

**MIL-DTL-17 50 Ω & 75 Ω RF Coaxial Cables**

RG-178

Miniature Coaxial Cable

MIL-DTL-17 M17/93-RG178 (RG-178B/U) 50 $\Omega \pm 2 \Omega$ 7 $\times$ 0.10 mm SCCS + PTFE + FEP $\varnothing$ 1.80 mm



MIL-DTL-17 · M17/93-RG178

50 $\Omega \pm 2 \Omega$ · $\varnothing$ 1.80 mm Micro

30 AWG SCCS · PTFE/FEP +200 °C

Application

RG-178 Miniature Coaxial Cable (MIL-DTL-17 M17/93-RG178 / RG-178B/U) is an ultra-thin $\varnothing$ 1.80 mm (0.071 in) 50 $\Omega \pm 2 \Omega$ high-temperature (-55 °C to +200 °C) RF coaxial cable built with a 30 AWG (7 $\times$ 0.102 mm) stranded silver-plated copper-clad steel (SCCS)

Typical uses: RF transceiver & SDR internal jumpers, IIoT cellular, GNSS & Wi-Fi pigtails, Avionics, UAV & defense electronics, Medical diagnostic & test instrumentation

Construction



Cross-section, not to scale

1	7-strand SCCS centre conductor (30 AWG)	MIL-DTL-17 M17/93-RG178
2	Miniature extruded PTFE dielectric	MIL-DTL-17 Type F-1
3	38 AWG silver-plated copper braid	MIL-DTL-17
4	FEP fluoropolymer jacket ($\varnothing$ 1.80 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	45.9 / 91.9 / 151.0 / 275.0 dB/100m
Max. DC conductor resistance @ 20 °C	≤ 800 Ω/km (30 AWG SCCS) · Braid ≤ 46 Ω/km	Operating / dielectric test voltage	750 V RMS working (1,000 V max) · 2,000 V
Operating temperature range	-55 °C to +200 °C continuous	CW power rating (100 / 400 / 1000	240 W / 110 W / 58 W CW @ 40 °C
Nominal dimensions (Core / PTFE	0.30 mm / 0.84 mm / 1.80 mm ± 0.10 mm	Min. bending radius	5 × D (9.0 mm) static · 10 × D (18 mm)
Solder iron & reflow resistance	PTFE/FEP resists +260 °C soldering without	Flame & chemical resistance	UL 910 / VW-1 · impervious to solvents
Standards	MIL-DTL-17 / M17/93-RG178 (RG-178B/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-178 configurations 4 sizes						
☐ M17/93-RG178 (RG-178B/U) 30 AWG SCCS 50 Ω	7×0.102 mm SCCS + PTFE + AgCu	30 AWG (0.057 mm²)	1.8	4	9	9
☐ M17/169-00001 Swept 3 GHz RG-178 50 Ω	7×0.102 mm SCCS (Swept 3 GHz)	30 AWG (0.057 mm²)	1.8	4	9	9
☐ RG-178 Double-Silver-Braided (RG-178 DS) 50 Ω	7×0.102 mm SCCS + 2×AgCu Braid	30 AWG (0.057 mm²)	2.2	7	14	11
☐ M17/113-RG316 (RG-316/U) 26 AWG Step-Up 50 Ω	7×0.17 mm SCCS + PTFE (RG-316)	26 AWG (0.15 mm²)	2.5	8	18	12

- Outer diameters and weights are nominal factory values subject to ±5 % manufacturing tolerance per MIL-DTL-17/93-RG178 (M17/93-RG178 / RG-178B/U).

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
7×0.102 mm SCCS + PTFE + AgCu	50 Ω	800.0	96.5	70	45.9 @ 100 · 91.9 @ 400 · 151 @ 1000 · 275 @ 3000 MHz	2,000
7×0.102 mm SCCS (Swept 3 GHz)	50 Ω	800.0	96.5	70	45.9 @ 100 · 91.9 @ 400 · 151 @ 1000 · 275 @ 3000 MHz	2,000
7×0.102 mm SCCS + 2×AgCu Braid	50 Ω	800.0	96.5	70	45.9 @ 100 · 91.9 @ 400 · 151 @ 1000 · 275 @ 3000 MHz	2,000
7×0.17 mm SCCS + PTFE (RG-316)	50 Ω	277.0	96.5	70	26.2 @ 100 · 53.1 @ 400 · 85.6 @ 1000 · 153 @ 3000 MHz	2,000

- Transmission values (characteristic impedance Z0, mutual capacitance, VoP, and attenuation) are measured at +20 °C per MIL-DTL-17/93-RG178 (M17/93-RG178 / RG-178B/U).

Standards and approvals

- ✓ MIL-DTL-17 / M17/93-RG178
- ✓ UL VW-1 / FAR 25.853
- ✓ 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-178-miniature-coaxial-cable



Typical values for this cable type, based on MIL-DTL-17/93-RG178 (M17/93-RG178 / RG-178B/U). Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.