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# RG 142 Coaxial Cable

RG 142 high-temperature coax cable is used in interconnections between telecommunications equipment and is widely used for commercial wireless applications. It also works very well in sensitive environments with minimal space such as avionic bays. Specific applications of this cable include radar, GPS and medical systems. Since it is approved for direct burial, this coaxial cable can be implemented in intricate underground connections while still holding a good shielding effectiveness.

## RG 142 Coaxial Cable Construction

| | |
|---|---|
| **Inner Cond:** | Silver-Coated Copper Clad Steel |
| **Dielectric:** | Extruded Solid Polytetrafluoroethylene |
| **Outer Conductor:** | Silver Plated Copper Braided Shield (x2) |
| **Jacket:** | Extruded Solid Fluorinated Ethylene Propylene |

## RG 142 Cable Additional Specifications

| | |
|---|---|
| **Weight:** | 43 lb/ft |
| **Bend Radius:** | 1.0" |
| **Operating Temperature:** | -55°C to +200°C |

## RG 142 Cable Electrical Specifications

| | |
|---|---|
| **Capacitance:** | 29.4 pF/ft |
| **Impedance:** | 50 +/- 2 ohms |
| **Maximum Operating Frequency:** | 8,000 MHz |
| **Maximum Operating Voltage:** | 1,900 Volts |
| **RF Shielding:** | 90 dB |
| **Velocity of Propagation:** | 69.21% |

## RG 142 Loss Attenuation Specifications and Power Handling by Frequency

| Frequency (MHz) | Attenuation (db/100ft) | Power (watts) |
|---|---|---|
| 10 | 1.2 | 5601 |
| 30 | 2.1 | 3206 |
| 50 | 2.7 | 2468 |
| 100 | 4 | 1726 |
| 400 | 8 | 831 |
| 1000 | 13 | 504 |
| 1500 | 16 | 401 |
| 2000 | 19 | 340 |
| 2500 | 21 | 298 |
| 3000 | 24 | 267 |
| 10000 | 49 | 125 |

The RG142 loss is widely accepted at HF frequencies since it is constructed with a silver plated outer conductor that prevents oxidation of the conductor which decreases loss vs time.

The RG142 has first-rate power handling capabilities due to the solid dielectric materials.

# RG 142 Coaxial Cable Mechanical Specifications

**Inner Conductor:**

| | |
|---|---|
| Material: | Copper Clad Steel |
| Plating: | Silver |
| Diameter, in: | 0.037 |

**Dielectric:**

| | |
|---|---|
| Type: | PTFE |
| Diameter, in: | 0.116 |

**Outer Conductor:**

| | |
|---|---|
| Count: | 2 (36 AWG strand) |
| Material 1: | Silver Plated Copper Braid |
| Material 2: | Silver Plated Copper Braid |
| Diameter, in: | 0.162 |

**Jacket:**

| | |
|---|---|
| Material: | FEP-IX |
| Diameter, in: | 0.195 |

## RG 142 Coaxial Cable Benefits

RG 142 meets all MIL-C-17 specifications and utilizes standard connectors, so proprietary or exotic pieces are not required to build its infrastructure. RG 142 also has good shielding effectiveness (between 40 and 60 db) and has Low Passive Intermod (PIM) degradation of signal quality which is kept to a minimum. Construction with a solid dielectric allows a high rate of crush resistance, which makes it the coax of choice for tactical operations and applications. Although RG 142 isn't the most phase stable wire, phase stability can be enhanced through preconditioning in the specific temperature ranges for your project.

## RG 142 Coaxial Cable Use in the Military

The RG 142 coaxial cable was precisely built for the United States Military in the World War II era. It has a military equivalent part number of M17/60-RG142. With this part number, the United States Military has the opportunity to use the highly reliable RG 142 in their satellites, systems, and other tactical operations and equipment. Because of the obvious importance in these cables, the military requires them to have minimum and maximum adhesion values, specific shrink back allowance, eccentricity standardizations, stress crack resistance tests, and many more specifications that add to the durability and reliability of the RG 142. All trusted manufacturers will produce the same high-quality RG 142 because of its high QPL, which demands stability and rigidity in the testing and construction of specs and authenticity.

# RG 142 Coaxial Cable CAD Drawing