



EXPERTISE IN

AEROMIL



RADARS
ANTENNAS
NAVIGATION COMMUNICATION SYSTEMS
COUNTER MEASURES
ELECTRONIC SYSTEMS
FORWARD-LOOKING INFRA-RED SYSTEMS
MISSILES
HELMET MOUNTED DISPLAYS
RETROFIT OF AIRCRAFT
GIMBALS
ELECTRONIC BOXES
TWIST CAPSULES
EJECTION SEATS
ETC...

EXPERTISE IN AEROMIL



REQUIREMENTS OF AEROMIL APPLICATIONS

➔ FLEXIBILITY, WEIGHT SAVING, MINIATURISATION, HIGH FREQUENCY, HIGH DATA RATE, EMC PERFORMANCE, EXTREME TEMPERATURES.

➔ **APPLICATIONS** : RADARS, ANTENNAS, NAVIGATION COMMUNICATION SYSTEMS, COUNTER MEASURES, ELECTRONIC SYSTEMS, FORWARD-LOOKING INFRA-RED SYSTEMS, MISSILES, HELMET MOUNTED DISPLAYS, RETROFIT OF AIRCRAFT, GIMBALS, ELECTRONIC BOXES, TWIST CAPSULES, ETC...

AXON' CABLE has brought its expertise in the manufacture of precision conductors, wires, cables and assemblies together with its knowledge of overmoulding techniques and EMI protection to be able to offer solutions to civil and military aeronautics.



CLEAN ROOM

REFERENCES

Customers > Selex, BAE systems, Thales, IAI, Elta, Elop, Nex1, EADS-Airbus, Eurocopter, INDRA, MBDA, EADS-CASA, ...

Projects > Tiger, Eurofighter, Stormshadow, Tornado, Nimrod, C27J, NH90, EH101, ASTOR, JSF, Lynx, F18, Gripen, M346, A129, DIRCM, Rafale, Meteor, FV430 armoured vehicle, VT1 missile, ISS, Columbus, A400 M, Helicopter OH-1, A330 MRTT, ...

WIRES AND CABLES

- ➔ Wires and cables insulated with PTFE, FEP, PFA, ETFE, cross linked ETFE, polyimide and other insulating materials for extreme temperatures : from -90°C to + 260°C.
- ➔ Flexible wrapped cables insulated with PTFE.
- ➔ ESA wires, aluminium.
- ➔ AXALU® aluminium round wires and cables for weight saving
- ➔ Very Flexible high stranded conductor Wires (FW) for ease of installation or long flexlife.
- ➔ UV Laser markable extruded wires (including PTFE version).
- ➔ VITAX™ composite cables insulated with fluorinated elastomers : high flexibility, high resistance to aggressive chemical environments and high temperature performance up to 230°C.
- ➔ MIL-STD-1553B databus cables : a good compromise between electrical characteristics, space and weight.
Standards : MIL-C-17/176-00002, pr EN 3375, PANAIA 6421, ECS 0700, SSQ 21655.
- ➔ Coaxial cables and low loss microwave coaxial assemblies. The dielectric can be made with CELLOFLON® (porous PTFE) for lighter, smaller and more flexible cables with better electrical characteristics.
- ➔ High speed wires : militarised IEEE 1394 480 mbits/s.
- ➔ On board Ethernet 100 base T 100 mbits/s.
- ➔ Fibre Channel links 2.2 gbts/s.
- ➔ Flat Flexible Cables for board-to-board interconnections and display interconnect.
- ➔ Custom designed wires and cables.
- ➔ SILFORM®, flat silicone cables with hybrid construction for inner elements.





EYE PATTERN



METROLOGY LABORATORY

CONNECTORS



➤ ACB1 connectors designed for MIL-STD-1553B databus applications.
 Qualifications and design according to EN3716
 Miniature single way connector available with 4 different keyways ; will mate with Raychem DK621 and Trompeter 450 series.



