

WHA YU INDUSTRIAL CO., LTD. (HEAD OFFICE)
TAI HWA ELECTRONIC CO., LTD.(CHINA)
SHANGHAI HUA YU ELECTRONIC CO., LTD.(CHINA)
AEON TECH CO., LTD. (CHINA)

SPECIFICATION FOR APPROVAL

CUSTOMER: 研華股份有限公司

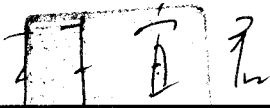
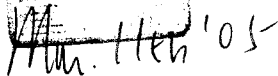
PART NAME: RF Antenna Assembly

PART NO.:

REVISION:

W. Y. P/NO.: C449-510006-A

REV.: X2

	MANUFACTURER SIGNATURE	CUSTOMER SIGNATURE
APPROVED BY :		
DATE :		

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RF Antenna Cable Assembly

Specification

1. Electrical Properties :

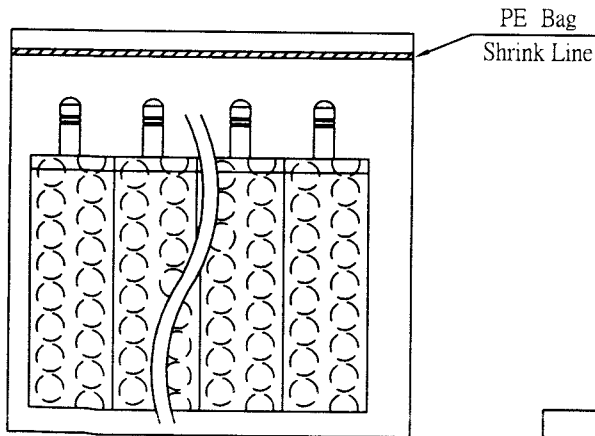
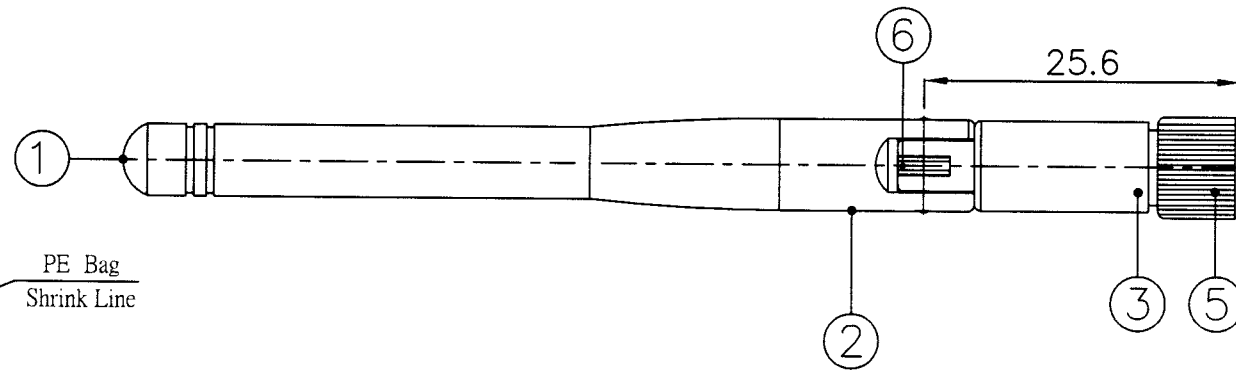
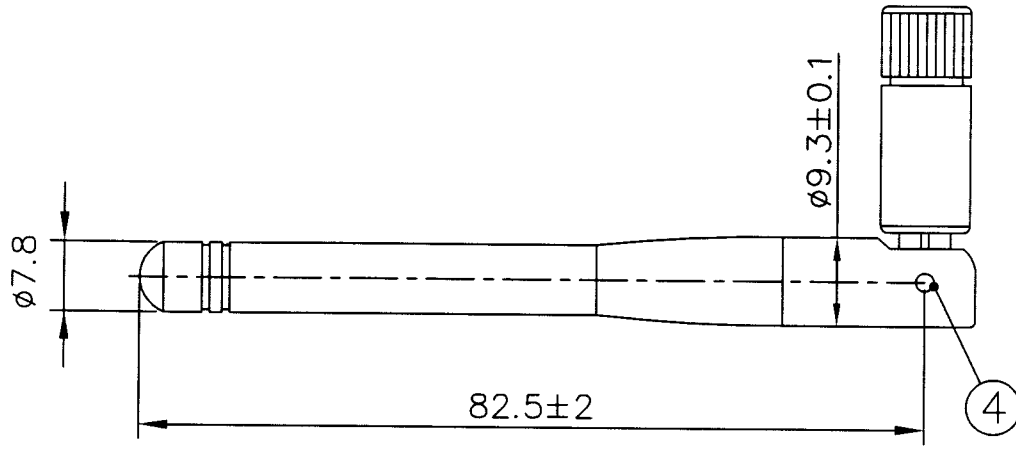
- 1.1 Frequency Rang..... 2.4GHz ~ 2.5GHz
- 1.2 Impedance 50Ω Nominal
- 1.3 VSWR 1.92 Max.
- 1.4 Return Loss..... -10 dB Maximum
- 1.5 Electrical Wave..... $1/2 \lambda$ Diople
- 1.6 Gain(peak)..... 1.8dBi
- 1.7 Admitted Power..... 1W

