

NEXTPHASE™ MEGAPHASE NEXTPHASE™ CABLES TO 40 GHz



NextPhase™ Cables to 40 GHz

General-Purpose Low-Loss Performance

- Low-loss, low-VSWR cable assemblies with excellent shielding effectiveness for reliable RF interconnects
- Triple-shielded construction with durable FEP jacketing provides dependable performance in demanding environments
- Available in a wide range of diameters and connector options to support ATE, electronic warfare, and general-purpose RF applications

Electrical Data

Maximum Frequency	Impedance	Propagation Velocity	Time Delay
912 & 916: 40.0 GHz 919: 24.0 GHz 930: 18.0 GHz 945: 12.0 GHz	50 Ω nominal	912: 75.5% nominal 916: 76.0% nominal 919: 76.5% nominal 930: 77.0% nominal 945: 78.0% nominal	912: 1.35 ns/ft (4.43 ns/m) 916: 1.34 ns/ft (4.40 ns/m) 919: 1.33 ns/ft (4.36 ns/m) 930: 1.32 ns/ft (4.33 ns/m) 945: 1.31 ns/ft (4.30 ns/m)
Shielding Effectiveness	Dielectric Withstanding Voltage	Capacitance	
-90 dB minimum (cable only)	912: 5.0 kV at 60 Hz 916: 7.0 kV at 60 Hz 919: 10.0 kV at 60 Hz 930: 15.0 kV at 60 Hz 945: 20.0 kV at 60 Hz	912 & 919: 26.7 pF/ft (87.6 pF/m) 916: 26.9 pF/ft (88.3 pF/m) 930: 26.2 pF/ft (86.0 pF/m) 945: 26.0 pF/ft (85.2 pF/m)	

Mechanical Data

Finished Outer Diameter	Static Bend Radius	Weight with Standard Jacket/Armor	Operating Temp. Range
912: 0.126 in (0.320 cm) 916: 0.160 in (0.406 cm) 919: 0.205 in (0.521 cm) 930: 0.305 in (0.775 cm) 945: 0.450 in (11.43 cm)	912: 0.6 in (1.524 cm) 916: 0.9 in (2.286 cm) 919: 1.1 in (2.794 cm) 930: 1.8 in (4.572 cm) 945: 2.5 in (6.350 cm)	912: 0.02 lbs/ft (0.030 kg/m) 916: 0.04 lbs/ft (0.060 kg/m) 919: 0.05 lbs/ft (0.074 kg/m) 930: 0.09 lbs/ft (0.134 kg/m) 945: 0.20 lbs/ft (0.30 kg/m)	Operating Temp. Range: -85 to 392°F (-65 to 200°C) Above 185°F (85°C) use "T" designation and provide temperature range

Cable Construction

Inner Conductor	Dielectric	Outer Conductor	Standard Finish
Solid Ag-plated Cu, 945 stranded Solid Ag-plated Cu	PTFE Tape	Ag-plated Cu Flat Braid/ Polyamide Foil/Ag-plated Cu Round Braid	FEP (a wide variety of other protective finishes and armors available)

Available Connectors

912: 2.4mm, 2.92mm, 3.5mm, SMA, TNC, Type N
 916: 1.85 mm, 2.4 mm, 2.9mm, 3.5mm, SMA, TNC, Type N
 919: 3.5mm, BNC, SMA, TNC, Type N
 930: 7-16 DIN, SMA, TNC, Type N
 945: TNC, Type N
 (maximum frequency dependent on cable)
 Other connectors available upon request



MEGAPHASE NEXTPHASE™ SERIES CABLES TO 40 GHZ

Specifications

Frequency		912 Series			916 Series			919 Series			Conn. Loss dB
		Attenuation			Attenuation			Attenuation			
GHz	Band	dB/ft	dB/m	VSWR	dB/ft	dB/m	VSWR	dB/ft	dB/m	VSWR	
0.3	UHF	0.092	0.302	1.10	0.065	0.212	1.10	0.044	0.145	1.10	0.006
0.5		0.119	0.391		0.084	0.275		0.057	0.188		0.009
0.8		0.152	0.497		0.107	0.351		0.073	0.240		0.012
1.0	L	0.170	0.558		0.120	0.394		0.082	0.269		0.014
2.0	S	0.243	0.798	1.15	0.173	0.566	1.15	0.118	0.387	1.20	0.024
2.4		0.267	0.877		0.190	0.623		0.130	0.426		0.027
3.0		0.300	0.985		0.214	0.702		0.146	0.479		0.032
4.0	C	0.349	1.146	1.20	0.250	0.819		0.170	0.559	1.25	0.040
6.0		0.433	1.420		0.311	1.020		0.212	0.696		0.055
8.0	X	0.505	1.656	1.25	0.364	1.195	1.20	0.281	0.815		0.070
10.0		0.569	1.867	1.30	0.412	1.352	1.25	0.248	0.922	1.30	0.084
12.4		0.639	2.098	1.35	0.465	1.526		0.317	1.040		0.101
15.0	Ku	0.710	2.328		0.518	1.699	1.35	0.353	1.158	1.35	0.118
18.0		0.785	2.574		0.575	1.886		0.392	1.285		0.139
20.0	K	0.832	2.729	0.611	2.004	0.416		1.365	1.45	0.152	
22.0		0.877	2.877	0.646	2.118	0.440		1.442		0.165	
24.0		0.921	3.021	0.679	2.228	0.462	1.517	0.178			
26.5	Ka	0.973	3.193	1.40	0.720	2.362	1.40	-	-	-	0.194
28.0		1.004	3.294		0.744	2.439		-	-	-	0.204
30.0		1.044	3.425		0.774	2.541		-	-	-	0.217
32.0		1.083	3.553	0.805	2.640	-		-	-	0.230	
34.0		1.121	3.677	1.45	0.834	2.737	1.40	-	-	-	0.243
36.0		1.158	3.799		0.863	2.833		-	-	-	0.256
40.0	1.230	4.036	0.920		3.018	1.45		-	-	-	0.281

