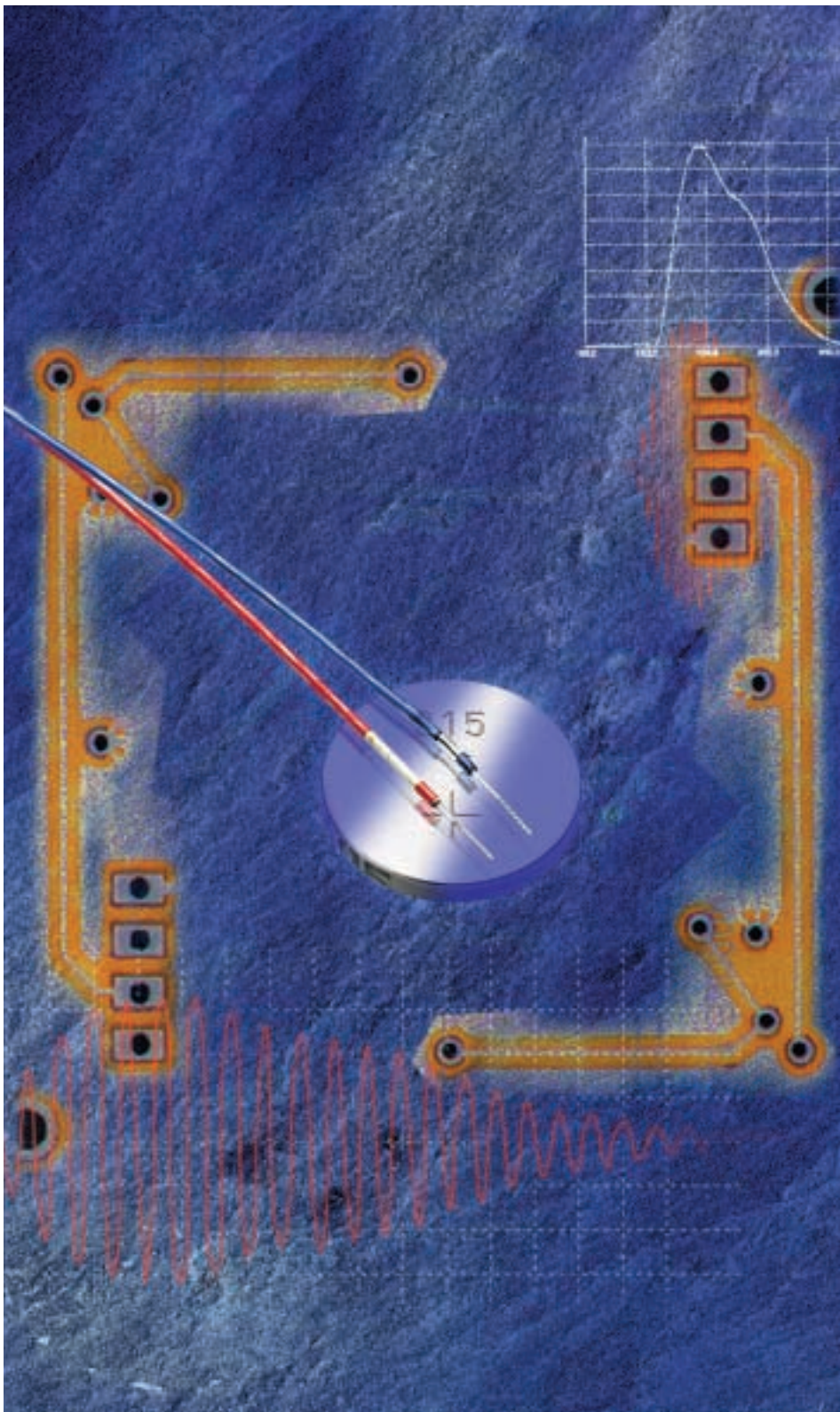


# axon'

CABLE & INTERCONNECT



## Picocoax<sup>®</sup>

MINIATURE COAXIAL CABLES



**AXON'CABLE**, the specialist in interconnect solutions, has developed a complete range of coaxial cables and harnesses for applications where a large number of signals have to be transmitted with no interference.

