TIMES MICROWAVE SYSTEMS
AN AMPHENOL COMPANY

sign of the times

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Radar powered systems count on reliability and stability to achieve any number of mission-critical tasks: from helping planes land safely and not collide in mid-air to ensuring autonomous driving systems get passengers to where they want to go. With such critical tasks at hand, it is essential that modern radar systems feed reliable, consistent signals between phased-array antennas and the electronic devices that receive them.

Learn More About How Cables for Radar Systems

Selecting a Cable for Radar Systems

Many radar systems are in extreme and highly variable environmental conditions; RF signals must travel through the coaxial cables at consistent speeds regardless of

these environmental factors. Factors to consider when selecting coaxial cables for radar applications include:

- **Frequency Range:** Choose a coaxial cable that supports the frequency range required by the application with the least amount of loss.
- **Phase:** Phase matching, tracking, and stability are all crucial, especially for space-based radar applications.
- **Sensitivity:** The ability to detect weak signals, such as those from stealthy or distant targets, is crucial, especially in applications such as military radar.
- **Power Handling:** Ensure that the cable can handle the power levels required. High-power systems may require low-loss cables with better temperature handling capabilities.
- **Loss:** Low-loss coaxial cables help maintain signal strength and system accuracy.
- **Environmental Factors:** Coaxial cables must operate reliably even when radars endure demanding environmental conditions such as adverse weather, harsh environments, or radiation.
- **Signal Range:** Coaxial cables that minimize signal loss over long distances are crucial for radar systems that must detect targets at extended ranges.

Popular Cables and Connectors for Radar

- -40 to +85 °C
- Aluminum tape outer conductor
- Easy to use tooling

- Rodent repellent option available

LMR®

- Sizes ranging from 0.110” to an 18 GHz 0.318”
- Proprietary fluorocarbon dielectric, TF4®
- Stable phase over temperature

PhaseTrack®

- -55 to +150 °C
- FEP jacket
- Designed for higher frequency applications (up to 18 GHz)

MaxGain®

- 20 GHz operating frequency
- Hermetically sealed connector housing and contacts
- Multiport and Mini-Multiport options available

Multiport Connectors

Learn More about Radar Systems

Product Spotlight

Our standard LMR® is the industry standard in high-performance broadband, flexible, low-loss 50 Ohm coaxial cables. Features include 100% effective shielding; available as pre-terminated assemblies; and rugged UV, sunlight and weather resistance.

Recent Video

Check out some of the latest comments on one of our videos!

Watch the Video

Recent Article Features

Expanding the horizons of RF connector designs for harsh military environments

Meeting the RF Challenge of Smallsat Development in the Commercial Space Industry

More Articles

Upcoming Tradeshows

Space Tech - Europe

Bremen, Germany

November 14 -16

Schedule a meeting with us!

Q: What is the maximum run length for LMR-400?

A: The answer varies depending on the loss budget of the system. Most systems try to limit the loss of cable runs to no more than -9dB. The frequency will be key to determining the max length of the run. We would not recommend using the LMR-400 above 8 GHz.

Got a question you'd like answered in the next newsletter? Submit it here!

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