

Low Loss Cable Assemblies

Aptiv's Low Loss Cable Assemblies provide the highest signal integrity with the lowest attenuation possible for maximum distance and improved performance. Constructed with the latest low-loss dielectrics (Expanded PTFE, DynaCore®) and tailored shielding, these fully tested assemblies provide the best signal to noise ratio and reliable performance. Our DynaFlex®, DynaTest®, and PhaseTite® Series are industry leading in the most demanding RF and microwave applications.



KEY FEATURES & BENEFITS

- Low Loss Performance: Minimizes attenuation for stronger signals and greater efficiency.
- Superior Electrical Characteristics: Low VSWR, wide frequency range, and excellent shielding.
- Phase Stable: Reliable performance over temperature changes and flexure.
- Factory-Tested & Ready to Use: 100% RF tested for guaranteed quality.
- High Reliability: Built with premium materials and precision manufacturing.
- Flexible Design Options: Multiple cable types, diameters, and connector configurations.
- Ruggedized Solutions: Durable jacketing and strain relief for harsh environments.

PRODUCT SPECIFICATIONS

Electrical Properties*	
Impedance	50 Ohms
Frequency Range	DC to 18 GHz, 26.5 GHz, 40 GHz, or 110 GHz.
VSWR (Voltage Standing Wave Ratio)	Typical: ≤ 1.25 @ 50 GHz (performance may vary by design; reference datasheet).
Insertion Loss	Lower than standard coaxial assemblies; achieved via larger conductors, superior dielectrics (e.g., expanded PTFE, DynaCore®), and advanced shielding.
Velocity of Propagation (VP)	High (76-84%) due to low-dielectric materials (e.g., DynaCore® PTFE).
Shielding Effectiveness	Very high (>100 dB), preventing signal radiation and external interference
Power Handling	Higher than standard cables of similar size due to efficient heat dissipation.
Phase Stability	For phase-stable versions, low ppm/°C over temperature (e.g., ± 50 ppm/°C) and minimal phase change with flexure (e.g., $\pm 2^\circ$ at 18 GHz for 360° bend).

*reference website for specific part number specifications

PRODUCT SPECIFICATIONS CONTD.

Environmental Properties*	
Temperature Range	Wide operating range (e.g., -40°C or -65°C up to +85°C, +125°C, or +165°C).
Thermal Shock	Resistant to rapid temperature changes.
Vibration & Shock	Withstands significant levels (e.g., MIL-STD-202 compliant).
Moisture Resistance	Robust jackets and sealed connectors; some offer IP-rated water immersion.
UV Resistance	Outer jackets often UV-stabilized for outdoor use.
Chemical Resistance	Jacket materials resistant to oils, fuels, solvents.
Space Qualification	Specific assemblies meet low outgassing and radiation tolerance requirements.

*reference website for specific part number specifications

PRODUCT SPECIFICATIONS CONTD.

Mechanical Properties*	
Cable Construction	Optimized conductors, advanced dielectrics (e.g., expanded/foamed PTFE, low-density PTFE, DynaCore®), and multi-layered shielding.
Outer Diameter	Range of sizes (e.g., ~0.086" to ~0.400" for flexible types).
Connectors	High-performance RF connectors (e.g., SMA, 2.92mm, N) attached via crimp, solder, or clamp; often stainless steel.
Length Tolerance	Precise custom lengths with tight tolerances (e.g., ± 0.060 ").
Minimum Bend Radius	Specified for flexible options (e.g., 0.5" to 1.5").
Flex Life	High flex cycles for flexible types (e.g., >500,000 cycles).
Jacket Options	Various materials (e.g., FEP, ETFE, PUR) for protection; some offer ruggedized sleeves.

*reference website for specific part number specifications