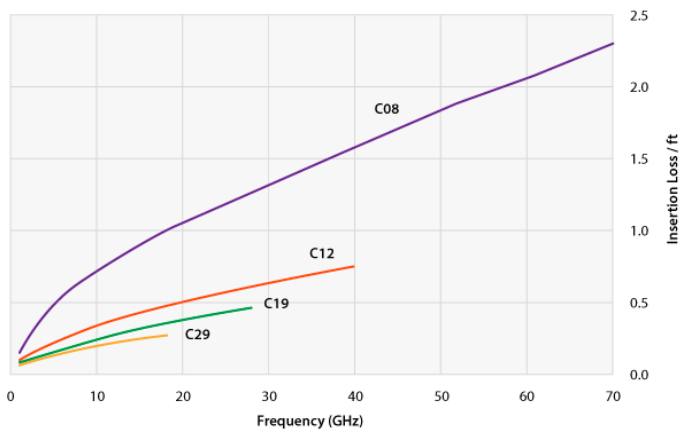
Phase Change vs. Temperature



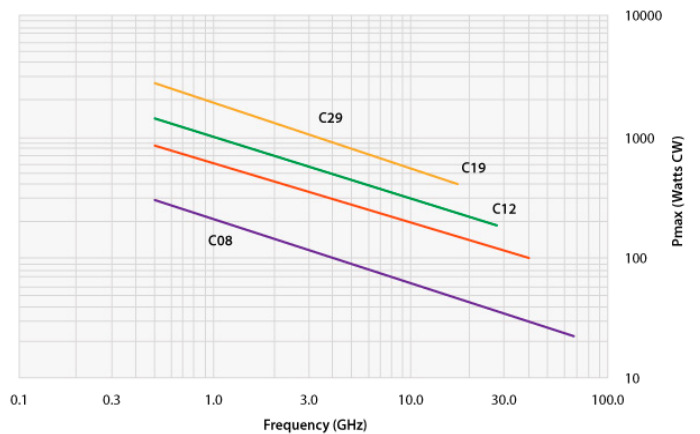
Insertion Loss vs. Temperature



Insertion Loss



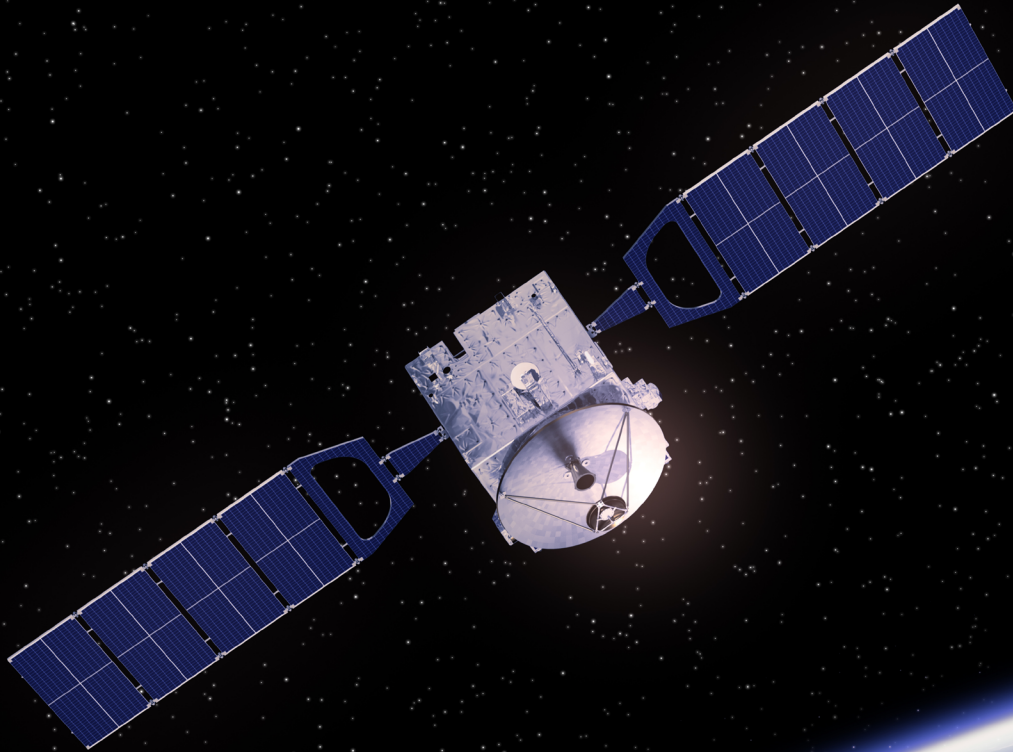
Cable CW Power Handling





MegaPhase[®]

With the right connection anything is possible



Visit us at megaphase.com

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

122 Banner Road, Stroudsburg, PA 18360-6433 | Tel: 570-424-8400 | Solutions@MegaPhase.com