## PICOCOAX® CABLES



AXON' has developed a full range of flexible and miniature coaxial cables called PICOCOAX® which offer a good compromise between small diameter (e.g. 0.22 mm) and capacitance of 50 to 100 pF/m.

AXON' is also able to design products to customer requirements or specifications.

Our materials including copper plated conductors, fluorinated insulation (FEP or CELLOFLON®) guarantee high flexibility, good solderability and excellent electrical performance.



To ease the termination process, PICOCOAX® cables can be manufactured in different colours.

## MULTIPICOCOAX® CABLES

**Round construction (bundles of 18 to 512 PICOCOAX® cables)**

AXON' matches the customer request to specific cable constructions

### ROPELAY CONSTRUCTION

For external probes, AXON' advises a ROPELAY construction made from bundles of 18 coaxes wrapped with colour coded fibres which eases the termination process. The assembly of several bundles allows the construction of cable ranging from 18 to almost 512 coaxials. The cables are extremely flexible and will withstand several hundred thousand cycles of combined flexion/torsion. This construction increases the electrical performance in terms of capacitance matching and crosstalk.

### CONCENTRIC CONSTRUCTION

For intracorporeal probes and especially paediatric probes where the outer diameter of the cable is critical, AXON' advises a concentric construction : 128 coaxials maximum.

**A flat construction is possible on request.**

Its manufacturing expertise enables AXON' to offer very high flexible cables to required length : the cable is not extruded but slipped into the jacket.

AXON has expertise not only in miniaturisation but also in thermoplastic and silicone compounds for medical applications : grades and colours have been tested according to ISO 10993.

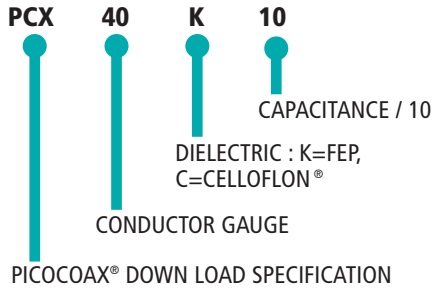
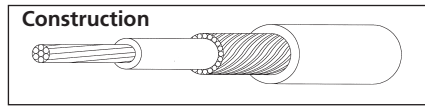
	PVC					SILICONE	PTFE		TPE	PUR	FEP	CETHAX G
	MIST GREY RAL9016	FOG WHITE RAL9002	BROWN	DARK GREY	BLACK	GREY RAL7035	NATURAL	BLUE RAL5002	NATURAL	BLACK	NATURAL	BLUE
Direct Hemolysis ISO 10993-4	●	●	●		●	●						
Indirect Hemolysis ISO 10993-4	●	●	●		●	●						
Elution Test ISO 10993-5	●	●	●	●	●	●						●
Implantation Test ISO 10993-6	●	●	●		●	●						
Intracutaneous Test ISO 10993-10	●	●	●		●	●						●
Kligman Maximization Study ISO 10993-10	●	●	●		●	●						●
Pyrogen Test ISO 10993-11	●	●	●		●	●						
Systemic Injection Test ISO 10993-11	●	●	●		●	●						
USP XXIII, Class VI							●	●	● (*)	● (*)	● (*)	
MHW 301, Japanese health ministry	●	●										

