



NEXT PHASE[™] NextPhase[™] Cables to 40 GHz



General Purpose Low Loss

- Low Loss
- Low VSWR
- Excellent Shielding Effectiveness
- Triple Shielded
- FEP Jacket
- Wide Variety of Connectors

The NextPhase[™] low loss cable line is designed for general purpose interconnects demanding low loss and triple shielding. Applications include ATE, ground- and air-based EW, and many others where reasonable cost and long lengths are required. A wide variety of diameters are available to accommodate a wide range of design requirements in terms of bend radii, weight and power performance. A wide variety of connectors are available.

Electrical Data

Maximum Frequency:

912 & 916: 40.0 GHz
919: 24.0 GHz
930: 18.0 GHz
945: 12.0 GHz

Impedance:

50 Ω nominal

Propagation Velocity:

912: 75.5% nominal
916: 76.0% nominal
919: 76.5% nominal
930: 77.0% nominal
945: 78.0% nominal

Time Delay:

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:

-90 dB minimum (cable only)

Dielectric Withstanding Voltage:

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

Capacitance:

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:

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 (1.143 cm)

Static Bend Radius:

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)

Weight with Standard Jacket/Armor:

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.



NextPhase™ Cables to 40 GHz (continued)

Cable Construction

Inner Conductor: Solid Ag-plated Cu, 945 stranded Solid Ag-plated Cu
 Dielectric: PTFE Tape
 Outer Conductor: Ag-plated Cu Flat Braid/
 Polyamide Foil/Ag-plated Cu Round Braid
 Standard Finish: 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)

Specifications

Frequency		912 Series			916 Series			919 Series			930 Series			945 Series			Conn. Loss dB	
GHz	Band	Attenuation		VSWR	Attenuation		VSWR	Attenuation		VSWR	Attenuation		VSWR	Attenuation		VSWR		
		dB/m	dB/m		dB/ft	dB/m		dB/ft	dB/m		dB/ft	dB/m		dB/ft	dB/m			
0.3	UHF	0.092	0.302	1.10	0.065	0.212	1.10	0.044	0.145	1.10	0.031	0.103	1.10	0.020	0.066	1.10	0.006	
0.5		0.119	0.391		0.084	0.275		0.057	0.188		0.041	0.133		0.026	0.085		0.009	
0.8		0.152	0.497		0.107	0.351		0.073	0.240		0.052	0.170		0.034	0.122		0.012	
1.0	L	0.170	0.558		0.120	0.394		0.082	0.269		0.058	0.190		0.038	0.125		0.014	
2.0	S	0.243	0.798	1.15	0.173	0.566	1.15	0.118	0.387	1.20	0.083	0.272	1.15	0.056	0.184	1.15	0.024	
2.4		0.267	0.877		0.190	0.623		0.130	0.426		0.091	0.299		0.062	0.203		0.027	
3.0		0.300	0.985		0.214	0.702		0.146	0.479		0.103	0.337		0.070	0.230		0.032	
4.0	C	0.349	1.146	1.20	0.250	0.819	1.25	0.170	0.559	1.25	0.119	0.391	1.20	0.083	0.272	1.20	0.040	
6.0		0.433	1.420		0.311	1.020		0.212	0.696		0.148	0.486		0.106	0.348		0.055	
8.0	X	0.505	1.656	1.25	0.364	1.195	1.20	0.281	0.815		0.173	0.568		0.126	0.413		0.070	
10.0		0.569	1.867	1.30	0.412	1.352		0.248	0.922		0.195	0.641	1.25	0.147	0.482	1.25	0.084	
12.4	Ku	0.639	2.098	1.35	0.465	1.526	1.25	0.317	1.040	1.30	0.220	0.721	1.30	0.166	0.545	1.30	0.101	
15.0		0.710	2.328		0.518	1.699		0.353	1.158		0.244	0.800						0.118
18.0		0.785	2.574		0.575	1.886		0.392	1.285		0.270	0.886		1.35				
20.0	K	0.832	2.729	1.35	0.611	2.004	1.35	0.416	1.365	1.35							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		1.45						0.178	
26.5	Ka	0.973	3.193	1.40	0.720	2.362	1.35	-	-	1.45							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	Ka	1.083	3.553	1.45	0.805	2.640	1.40	-	-	1.45							0.230	
34.0		1.121	3.677		0.834	2.737		-	-						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	