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

Attenuation at any frequency = 912: $(0.1654 \times \sqrt{\text{freq GHz}}) + (0.0046 \times \text{freq GHz})$

916: $(0.11522 \times \sqrt{\text{freq GHz}}) + (0.00478 \times \text{freq GHz})$

919: $(0.07882 \times \sqrt{\text{freq GHz}}) + (0.00318 \times \text{freq GHz})$

930: $(0.05621 \times \sqrt{\text{freq GHz}}) + (0.00175 \times \text{freq GHz})$



MEGAPHASE NEXTPHASE™ SERIES CABLES TO 40 GHZ – CONTINUED

Specifications

Frequency		930 Series			945 Series			Conn. Loss dB
		Attenuation			Attenuation			
GHz	Band	dB/ft	dB/m	VSWR	dB/ft	dB/m	VSWR	
0.3	UHF	0.031	0.103	1.10	0.020	0.066	1.10	0.006
0.5		0.041	0.133		0.026	0.085		0.009
0.8		0.052	0.170		0.034	0.122		0.012
1.0	L	0.058	0.190		0.038	0.125		0.014
2.0	S	0.083	0.272	1.15	0.056	0.184	1.15	0.024
2.4		0.091	0.299		0.062	0.203		0.027
3.0		0.103	0.337		0.070	0.230		0.032
4.0	C	0.119	0.391	1.20	0.083	0.272	1.20	0.040
6.0		0.148	0.486		0.106	0.348		0.055
8.0	X	0.173	0.568		0.126	0.413		0.070
10.0		0.195	0.641	1.25	0.147	0.482	1.25	0.084
12.4		0.220	0.721	1.30	0.166	0.545	1.30	0.101
15.0	Ku	0.244	0.800		-	-	-	0.118
18.0		0.270	0.886	1.35	-	-	-	0.139

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

Attenuation at any frequency = 912: $(0.1654 \times \sqrt{\text{freq GHz}}) + (0.0046 \times \text{freq GHz})$

916: $(0.11522 \times \sqrt{\text{freq GHz}}) + (0.00478 \times \text{freq GHz})$

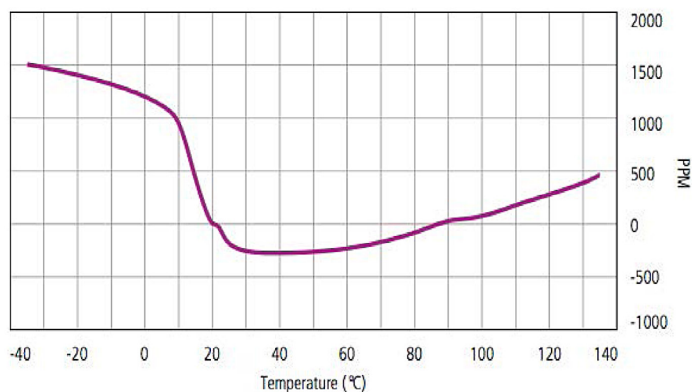
919: $(0.07882 \times \sqrt{\text{freq GHz}}) + (0.00318 \times \text{freq GHz})$

930: $(0.05621 \times \sqrt{\text{freq GHz}}) + (0.00175 \times \text{freq GHz})$

