



Cables & Interconnect

LOW LOSS COAXIAL CABLES AND
INTERCONNECT FOR WIRELESS TRANSMISSION

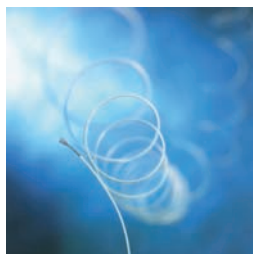
<http://www.axon-cable.com>



Axon' Cable company has developed a range of miniature coaxial cables to meet the electrical performance of the wireless protocols such as Bluetooth®, Wi-Fi IEEE 802.11, a, b or g, Ultra Wide Band and Wimax®. These coaxial cables make connections between electronic boards and microstrip antennas or between antennas and switches or mini PCI and bluetooth® modules whether for laptops, printers, PDA or mobile phones.

A-COAX® LOW LOSS COAXIAL CABLES

Axon' Cable unique extrusion technology of a-coax® combines the excellent dielectric properties of PTFE and air thanks to an optimised alveolar structure. PTFE is a high performance insulating material known for the following qualities : resistance to high temperatures (- 200°C to + 260°C), water and light resistance, low dielectric constant, etc...



ELECTRICAL PERFORMANCE AND EMI PROTECTION



MODE STIRRED
CHAMBER

Axon' can evaluate the operating environment of coaxial cables and adapt the cable's electromagnetic protection to the actual working conditions. With the help of two types of test equipment, Axon' can evaluate the electromagnetic protection of each cable assembly :

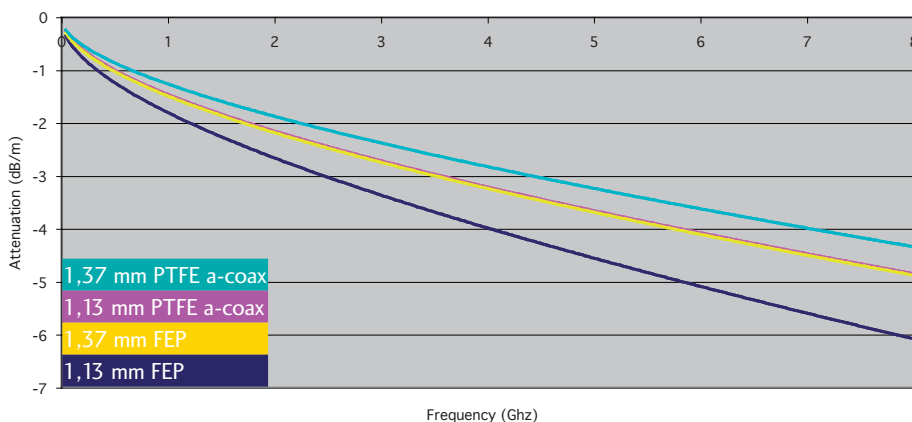
Transfer impedance test bench : used to measure the shielding efficiency of the cable. Maximum operating frequency : 6 GHz

Mode Stirred Chamber : used to measure the shielding efficiency of the assembly. Maximum operating frequency : 18 GHz

For example, the screening efficiency of 1.13 mm a-coax assembly (with connectors both ends) is better than - 35 dB at 2 GHz and better than -20 dB at 6 GHz.

Moreover Axon' a-coax® 1.13 mm offers around 25 % lower insertion loss at 6 GHz compared to the WiFi coax 1.13 mm.

a-coax® technology allows to improve the transmission characteristics keeping the same dimensions.



MINIATURISATION AND WEIGHT

Axon' a-coax® offers a miniaturized and lighter version of the regular WiFi coax 1.37mm keeping the same high frequency performance.

Axon' a-coax® 1.13mm is one of the lightest product on the market.

Axon' a-coax® technology allows to increase the working frequency of a coax for an equivalent Insertion Loss level.

MECHANICAL AND ENVIRONMENTAL PERFORMANCE

PTFE is well known for its flexibility and its auto-lubricant ability. Axon' a-coax® is the only product able to undergo the repeated harsh efforts applied when opening and closing a laptop over thousands of times.

Axon' a-coax® benefits as well of the other recognized properties of PTFE : heat and cold stability and UV light resistance.

PROCESSING

Axon' a-coax is easy to process with automatic stripping machines.

ROHS

Axon' a-coax® is a fully RoHS compliant coaxial solution.