(\*) Manufacturer's information on request



# REFERENCES

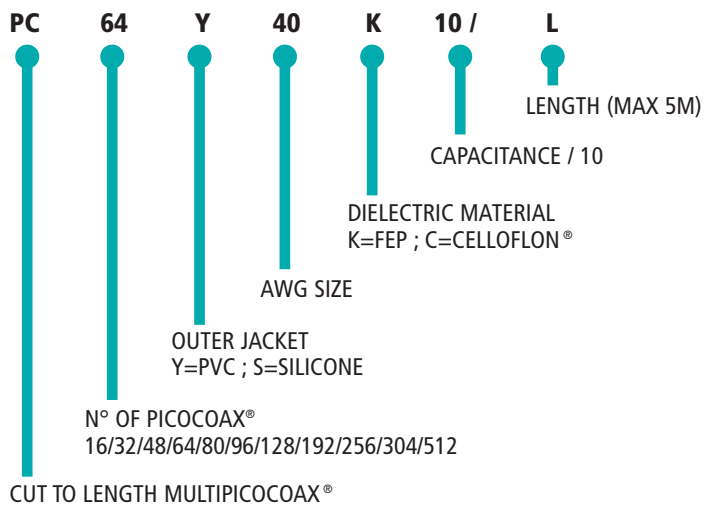
## PICOCOAX®



PICOCOAX® DOWN LOAD SPECIFICATION

For detailed information on electrical or dimensional characteristics about PICOCOAX® and MULTIPICOCOAX® please ask for data sheets.

## MULTIPICOCOAX®



## CELLOFLON®

For smaller, flexible, high performance coaxial cables.

AXON' has a patent on its CELLOFLON® (porous PTFE) insulation. This material offers a porosity of 80 %, a density of 0.42 and a dielectric constant of 1.35 (solid PTFE density = 2.2 - dielectric constant = 2.1). The use of CELLOFLON® enables the manufacture of lighter, smaller, more flexible coaxial cables with improved electrical characteristics.

As the dielectric constant is lower, there are fewer losses, and both the cut-off frequency and velocity of propagation are increased.



## QUALITY ASSURANCE ISO 9001 VERSION 2000

AXON'CABLE is committed to a programme of continuous improvement of quality and has successfully retained ISO 9001 approval (version 2000). In addition, AXON' is also able to deliver products which conform to European and international standards including NF, UL, CSA, ESA and QPL.

Audits are regularly carried out by qualified internal auditors or by organisations such as the French Association for Quality Assurance (AFAQ-EQnet member), in order to assess our Quality Management System.

To help quality be closely involved with the manufacturing process, each site has its own designated quality representative. The quality control laboratories are equipped with high performance test equipment guaranteeing performance. Certificates of conformity are available on request.



# PRODUCTION CAPABILITIES

Between the manufacturing and technical design teams in France and Latvia, AXON' is able to deliver both large and small volume orders.

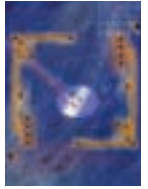
To guarantee high product reliability and a continuous quality process, AXON' uses the most up to date equipment :

- automatic and laser stripping machines,
- positioning tools,
- automatic sorting systems,
- dual head hot bar welding systems,
- automatic test benches.

The PICOCOAX® product range is 100 % tested.

AXON' is able to offer shielded terminations suitable for medical electronics.

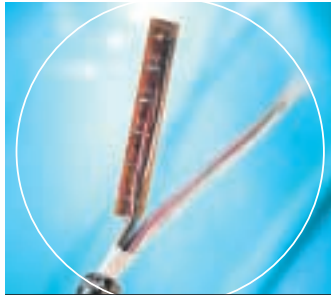
Shield performance can be verified by in house testing of surface transfer impedance.



## INTERCONNECTION SYSTEMS

*AXON' is able to fully integrate the system with its own parts or with accessories supplied by the customer. In addition to its expertise in interconnect solutions with different types of connectors (ZIF/LIF, micro D, nano D, sub D, etc...), AXON' can offer a full range of welded printed circuits :*

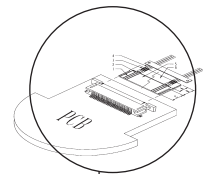
### Welding with PCB



- Welding of the PICOCOAX® wires directly onto PCB.
- Design according to wiring schedule up to 0.3 mm pitch.
- Connectors can be directly soldered onto a PCB.

