
SPACE MICRO-D CONNECTORS

SPACE APPLICATIONS 156

MDSA RANGE

- Micro-D connectors and assemblies for space applications 157
- General characteristics 158
- Pigtail connectors 159
- PCB connectors 160
- Wire descriptions 161

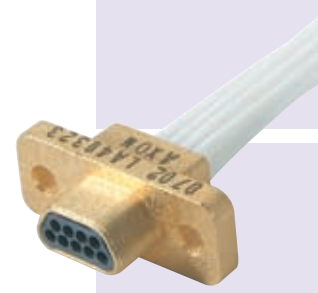
HIGH SPEED LINKS FOR SPACE APPLICATIONS

- SpaceWire links 163
- IEEE1394 links 167
- 10 Gb/s solutions 169

CUSTOM SPACE APPLICATIONS 170

120 WAY MICRO-D CONNECTORS 171

Space Micro-D
connectors



SPACE APPLICATIONS

AXON' has been involved in numerous space approved projects such as :

- ▶ MIL-STD-1553 databus systems.
- ▶ ESCC wires and cables
 - ESCC 3901 001 : Polyimide insulated wires.
 - ESCC 3901 002 : Lightweight polyimide insulated wires.
 - ESCC 3901 012 : Radiation cross-linked ETFE insulated cables
 - ESCC 3901 013 : PTFE/polyimide insulated wires and cables.
 - ESCC 3901 018 : PTFE/polyimide insulated wires and cables
 - ESCC 3901 019 : CELLOFLON®/polyimide insulated wires.
 - ESCC 3901 021 : PTFE/polyimide insulated wires and cables.
 - ESCC 3901 024 : Abrasion resistant PTFE tape wires and cables.
 - ESCC 3902 002 : Coaxial, triaxial and symmetrical cables.
- ▶ High Speed data links (IEEE 1394, SpaceWire).
 - ESCC 3902/003 SpaceWire cable manufacturing
 - ECSS-E-50-12C SpaceWire cabling
- ▶ Very High Speed data links up to 10Gb/s on dedicated 100 Ω media low skew & low cross-talk with matched micro-D connectors.
- ▶ Power distribution systems : aluminium busbars for reduced weight and improved voltage drop.
- ▶ MIL-STD-1553 connectors (ACB1) approved to ESCC3401 079.
- ▶ Various accessories available including halorings, backshells, and special hardware.
- ▶ Custom designed cables and assemblies with specific properties, such as temperature control, low electrostatic output and radiation resistance.

AXON' has been involved in numerous space approved projects such as :

- ▶ the International Space Station for manned flights.
- ▶ various satellites programmes (LEO and GEO).
- ▶ rocket launchers such as Ariane 5.

- ▶ Approval :
ESCC 3401/029 (ESA EPPL2)



▲ CLASS 100 000 CLEAN ROOM
AXON' IS EQUIPPED WITH 2 CLEAN ROOMS



▲ ACCESSORIES



▲ ESA WIRES AND CABLES

10 Gb/s SOLUTIONS

FOR SPACECRAFT COMMUNICATION NETWORKS

Specifically designed high speed links capable of data rates up to 10 Gbit/s.

- Two 50Ω coaxial cables per transmission line are used and lengths are matched in order to reduce skew to a minimum.
- The connector has a special 100Ω insert for the transmission line. In the case of multi-way connectors each 100Ω insert is isolated from the others. This solution delivers:
 - Low skew (<10 ps)
 - Low crosstalk (<60 dB)

▶ 10Gb/s CONNECTOR EXAMPLES

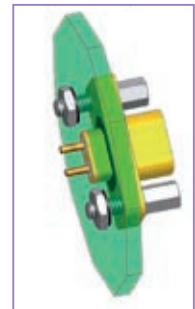
▶ TWO WAY PCB QFX CONNECTOR

Two 100Ω transmission lines.
Hand formable coaxial cable pigtail soldered to a PCB by the user.



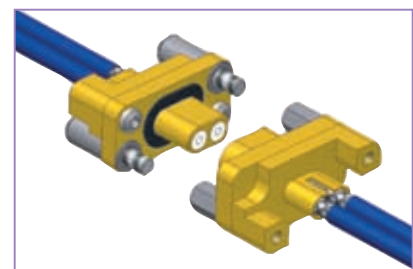
▶ SINGLE WAY PCB PARALLEL GAP CONNECTOR

Single 100Ω transmission line.
Flat conductor welded* to the contact and soldered to a PCB.
*parallel gap electric welding performed by the user.



▶ SINGLE WAY INLINE MATED PAIR

Single 100Ω transmission line.
Two AX2.4 coaxial cables (see below).



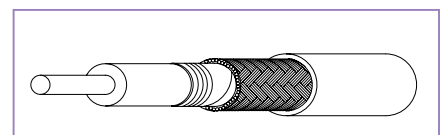
▶ FOUR WAY INLINE MATED PAIR

Four 100Ω transmission lines.



▶ AX2.4 COAXIAL CABLE

Special 50Ω AWG 24 coaxial cable with CELLOFLON® expanded PTFE dielectric.



▲ SINGLE WAY AX2.4 10 GB/S CONNECTOR

▲ AX2.4 COAXIAL CABLE