PhaseTrack® Low Smoke

TIMES MICROWAVE SYSTEMS
AN AMPHENOL COMPANY

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Shipboard Applications

Shipboard systems like radars, anti-missile defense, communications and many others rely on continuous transmission of RF Signals with accuracy and consistent speeds regardless of variations in temperature.

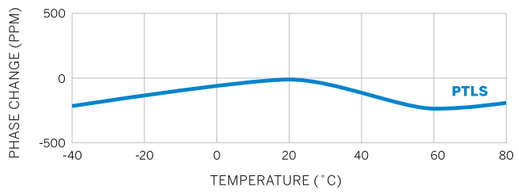
In these systems, phase stability across temperature is key and the phase tracking characteristics of coaxial assemblies can greatly affect performance.

The PhaseTrack® Low Smoke, PTLS, microwave assemblies are available in six sizes, from 0.2 to 0.6 inches, the assemblies meet HF through K band frequency requirements, including an optimized version for minimum loss in Ku band. They are supplied as a complete factory-tested assembly to assure minimal loss and optimal performance.

Phase Stability Requirements

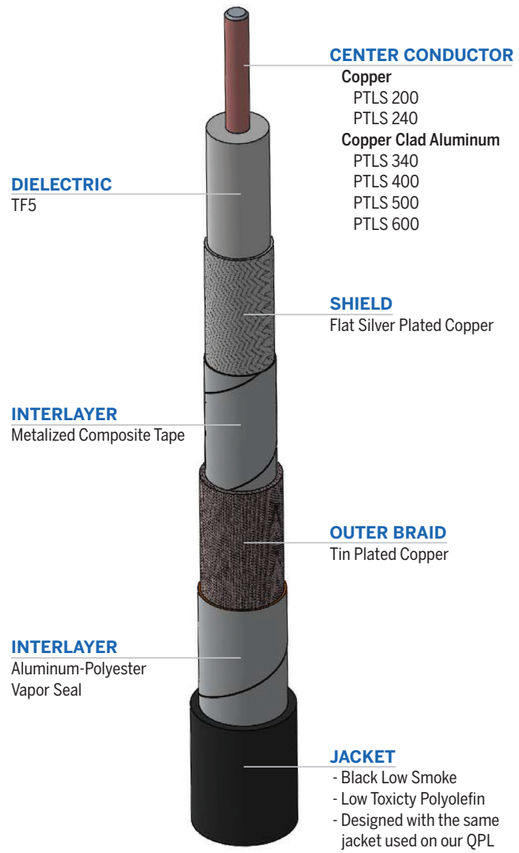
The PTLS microwave cables features a proprietary foam polyethylene blended dielectric called TF5™. This material provides exceptional phase temperature performance.

Phase Change vs Temperature



Low-Smoke Zero-Halogen

Low-smoke, zero-halogen cable assemblies are essential in confined spaces such as ships and submarines. In case of fire, a low-smoke cable emits a less optically dense smoke. Halogen-free materials also produce clearer, whiter smoke for better visibility and do not emit toxic off-gases.



The PTLS assemblies are highly customizable and are available with a variety of industry standard RF interfaces, or custom connectors.

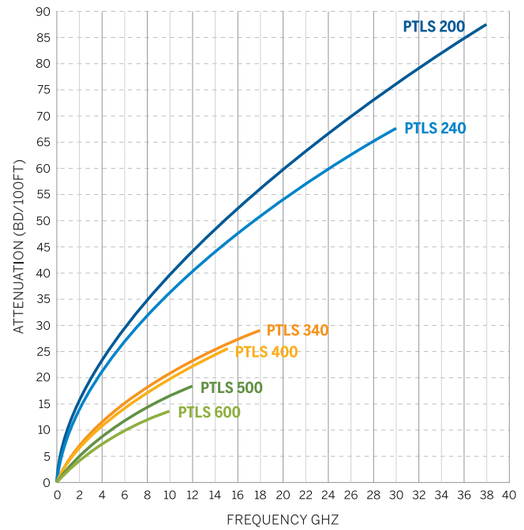
Specifications

Impedance 50 Ohms

Op Temp -40 to 185°F -40 to 85°C

SIZE	Max Operating Frequency GHz	Overall Diameter in (mm)	Minimum Bend Radius in (mm)	Weight lb/1000ft (kg/1000m)	Velocity of Propagation %	Delay ns/ft (ns/m)	Shielding dB	Capacitance pF/ft (pF/m)
PTLS 200	38	0.20 (5.08)	0.50 (12.7)	33.6 (15.3)	84	1.21 (3.97)	-90	24.2 (79.4)
PTLS 240	30	0.25 (6.22)	0.75 (19.1)	46.2 (21.0)	84	1.21 (3.97)	-90	24.2 (79.4)
PTLS 340	18	0.35 (8.76)	0.88 (22.2)	67.5 (30.66)	85	1.20 (3.94)	-90	23.9 (78.4)
PTLS 400	15	0.40 (10.29)	1.00 (25.40)	97.4 (44.18)	85	1.20 (3.94)	-90	23.9 (78.4)
PTLS 500	12	0.50 (12.83)	1.00 (25.40)	135.0 (61.25)	86	1.18 (3.87)	90	23.6 (77.4)
PTLS 600	10	0.59 (14.99)	1.50 (38.10)	177.0 (80.3)	86	1.18 (3.87)	-90	23.6 (77.4)

Typical Attenuation vs Frequency



Attenuation

$$IL = (K1 \times \sqrt{(f)} + K2 \times f) \times \text{Cable Length} \times 100$$

f= Frequency in MHz
K value must match the unit length

UNIT	dB/100ft (dB/100m)	
	K1	K2
PTLS 200	0.333683 (1.094761)	0.000522 (0.001713)
PTLS 240	0.290464 (0.952966)	0.000522 (0.001713)
PTLS 340	0.144844 (0.475210)	0.000478 (0.001568)
PTLS 400	0.086137 (0.282602)	0.000437 (0.001243)
PTLS 500	0.114985 (0.377247)	0.000437 (0.001434)
PTLS 600	0.086137 (0.282602)	0.000437 (0.001243)

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