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

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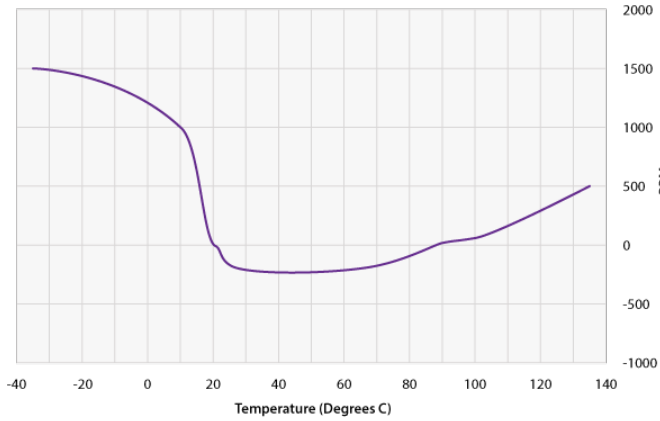
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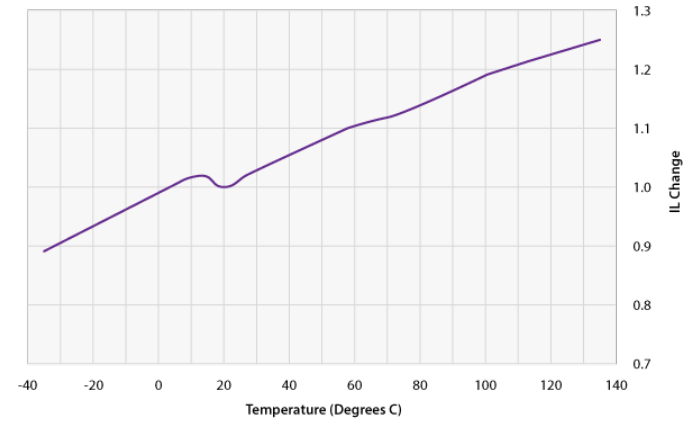


NextPhase™ Cables to 40 GHz (continued)

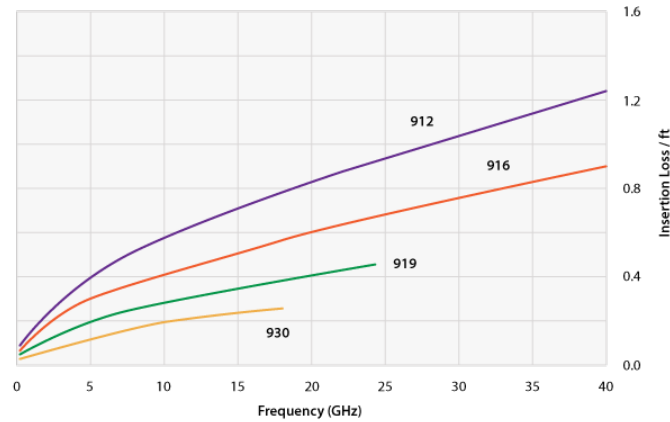
Phase Change vs. Temperature



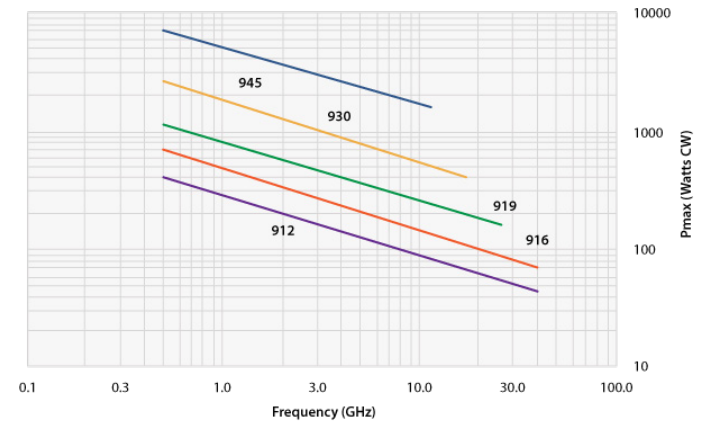
Insertion Loss vs. Temperature



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.