

**MIL-DTL-17 50  $\Omega$  & 75  $\Omega$  RF Coaxial Cables**

# RG-142

## Double-Shielded Coaxial Cable

MIL-DTL-17 M17/60-RG142 50  $\Omega \pm 2 \Omega$  SCCS + PTFE + double silver-Cu braids + FEP (-55 to

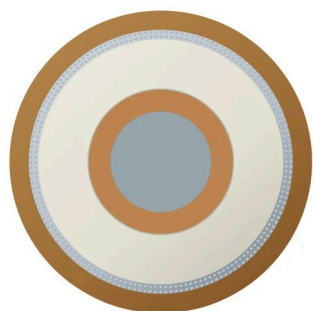
**MIL-DTL-17 · M17/60-RG142****50  $\Omega$  · DC-12.4 GHz · +200 °C****Double Silver Braid · PTFE/FEP**

### Application

RG-142 Double-Shielded Coaxial Cable (MIL-DTL-17 M17/60-RG142 / RG-142B/U) is a high-power, high-temperature (-55 °C to +200 °C) 50  $\Omega \pm 2 \Omega$  microwave coaxial cable operating from DC to 12.4 GHz, constructed with a  $\varnothing$  0.94 mm silver-plated copper-clad steel

**Typical uses:** RF power amplifiers & radar cabinets, Semiconductor 13.56 MHz plasma tools, Aerospace, defense & naval C4ISR, High-temperature RF test & burn-in

### Construction



Cross-section, not to scale

|   |                                                   |                         |
|---|---------------------------------------------------|-------------------------|
| 1 | Silver-plated copper-clad steel (SCCS)            | MIL-DTL-17 M17/60-RG142 |
| 2 | Extruded PTFE fluoropolymer dielectric            | MIL-DTL-17 Type F-1     |
| 3 | Inner silver-plated copper braid                  | MIL-DTL-17              |
| 4 | Outer silver-plated copper braid                  | MIL-DTL-17              |
| 5 | FEP fluoropolymer jacket ( $\varnothing$ 4.95 mm) | MIL-DTL-17 Type IX      |

Technical data

Typical values

|                                 |                                              |                                     |                                              |
|---------------------------------|----------------------------------------------|-------------------------------------|----------------------------------------------|
| Characteristic impedance Z0     | 50 Ω ± 2 Ω                                   | Mutual capacitance                  | 96.5 pF/m (29.4 pF/ft)                       |
| Velocity of propagation (VoP)   | 69.5 % (0.695 c) · time delay 4.79 ns/m      | Attenuation (100 / 400 / 1000       | 12.8 / 26.6 / 44.3 / 84.0 / 160.0 dB/100m    |
| Shielding effectiveness         | ≥ 90 dB (double silver-plated copper braids) | Operating / dielectric test voltage | 1,900 V RMS working · 5,000 V RMS test       |
| Operating temperature range     | -55 °C to +200 °C continuous                 | CW power rating (0.4 / 1 / 3 / 5    | 1,800 W / 1,100 W / 580 W / 390 W CW @ 40 °C |
| Nominal dimensions (Core / PTFE | 0.94 mm / 2.95 mm / 4.95 mm ± 0.13 mm        | Min. bending radius                 | 5 × D (25 mm) static · 10 × D (50 mm)        |
| Chemical & solvent immunity     | Inert to aviation fuel, Skydrol, hydraulic   | Flame & outgassing                  | UL 910 CMP / NFPA 262 · FAR 25.853           |
| Standards                       | MIL-DTL-17 / M17/60-RG142 (RG-142B/U) &      |                                     |                                              |

Sizes

4 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

| Order designation                                                         | Configuration                   | Conductor size    | Outer Ø ≈ mm | Copper kg/km | Weight ≈ kg/km | Min. bend R fixed mm |
|---------------------------------------------------------------------------|---------------------------------|-------------------|--------------|--------------|----------------|----------------------|
| Standard RG-142 configurations 4 sizes                                    |                                 |                   |              |              |                |                      |
| <input type="checkbox"/> M17/60-RG142 (RG-142B/U) Solid SCCS Double-Braid | 1×0.94 mm SCCS + PTFE + 2×AgCu  | 0.69 mm² (19 AWG) | 5.0          | 36           | 64             | 25                   |
| <input type="checkbox"/> M17/158-00001 (RG-142 Sweep-Tested 12.4 GHz)     | 1×0.94 mm SCCS (12.4 GHz Swept) | 0.69 mm² (19 AWG) | 5.0          | 36           | 64             | 25                   |
| <input type="checkbox"/> M17/128-RG400 (RG-400/U) 19×0.20 Stranded SPC    | 19×0.20 mm SPC + PTFE + 2×AgCu  | 0.60 mm² (20 AWG) | 5.0          | 38           | 63             | 25                   |
| <input type="checkbox"/> M17/111-RG303 (RG-303/U) Single-Braid PTFE/FEP   | 1×0.94 mm SCCS + PTFE + 1×AgCu  | 0.69 mm² (19 AWG) | 4.3          | 22           | 45             | 22                   |

- Outer diameters and weights are nominal factory values subject to ±5 % manufacturing tolerance per MIL-DTL-17/60-RG142 (M17/60-RG142 / M17/158-00001).

Impedance, capacitance & attenuation

4 sizes

| Configuration                   | Impedance Z0 | Max. DC R @ 20 °C Ω/km | Mutual C pF/m≈ | VoP % | Attenuation @ 20 °C dB/100m                             | Dielectric test V |
|---------------------------------|--------------|------------------------|----------------|-------|---------------------------------------------------------|-------------------|
| 1×0.94 mm SCCS + PTFE + 2×AgCu  | 50 Ω         | 63.0                   | 96.5           | 70    | 12.8 @ 100 · 44.3 @ 1000 · 84.0 @ 3000 · 160 @ 8000 MHz | 5,000             |
| 1×0.94 mm SCCS (12.4 GHz Swept) | 50 Ω         | 63.0                   | 96.5           | 70    | 12.8 @ 100 · 44.3 @ 1000 · 84.0 @ 3000 · 160 @ 8000 MHz | 5,000             |
| 19×0.20 mm SPC + PTFE + 2×AgCu  | 50 Ω         | 31.2                   | 96.5           | 70    | 14.4 @ 100 · 48.2 @ 1000 · 92.0 @ 3000 · 175 @ 8000 MHz | 5,000             |
| 1×0.94 mm SCCS + PTFE + 1×AgCu  | 50 Ω         | 63.0                   | 96.5           | 70    | 12.8 @ 100 · 44.3 @ 1000 · 84.0 @ 3000 MHz              | 5,000             |

- Transmission values (characteristic impedance Z0, mutual capacitance, VoP, and attenuation) are measured at +20 °C per MIL-DTL-17/60-RG142 (M17/60-RG142 / M17/158-00001).

## Standards and approvals

- ✓ MIL-DTL-17 / M17/60-RG142
- ✓ FAR 25.853 / UL 910
- ✓ RoHS / REACH

## Certifications



Management systems: ISO 9001, ISO 14001, ISO 45001

### Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone

+86 185 9591 3361

Email

info@tebaoflex.com

Web

[tebaoflex.com/cables/rg-142-double-shielded-coaxial-cable](https://tebaoflex.com/cables/rg-142-double-shielded-coaxial-cable)



Typical values for this cable type, based on MIL-DTL-17/60-RG142 (M17/60-RG142 / M17/158-00001). Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.