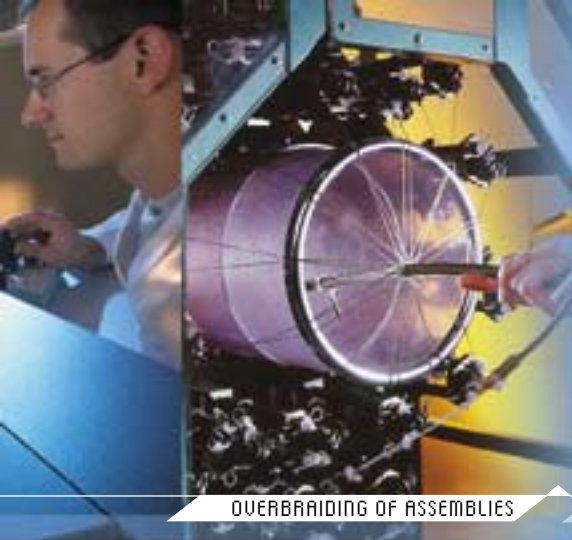
➤ ACB2 connectors designed for MIL-STD-1553B databus applications
Qualifications : pr JN1032, pr PANG484
 Single way connector equipped with size 10 triaxial contact.

➤ Micro-D connectors for space, weight saving and miniaturisation : BS, BR, CBR, etc...
 Standard and custom designed metal and plastic shells, strip and saver, circular Micro-D.
Characteristics : twist-pin contact (3 Amp)
Standard : MIL-DTL-83513

➤ Plastic and metal NANO-D connectors for extreme miniaturisation Nano-D backshells, custom designed Nano-D shells.
Characteristics : twist-pin contact (1 Amp)
Standard : MIL-DTL- 32139