### PICOFLEX®

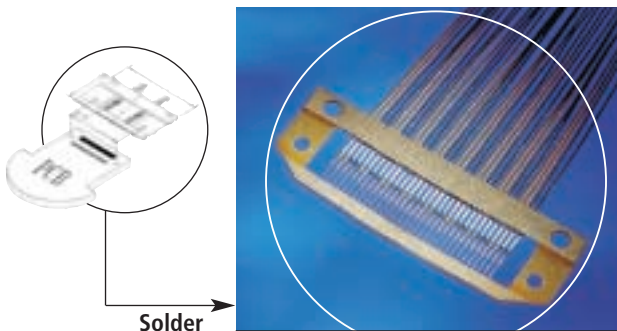
- The coaxials are welded on a flexible printed circuit (FPC).
- The FPC is mounted in a ZIF connector surface mounted on a PCB
- Compatible with market ZIF connector
  - Available in 0.5 mm (.019") pitch
- Compatible with PICOCOAX® AWG 38 to 46 (50 and 100 pF/m)



Plug

### PICOWELD®

- Maintains alignment of the PICOCOAX® at a constant pitch.
- Adapted to hot bar system soldering.
- Available in 32 positions pitch 0.635 mm (0.025")
- Compatible with AWG 40 and 42 (50 and 100 pF/m)
- Other constructions available on request.



Solder

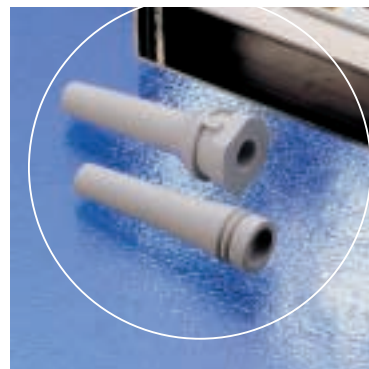
## PLASTIC PARTS

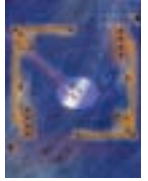
**The ultrasound market requires bioburden and aesthetic products.**

AXON' applies its expertise in modular mould design to provide the Ultrasound assemblies : high flex bend relief.

**Using biocompatible high-tech material :**

- ISO10993/1 and MHW301 standard compatible PVC.
- Sterrad 100® and Steris sterilization compatible.

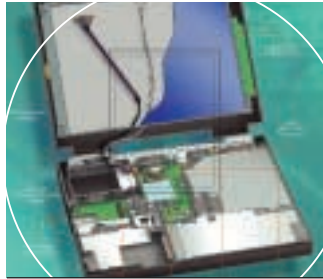




# MAIN PICOCOAX® APPLICATIONS

*Irrespective of the application, PICOCOAX® harnesses and cables can meet the flexibility and miniaturisation demands for high quality transmission.*

## COMPUTER



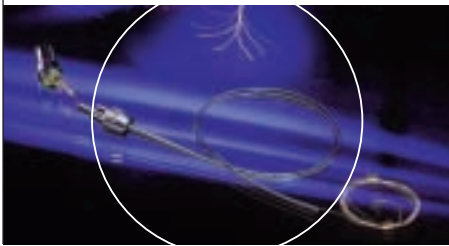
## WIRELESS APPLICATIONS

In notebooks, PICOCOAX® cables can be the link between the flat panel display and the mother board. With its individual shielding and a low dielectric constant, PICOCOAX® can accommodate high frequency clock speeds and provide significant EMI protection. The small size and construction of the PICOCOAX® helps to locate the cable within the notebook hinge.

## MEDICAL

Axon' expertise which is based on the design and manufacture of ultra-miniature conductors, cables, harnesses and overmoulding enables the company to offer interconnect solutions for medical applications :

### CATHETER



With extensive knowledge of the manufacture of conductors as well as dielectric materials, AXON' offers a full range of miniature coaxials up to AWG 46. Because of its small size, PICOCOAX® cables are very well suited for transmitting data to electronic catheter devices.