IEEE802.11
a,b or g up to 6 GHz
Wimax, UWB up to 12 GHz

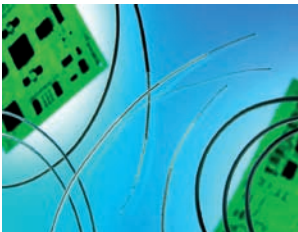


a-coax® low loss coaxial cables																						
Item			Electrical Characteristics					Construction											General Characteristics			Manu- facturing Site
Designation	Reference	Cable Code	Impedance (Ohms)	Typical Attenuation (dB/m)				Inner conductor				Dielectric		Outer Conductor			Jacket					
				2,45 GHz	5,8 GHz	8 GHz	12 GHz	Material	AWG	Composition	Dia. (mm)	Material	Dia. (mm)	Material	AWG	Dia. (mm)	Material	Dia. (mm)	Weight (g/m)	Voltage Rating (Vac)	Temperature Rating (°C)	
a-coax 1,13mm	P540787	10	50±2	2,45	3,90	4,90	6,50	SPC	3007	7x0,102mm	0,306	a-PTFE	0,78	TPC	43	1,03	FEP	1,13+0,13/- 0,10	3,5	200	150	France/ China
a-coax 1,37mm	P536443	11	50±2	2,10	3,50	4,30	5,60	SPC	2807	7x0,127mm	0,381	a-PTFE	0,95	TPC	43	1,20	FEP	1,37±0,10	5	200	150	France/ China

Performance of cables only

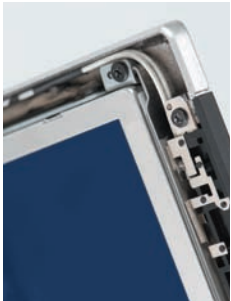
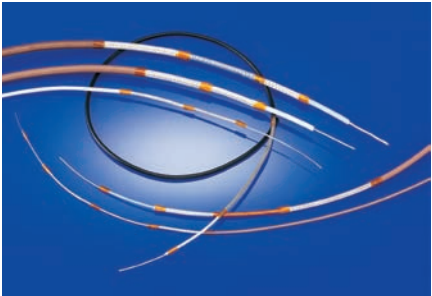
FEP, PTFE COAXIAL CABLES

Axon' is an established expert in the design and manufacture of special coaxial cables with diameters from 0.20 mm to 30 mm, RF cables and connectors. Bringing that expertise together with its knowledge of special materials and processes has enabled Axon' to develop cables for wireless transmission. Axon' uses material such as PTFE, FEP or Celloflon® (patented porous PTFE) to produce high performance dielectrics with excellent heat resistance.



FEP, PTFE coaxial cables																						
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Designation	Reference	Cable Code	Impedance (Ohms)	Typical Attenuation (dB/m)				Inner conductor				Dielectric		Outer Conductor			Jacket					
				2,45 GHz	5,8 GHz	8 GHz	12 GHz	Material	AWG	Composition	Dia. (mm)	Material	Dia. (mm)	Material	AWG	Dia. (mm)	Material	Dia. (mm)	Weight (g/m)	Voltage Rating (Vac)	Temperature Rating (°C)	
0,8FEP	P531073	7	50±3	5,0	9,0	11,0	15,0	SPC	3607	7x0,05mm	0,150	FEP	0,40	TPC	43	0,65	FEP	0,81±0,10	1,8	200	150	France / China
0,8PTFE	P532767	6	50±3	4,8	8,6	10,6	14,6	SPC	3607	7x0,05mm	0,150	PTFE	0,40	SPC	43	0,65	FEP	0,81±0,10	1,8	200	200	France
1,13FEP	P536718	8	50±2	3,00	5,00	6,20	8,40	SPC	3207	7x0,079mm	0,237	FEP	0,71	TPC	43	0,96	FEP	1,13+0,07/-0,05	3,5	200	150	France / China
1,13PTFE	P530738	1	50±2	2,90	4,80	6,00	8,20	SPC	3207	7x0,079mm	0,237	PTFE	0,71	SPC	43	0,96	FEP	1,13+0,07/-0,05	3,5	200	200	France
1,37FEP	P532589	9	50±2	2,40	3,90	4,85	6,50	SPC	3007	7x0,102mm	0,306	FEP	0,89	TPC	43	1,14	FEP	1,37±0,10	4,5	200	150	France / China
1,37PTFE	P532590	2	50±2	2,30	3,70	4,60	6,30	SPC	3007	7x0,102mm	0,306	PTFE	0,89	SPC	43	1,14	FEP	1,37±0,10	4,5	200	200	France
M17/93 RG178	RG178	3	50±2	2,70	4,50	5,40	7,20	SPCW	3007	7x0,102mm	0,306	PTFE	0,85	SPC	38	1,30	FEP	1,8±0,10	9,3	200	200	France / China