MIL-STD-1553 BUS ASSEMBLY



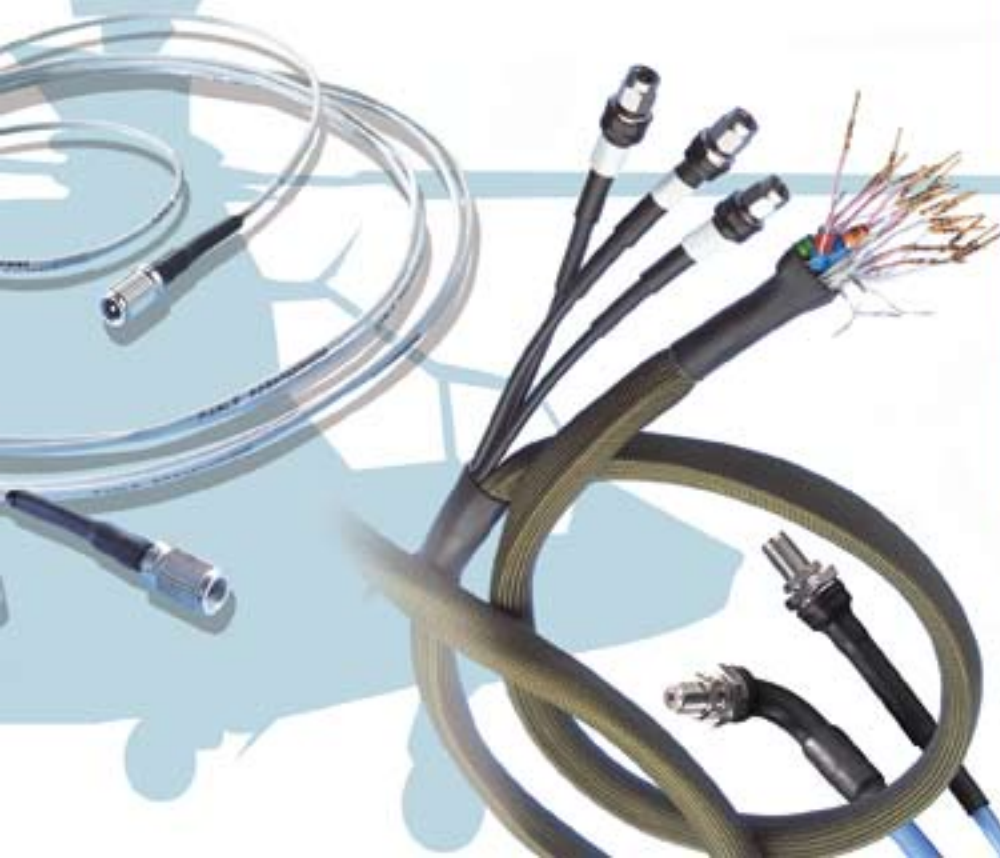
OVERBRAIDING OF ASSEMBLIES



BUS BARS

ASSEMBLIES

- Expertise in the manufacture of assemblies terminated with different types of connectors : circular, miniature, coaxial, D-Sub, MIL-38999 connectors as well as a large range of special and custom designed connectors.
- Low loss microwave coaxial assemblies terminated with connector series 7/16, SMA, N or TNC and operating at 40 GHz.
- MIL-T-81490 (*qualification in process*).
- MIL-STD-1553B bus assemblies for on-board digital transmission systems with in-line or low profile removable couplers (single or multistub)
Standards : SPE-I-403-A-0070, EN3567.
- *Transformers - Standard : JN 1081 (Eurofighter programme), MIL-T-21038.*
- Accessories, splices, relay couplers.
- Standard and custom designed Micro-D and Nano-D assemblies, pigtails : wires AWG 22 to 36, various configurations including special shapes.
- Nano-D assemblies made with 30-32 AWG wires and plastic or metal Nano-D connectors to be integrated into assemblies or mounted onto PCB'S.
- Twist capsules, AXOTWIST™ metal cassette in aluminium integrating an electrical cable : connection between a fixed part and a rotating part - possible termination using μ D connectors.



EXPERTISE IN CUSTOM DESIGN SOLUTIONS

AXON' expertise in different fields (metallurgy, EMI protection, plastics technology, interconnect solutions, etc...) enables the company to offer solutions suited to customer requirements including bus bars and bar batteries for power distribution system. Developed for satellites, they can be used to distribute energy between generators and voltage regulation units in aircraft or between modules in 3D radar systems.

The main advantages of such technology are :

- high conductivity (due to pure aluminium conductor integrated in the bars)
- on-board weight reduction
- maximum electrical performance

Our engineers design interconnect systems using AUTOCAD® and INVENTOR® with links to other engineering software (Catia files can be processed).



MODE STIRRED CHAMBER



HOT MELT OVERMOULDING



EXPERTISE IN EMC

- Dedicated development team: from simulations to the manufacture of braided cables and harnesses.
- Approved laboratory to carry out transfer impedance.
- Shield efficiency measurement up to 18 GHz in mode stirred chamber.
- Overbraiding of multi-branched assemblies.
- Connector backshells to protect the assembly from EMI problems or mechanical damage.
- D-Sub or Micro-D halorings to facilitate termination of the wire shields.
- Shield band termination : AXOCLAMP® to connect braid to backshells.
- Shielding braid : AXOTRESSE®: copper and/or silver plated aluminium braids with guaranteed transfer impedance.

EXPERTISE IN PLASTICS TECHNOLOGY

- Custom designed solutions for mechanical protection of the cable/connector interface : shaping, airtightness, mechanical strength, chemical resistance, protection of shielding termination, etc...
- Mould design and overmoulding techniques : low pressure, hot melt, high pressure.
- Potting.

TESTING CAPABILITIES AND QUALITY ASSURANCE

- **Electrical characteristics** : automatic testing for electrical continuity, insulation resistance, dielectric strength, electromagnetic compatibility, eye pattern.
- **Environmental characteristics** : thermal shock, humid heat, life duration, flame, accelerated ageing, salt spray, etc...
- **Mechanical characteristics** : combined flex/torsion, winding, folding, vibration, shock, etc...

QUALITY ASSURANCE

ISO 9001:2000 / ISO 14001 / EN 9100 / ISO/TS 16949





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