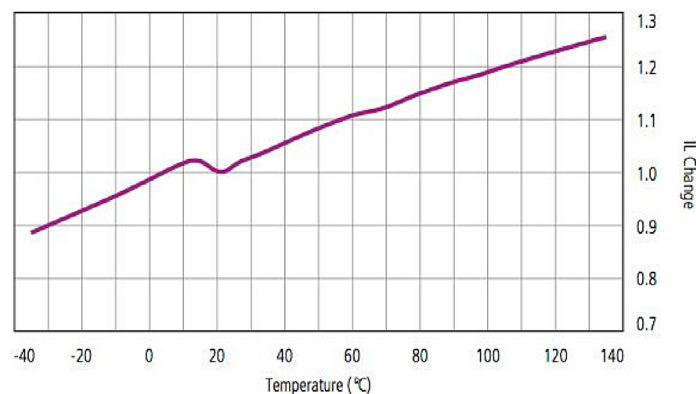


MEGAPHASE NEXTPHASE™ SERIES CABLES TO 40 GHZ

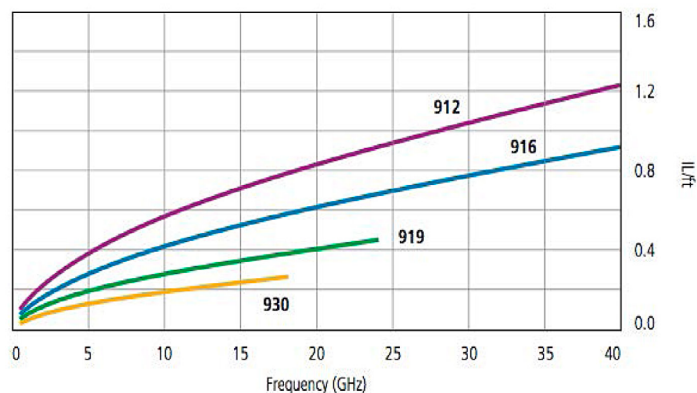
Phase Change vs. Temperature



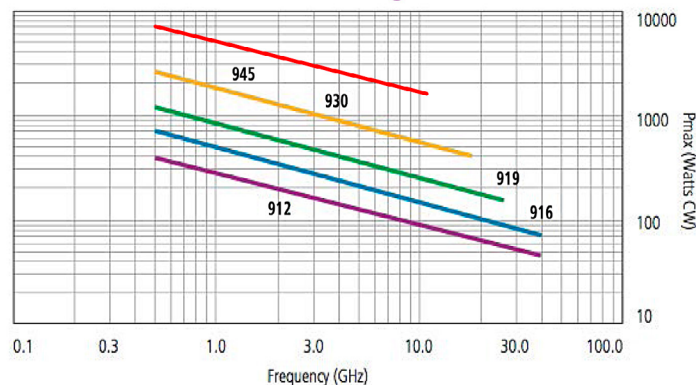
Insertion Loss vs. Temperature



Insertion Loss



Cable CW Power Handling



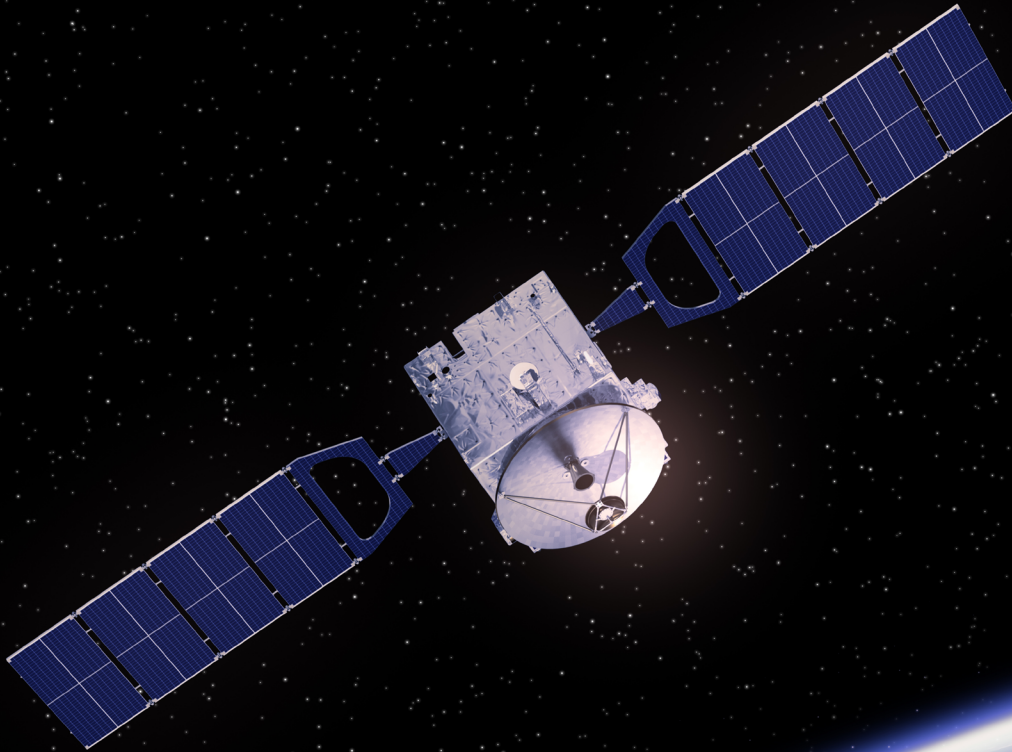
Note: Data at ambient temperature and sea level. Power handling of a cable assembly is also connector dependent and includes variables such as altitude, temperature and system VSWR. See website for connector power handling standards, including altitude, temperature and VSWR derating.





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