Performance of cables only



PRODUCTION CAPABILITIES

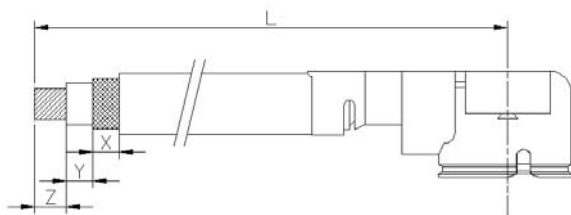
Between the manufacturing and technical design teams in France and China, Axon' is able to deliver both large and small volume orders. To guarantee high product reliability and a continuous quality process, Axon' uses the most up to date equipment ; automatic and laser stripping machines, positioning tools, automatic sorting systems, automatic test benches, semi-automatic process. Our assemblies are 100 % electrically tested.

AXON' WIRELESS ASSEMBLIES

Right through from manufacture of conductor to finished assembly, AXON' are able to offer a complete system fully compatible with MHF, MMCX, SMA and other connectors.

The assemblies consist of a coaxial cable and coaxial connectors. An assembly can be a pigtail (connected at one extremity) or a jumper (connected at both ends).

WIRELESS



BT	SERIES	
1	CABLE CODE	
	1	P530738 1,13PTFE
	2	P532590 1,37PTFE
	3	RG178 M17/93 RG178
	6	P532767 0,8PTFE
	7	P531073 0,8FEP
	8	P536718 1,13FEP
	9	P532589 1,37FEP
	10	P540787 a-coax 1,13mm (low loss)
	11	P536443 a-coax 1,37mm (low loss)
G	JACKET COLOUR	
	B	BLACK
	C	BROWN
	G	LIGHT GREY
	R	DARK GREY
	W	WHITE
	P	BICOLOR WHITE/GREY
	Q	BICOLOR BLACK/GREY
	Z	OTHER (to be precised)
1	FIRST END	
	x	CONNECTOR CODE : see table
0	SECOND END	
	0	NO CONNECTOR
	x	CONNECTOR CODE : see table
250	ASSEMBLY LENGTH (in mm)	
B	EXTREMITY CODE FOR PIGTAILS	
	A	CUT END
	B	STRIPPED & TINNED
	C	PRE-STRIPPED
	D	SPECIAL (to be precised)
STRIPPING DIMENSIONS (in mm)		
5	X	
5	Y	
5	Z	
➔	BT1G10-250B555	

AWG 36 - PTFE CONNECTORS

AWG 32 - PTFE

AWG 32 - PTFE

Connector	Reference or Designation	Supplier	Connector Code	Cable Type
MHF-I	20278-111 R-08	I-Pex	1	6-7
MHF-I	20278-111 R-13	I-Pex	1	1-8-10
MHF-I	20278-111 R-18	I-Pex	1	3
MHF-I	20278-111 R-32	I-Pex	1	2-9
MMCX	MMCX Straight Jack	Various	2	1-2-3-8-9-10-11
MMCX	MMCX Straight Plug	Various	3	1-2-3-8-9-10-11
MMCX	MMCX Right Angle Jack	Various	4	1-2-3-8-9-10-11
MMCX	MMCX Right Angle Plug	Various	5	1-2-3-8-9-10-11
SMA	SMA Straight Plug	Various	6	1-2-3-8-9-10-11
SMA	SMA Straight Jack	Various	7	1-2-3-8-9-10-11
SMA	SMA Plug Right Angle	Various	8	1-2-3-8-9-10-11
SMA	SMA Straight Plug R/P*	Various	9	1-2-3-8-9-10-11
SMA	SMA Straight Jack R/P*	Various	10	1-2-3-8-9-10-11

(*) R/P : Reverse Polarity

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