How to choose RF cable for Military Ground Vehicles.

From **Times Microwave Systems**

The selection of appropriate coaxial cables for military vehicles depends on the specific application, frequency range, power handling capability, and environmental conditions. Military-grade coaxial cables should meet stringent durability, reliability, and performance requirements. Some critical factors to consider when selecting coaxial cables for military vehicles include:

• **Frequency range**: Choose a coaxial cable that supports the frequency range required by the communication or radar systems used in the vehicle. For example, if the system operates in the VHF and UHF bands, select a cable that can handle these frequencies with minimal signal loss.

• **Power handling**: Ensure the cable can handle the power levels required by the vehicle's communication or radar systems. High-power systems may require low-loss cables with better temperature handling capabilities.

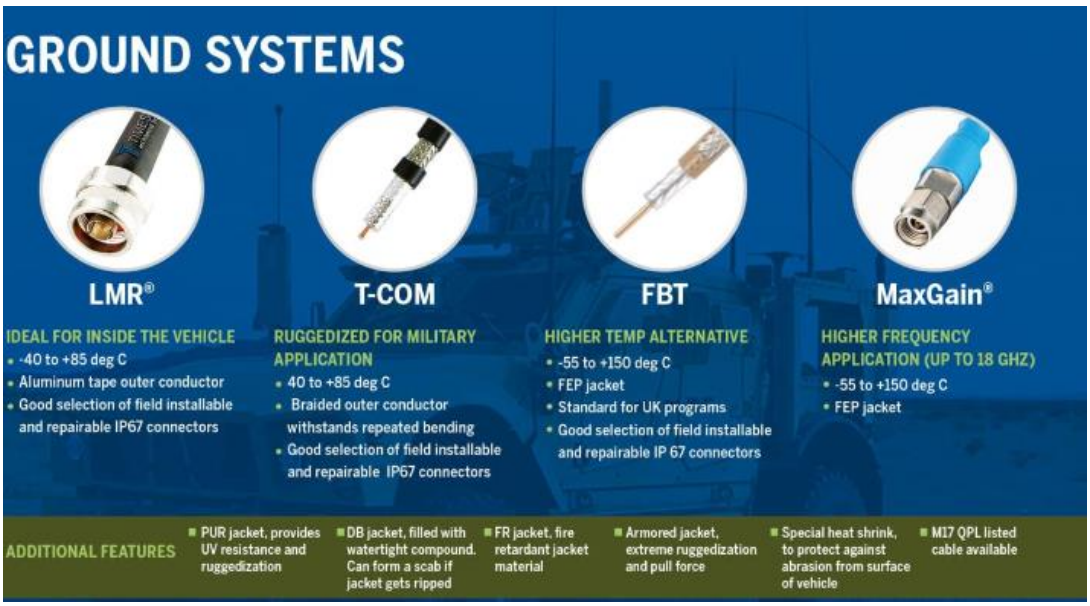
• **Temperature**: Ensure the cable can handle the temperatures of the vehicle and the environment. Higher temperatures may require cables with better temperature handling performance.

• **Shielding**: Military-grade coaxial cables should provide excellent shielding to minimize signal interference and ensure reliable communication. Double or even triple-shielded cables may be necessary for applications where interference is a significant concern.

• **Mechanical strength and durability**: Cables used in military vehicles should be robust and withstand harsh environmental conditions, such as vibration, shock, extreme temperatures, and moisture. Look for cables with ruggedized construction, including high-quality materials like military-specification connectors and abrasion-resistant outer jackets. For applications frequently with bending and moving cables, consider cables designed to endure high flexure. Applications with chemical washdowns will require special jacket materials.

• **Flexibility**: Depending on the vehicle's configuration and cable routing requirements, you may need a coaxial cable with high flexibility to accommodate tight bends and complex routing paths. Stranded center conductors offer increased flexibility but poorer insertion loss performance.

• **Environmental considerations**: Common military environmental specifications to keep in mind include the type of cable jacket, IP67 or similar ratings on connectors, and if a cable needs to be rodent repellent. Other critical environmental considerations include low smoke, zero halogen cable assemblies for spaces where air exchange is minimal and specialized cable jackets for environments that might endure nuclear, biological, and chemical (NBC) contamination and require chemical washdowns.



Military Ground Vehicles

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High-Performance RF Interconnect Solutions for Military Ground Systems

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