SpaceFibre 6.25 Gbps spacecraft harness

SpaceFibre Harness Assembly

SpaceFibre High-Speed Aerospace Harness Assembly

ECSS-E-ST-50-11C 6.25 Gbps/lane low-outgassing 100 Ω SpaceFibre spacecraft harness



ECSS-E-ST-50-11C | **6.25 Gbps / Lane** | **100 Ω Twinax**

Application

Space-qualified SpaceFibre / SpaceFibre differential harness engineered to ECSS-E-ST-50-11C for 6.25 Gbps single-lane and 25 Gbps 4-lane spacecraft payload links, using microporous ePTFE dielectric and silver-plated copper.

Typical uses: Earth Observation Satellite Payloads, Synthetic Aperture Radar (SAR), Spacecraft On-Board Data Handling, Launch Vehicle Avionics, High-Altitude Pseudo-Satellites (HAPS)

Construction





Cross-section, not to scale

1. Silver-plated copper / SPCW signal conductors
2. Microporous expanded PTFE (ePTFE) dielectric

Technical data

Typical values

Protocol standard	ECSS-E-ST-50-11C SpaceFibre (up to 6.25 Gbps/lane)	Differential impedance	100 ± 5 Ω at TDR 50 ps rise time
Insertion loss at 3.125 GHz	≤ 0.85 dB/m (26 AWG) · ≤ 0.65 dB/m (24 AWG)	Intra-pair skew	≤ 5.0 ps/m
NEXT (TX to RX pair)	≥ 65 dB up to 3.125 GHz	Shielding effectiveness	≥ 90 dB (100 MHz to 6 GHz)
Operating thermal vacuum	−100 °C to +200 °C	Outgassing (ECSS-Q-ST-70-02C)	TML < 1.0 % · CVCM < 0.1 % · RML < 1.0 %
Radiation resistance	≥ 100 Mrad (1 MGy) total ionizing dose	Min. bend radius (static)	5 × OD (single-lane) · 6 × OD (multi-lane)
Min. bend radius (dynamic)	10 × OD	Random vibration	Qualified to 25 g rms launch vibration profile
Mating durability	≥ 500 cycles (space-grade micro-D / SpaceFibre)	Flammability	Non-flammable in vacuum & atmosphere per ECSS-Q-ST-70-29C
Atomic oxygen & UV	Fluoropolymer FEP/PFA jacket + optional silver braid	Standards	ECSS-E-ST-50-11C SpaceFibre
Standard packing	ISO Class 7 cleanroom double-bagged under dry nitrogen with VNA plots		

Sizes

12 standard constructions

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

Order designation	Lanes Pairs	Gauge AWG	Aggregate Gbps	Atten @3.1GHz dB/m	Nominal OD mm	Linear Mass g/m	Min. bend R mm
Single-Lane SpaceFibre Harnesses (6.25 Gbps, 1 TX + 1 RX Twinax) 6 sizes							
☐ AXM-SF-1L-26AWG-0.5M	1 Lane (2×100Ω)	26	6.25	0.82	4.8	38	29
☐ AXM-SF-1L-26AWG-1.0M	1 Lane (2×100Ω)	26	6.25	0.82	4.8	38	29
☐ AXM-SF-1L-26AWG-2.0M	1 Lane (2×100Ω)	26	6.25	0.82	4.8	38	29
☐ AXM-SF-1L-26AWG-3.0M	1 Lane (2×100Ω)	26	6.25	0.82	4.8	38	29
☐ AXM-SF-1L-24AWG-3.0M	1 Lane (2×100Ω)	24	6.25	0.62	5.6	52	34
☐ AXM-SF-1L-24AWG-5.0M	1 Lane (2×100Ω)	24	6.25	0.62	5.6	52	34
Multi-Lane SpaceFibre Harnesses (12.5 Gbps 2-Lane & 25 Gbps 4-Lane) 6 sizes							
☐ AXM-SF-2L-26AWG-1.0M	2 Lanes (4×100Ω)	26	12.5	0.84	6.8	74	41
☐ AXM-SF-2L-26AWG-2.5M	2 Lanes (4×100Ω)	26	12.5	0.84	6.8	74	41
☐ AXM-SF-2L-24AWG-4.0M	2 Lanes (4×100Ω)	24	12.5	0.64	7.8	98	47
☐ AXM-SF-4L-26AWG-1.0M	4 Lanes (8×100Ω)	26	25.0	0.85	9.2	142	55
☐ AXM-SF-4L-26AWG-2.5M	4 Lanes (8×100Ω)	26	25.0	0.85	9.2	142	55
☐ AXM-SF-4L-24AWG-4.0M	4 Lanes (8×100Ω)	24	25.0	0.65	10.6	188	64

– Every flight or engineering-model assembly is supplied with a 20 GHz Vector Network Analyzer (VNA) S-parameter & TDR test report (Sdd21, Sdd11, intra-pair skew, and NEXT).

Standards and approvals

- ✓ ECSS-E-ST-50-11C SpaceFibre Link Compliant
- ✓ ESCC 3902/004 & ECSS-Q-ST-70-02C Outgassing

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/axomach-spacefibre-high-speed-aerospace-harness-assembly

Typical values for this cable type, based on ECSS-E-ST-50-11C / ESCC 3902/004 / ECSS-Q-ST-70-08C. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.