### MEDICAL IMAGING

#### ENDOSCOPY, ELECTROCARDIOGRAM

In ultrasound imaging systems, highly flexible MULTIPICOCOAX® permits the transmission of weak signals from the transducers of the probe to the monitoring equipment. AXON' offers a complete, electrically and mechanically optimised solution, ready to be plugged into the system and connected to the probe. This technique is suitable for both people and animals.



### OXIMETRY SYSTEMS

These systems which measure the oxygen rate in blood require reliable data transmission.

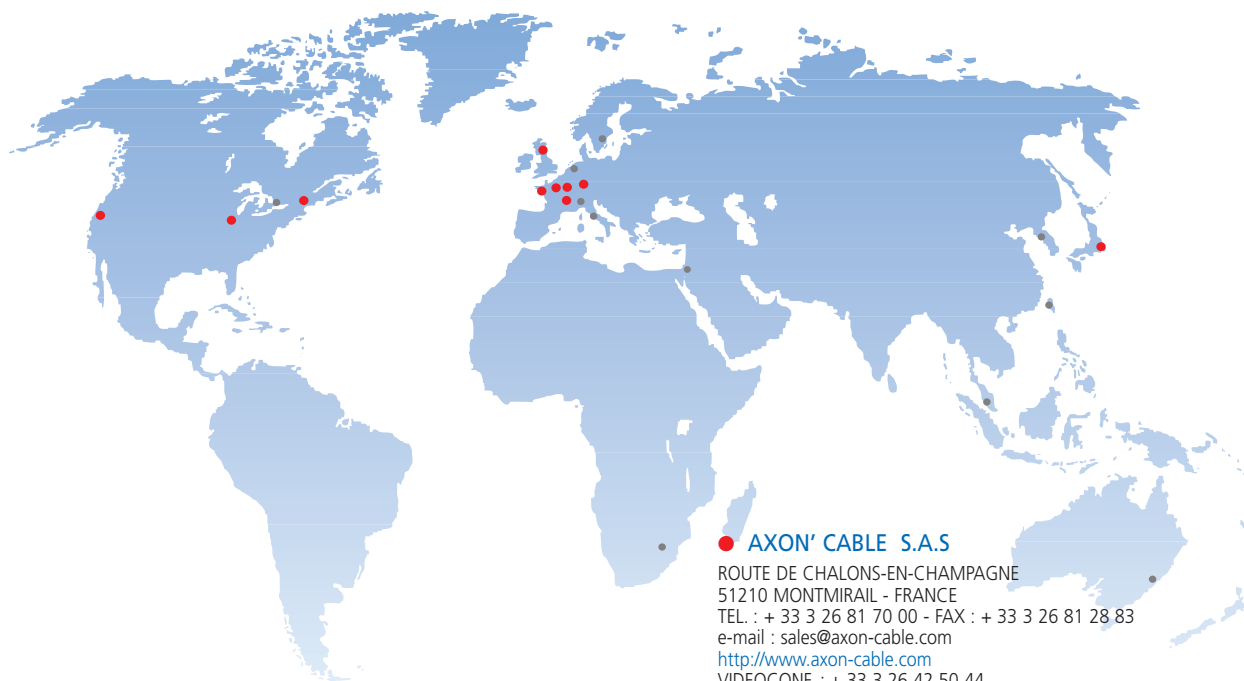
PICOCOAX® cables are assembled and directly connected to the oximeter sensor.



### LCD AND HMD

Axon' designs, develops and manufactures hybrid cables equipped with appropriate systems. These links are the interface between Liquid Crystal Displays or Head Mounted Displays and the remote control device.





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 **EQUIPMENT WIRES**

 **COAXIAL CABLES**

 **FLAT CABLES**

 **COMPOSITE CABLES**

 **HARNESSES**

 **SPECIAL PRODUCTS**