2. Physical Properties :

- 2.1 Cable..... RG-178 Coaxial Cable
- 2.2 Antenna Cover..... TPE
- 2.3 Antenna Base..... PC
- 2.4 Antenna Base..... PBT
- 2.5 Operating Temp. $-20^{\circ}\text{C} \sim +65^{\circ}\text{C}$
- 2.6 Storage Temp. $-30^{\circ}\text{C} \sim +75^{\circ}\text{C}$
- 2.7 Color Black
- 2.8 Connector..... SMA Plug Reverse

CG-

REV	DATE	DESCRIPTION
X1	1/24-2005	New Issue



6	Cable	RG-178 , Translucent Brown ; 50 Ω	1	
5	Connector	SMA Straight Plug/Reverse	1	
4	Rivet	Brass , Cr Plated (Black)	2	
3	Antenna Base	PBT ; Color : Black	1	
2	Antenna Base	PC ; Color : Black	1	
1	Antenna Cover	TPE ; Color : Black	1	
NO	DESCRIPTION		QTY	REMARK

Packing : 20 pcs/bag

CUSTOMER'S SINGATURE

XX.	±3.0	APPROVED	吳忠達 24-05
X.	±2.0	CHECKED	吳忠達 24-05
.X	±1.0		
.XX	±0.5		
.XXX	±0.1		程淑娟 24-05

CUSTOMER: 研華股份有限公司

PART NO :

PARTNAME: RF Antenna Assembly

W.Y P/NO : C449-510006-A

REV UNIT FILE :

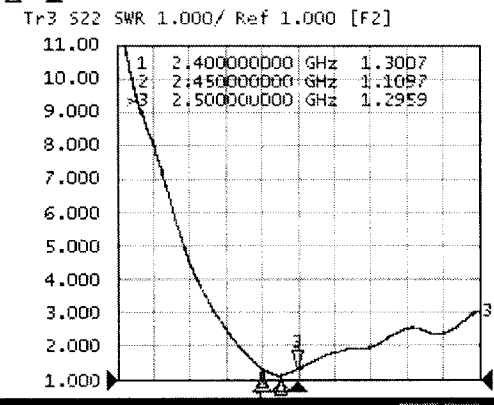
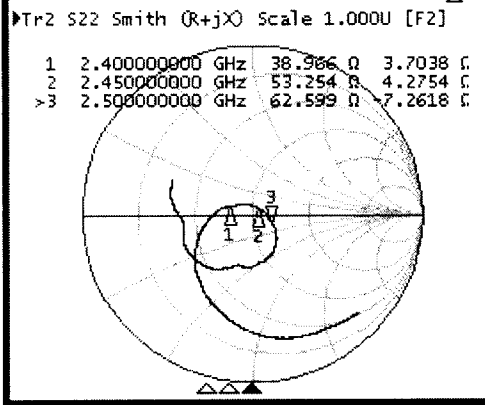
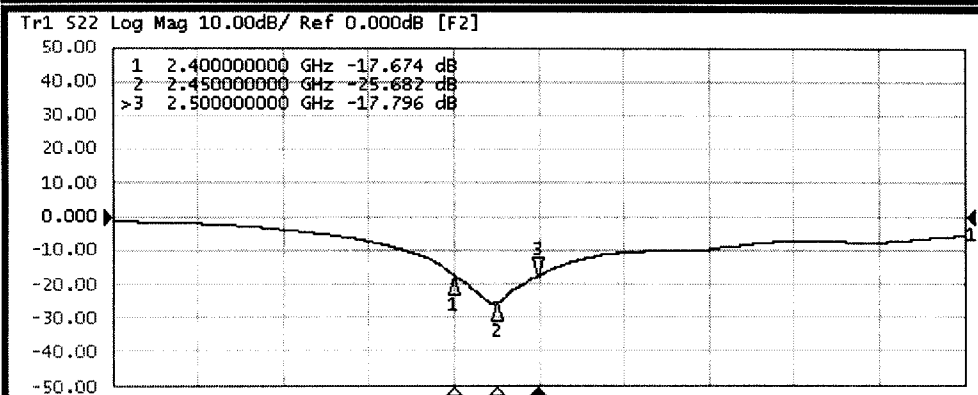
X1 m/m SHEET : 1/1



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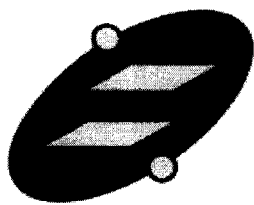
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WITHOUT THE WRITTEN CONSENT OF WHA YU.



