



industrial data rf cable series

MIL-STD-1553

78 Ohm Twinaxial Avionics Command & Telemetry Data

MIL-STD-1553B / M17/176-00002 78 $\Omega \pm 5 \Omega$ fluoropolymer twinaxial avionics data bus cable

MIL-STD-1553B / M17/176-00002

78 $\Omega \pm 5 \Omega$ @ 1 MHz · ≤ 98.4 pF/m

-55 °C to +200 °C · PFA / ETFE

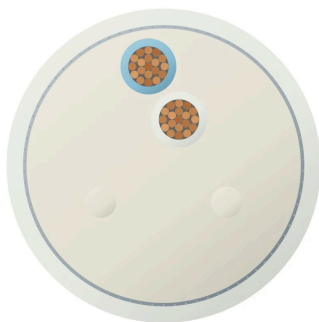


Application

78 Ω aerospace twinaxial command and telemetry data bus cable per MIL-STD-1553B and MIL-DTL-17/176 (M17/176-00002) with 1×2×24 AWG (19×36) silver-plated copper-alloy cores, blue/white PFA insulation, SPC braid, and +200 °C PFA jacket.

Typical uses: Fighter, Transport & Rotorcraft Avionics, MIL-STD-1760 Smart Weapons Pylons, Spacecraft & Launch Vehicle OBCDH Buses, Main Battle Tank & Armored Vetronics, Naval Shipboard Combat Data Buses

Construction



Cross-section, not to scale

- 1 Silver-plated high-strength copper-alloy pair
- 2 PFA or microporous ePTFE core insulation
- 3 Fluoropolymer core binder tape
- 4 Silver-plated copper wire braid shield
- 5 PFA, ETFE or LSZH outer jacket

Technical data

Typical values

Characteristic impedance	78 Ω ± 5 Ω at 1.0 MHz	Mutual capacitance	≤ 98.4 pF/m (30.0 pF/ft) max.
Capacitance unbalance	≤ 2.0 % (conductor-to-shield)	Attenuation @ 1.0 MHz	≤ 4.92 dB/100m (1.5 dB/100ft) max.
Conductor DC resistance @ 20 °C	≤ 93.5 Ω/km (24 AWG Cu-alloy) · ≤ 53.1 Ω/km (22 AWG)	Dielectric withstand voltage	1,500 V RMS (core/core) · 1,000 V RMS (core/shield)
Operating temp. (M17/176-00002)	-55 °C to +200 °C continuous (PFA)	Operating temp. (ETFE / Space)	-65 °C to +150 °C (ETFE) · -65 to +200 °C (ePTFE)
Continuous working voltage	600 V RMS max.	Conductor build	2 × 24 AWG (19×36 AWG SPC alloy) or 22 AWG
Overall cable diameter	3.28 mm (0.129 in) M17/176-00002	Pair twist lay length	≤ 25.4 mm (≥ 12 twists per foot)
Min. bending radius	5 × OD (17 mm) fixed · 10 × OD dynamic	Flammability & smoke	FAR 25.869 / ABD0031 / MIL-DTL-17 pass
Aircraft fluids	Resists Skydrol, Jet-A1, MIL-PRF-5606, de-icer	Shield optical coverage	≥ 90 % single braid · ≥ 95 % double shield
Standards	MIL-STD-1553B, SAE AS15531, MIL-DTL-17/176		

Sizes

8 standard constructions

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

Order designation	Impedance / size	Conductor & dielectric	Wall ≈ mm	Outer Ø ≈ mm	Metal kg/km	Weight ≈ kg/km	Min. bend R fixed mm
Standard MIL-STD-1553 configurations 8 sizes							
☐ M17/176-00002 Standard	78 Ω · 2×24 AWG PFA	19×36 SPC Alloy + PFA	0.38	3.28	14.5	26.8	17
☐ EN 3375-003 24 AWG ETFE	78 Ω · 2×24 AWG ETFE	19×36 SPC Alloy + ETFE	0.35	3.15	14.5	24.0	16
☐ 1553B-DS24 Double Shield	78 Ω · 2×24 AWG 2×Braid	19×36 SPC + Foil/2×Braid	0.42	3.85	23.0	36.5	20
☐ 1553B-LL22 Low-Loss	78 Ω · 2×22 AWG ePTFE	19×34 SPC + ePTFE + ETFE	0.40	3.95	21.0	34.0	20
☐ 1553B-LL20 Long-Trunk	78 Ω · 2×20 AWG ePTFE	19×32 SPC + ePTFE + ETFE	0.45	4.75	31.0	48.0	24
☐ 1553B-26 Sub-Miniature	78 Ω · 2×26 AWG ePTFE	19×38 SPC Alloy + ETFE	0.30	2.65	9.8	17.5	14
☐ 1553B-LSZH Shipboard	78 Ω · 2×22 AWG LSZH	19×34 Sn-Cu + PE + LSZH	0.75	5.60	26.0	52.0	28
☐ 1553B-SPACE Low-Outgas	78 Ω · 2×24 AWG Polyimide	19×36 SPC + ePTFE/PI Tape	0.32	3.10	14.5	23.0	16

– Outer diameters and weights are nominal engineering values for MIL-STD-1553 subject to standard manufacturing tolerances per MIL-STD-1553B / SAE AS15531 / MIL-DTL-17/176 (78 Ω Avionics Twinax Bus).

RF & electrical data

8 sizes

Configuration	Max. DC R @ 20 °C Ω/km	Char. Z0 Ω	Velocity VoP / L (% or nH/m)	Dielectric test V AC rms
M17/176-00002 Standard (78 Ω · 2×24 AWG PFA)	93.50	78.0	69.0	1,500
EN 3375-003 24 AWG ETFE (78 Ω · 2×24 AWG ETFE)	93.50	78.0	74.0	1,500
1553B-DS24 Double Shield (78 Ω · 2×24 AWG 2×Braid)	93.50	78.0	74.0	1,500
1553B-LL22 Low-Loss (78 Ω · 2×22 AWG ePTFE)	53.10	78.0	78.0	1,500
1553B-LL20 Long-Trunk (78 Ω · 2×20 AWG ePTFE)	33.50	78.0	78.0	1,500
1553B-26 Sub-Miniature (78 Ω · 2×26 AWG ePTFE)	150.00	78.0	75.0	1,200
1553B-LSZH Shipboard (78 Ω · 2×22 AWG LSZH)	54.00	78.0	66.0	1,500
1553B-SPACE Low-Outgas (78 Ω · 2×24 AWG Polyimide)	93.50	78.0	78.0	1,500

– Characteristic impedance, propagation velocity, DC resistance at +20 °C, and dielectric withstand voltages verified per MIL-STD-1553B / SAE AS15531 / MIL-DTL-17/176 (78 Ω Avionics Twinax Bus).

Standards and approvals

- ✓ MIL-STD-1553B / SAE AS15531 / MIL-DTL-17/176 (78 Ω Avionics Twinax Bus)
- ✓ CE (2014/35/EU) & RoHS 3 (2015/863/EU) Compliant
- ✓ REACH SVHC Compliance Verified

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

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Email

info@tebaoflex.com

Web

tebaoflex.com/cables/mil-std-1553b-78-ohm-twinaxial-avionics-command-telemetry-data-bus-cable



Typical values for this cable type, based on MIL-STD-1553B / SAE AS15531 / MIL-DTL-17/176 (78 Ω Avionics Twinax Bus). Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.