1 Start 2 GHz IFBW 70 kHz Stop 3 GHz

- System
- Abort Printing
- Printer Setup
- Invert Image ON
- Dump Screen Image
- E5091A Setup
- Misc Setup
- Backlight ON
- Firmware Revision

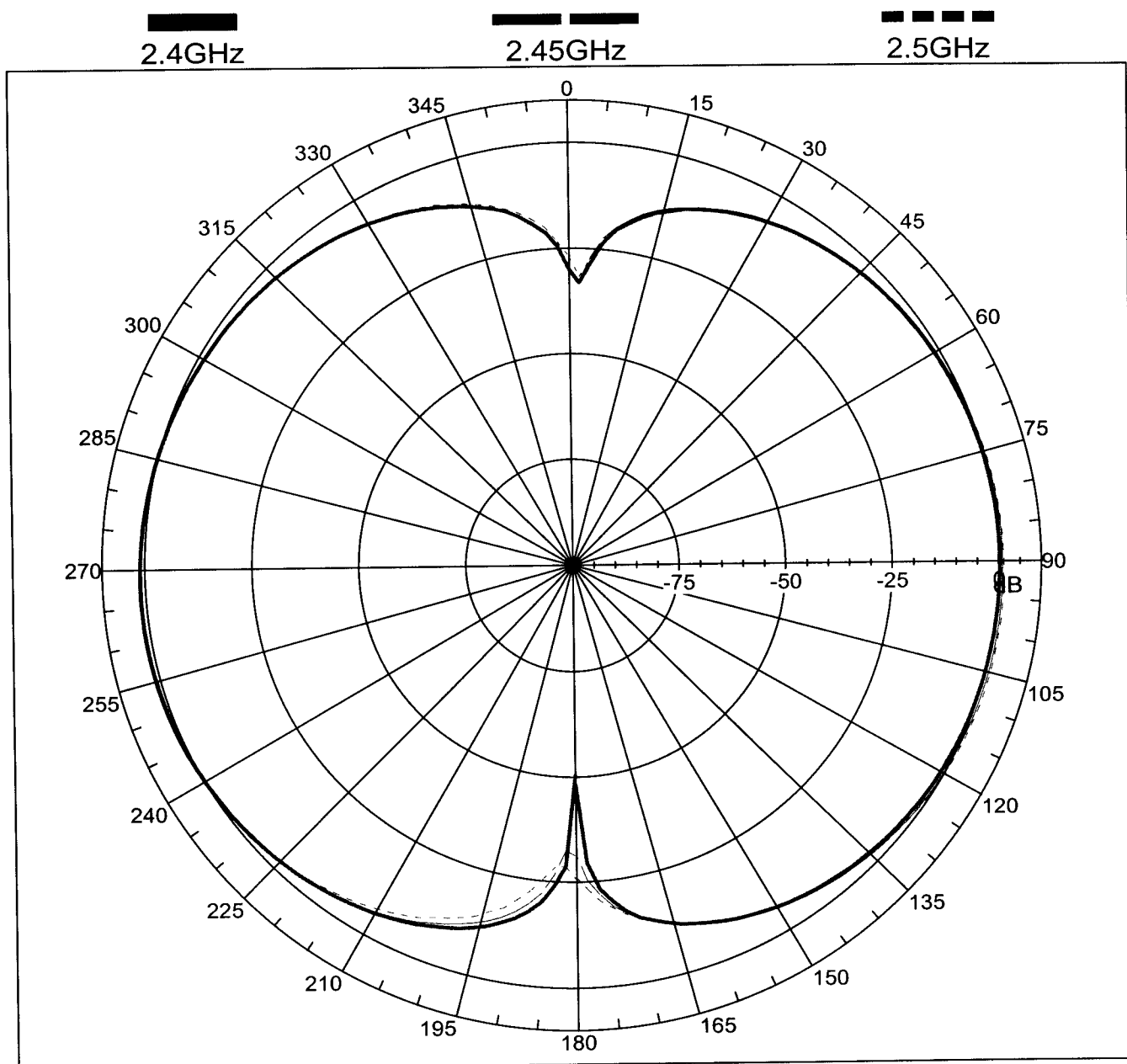


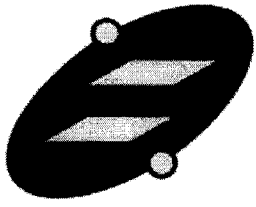
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WHA YU INDUSTRIAL CO., LTD

C449-510006-A

Far-field amplitude of 2.4GHz small dipole antenna-E-plane.nsi



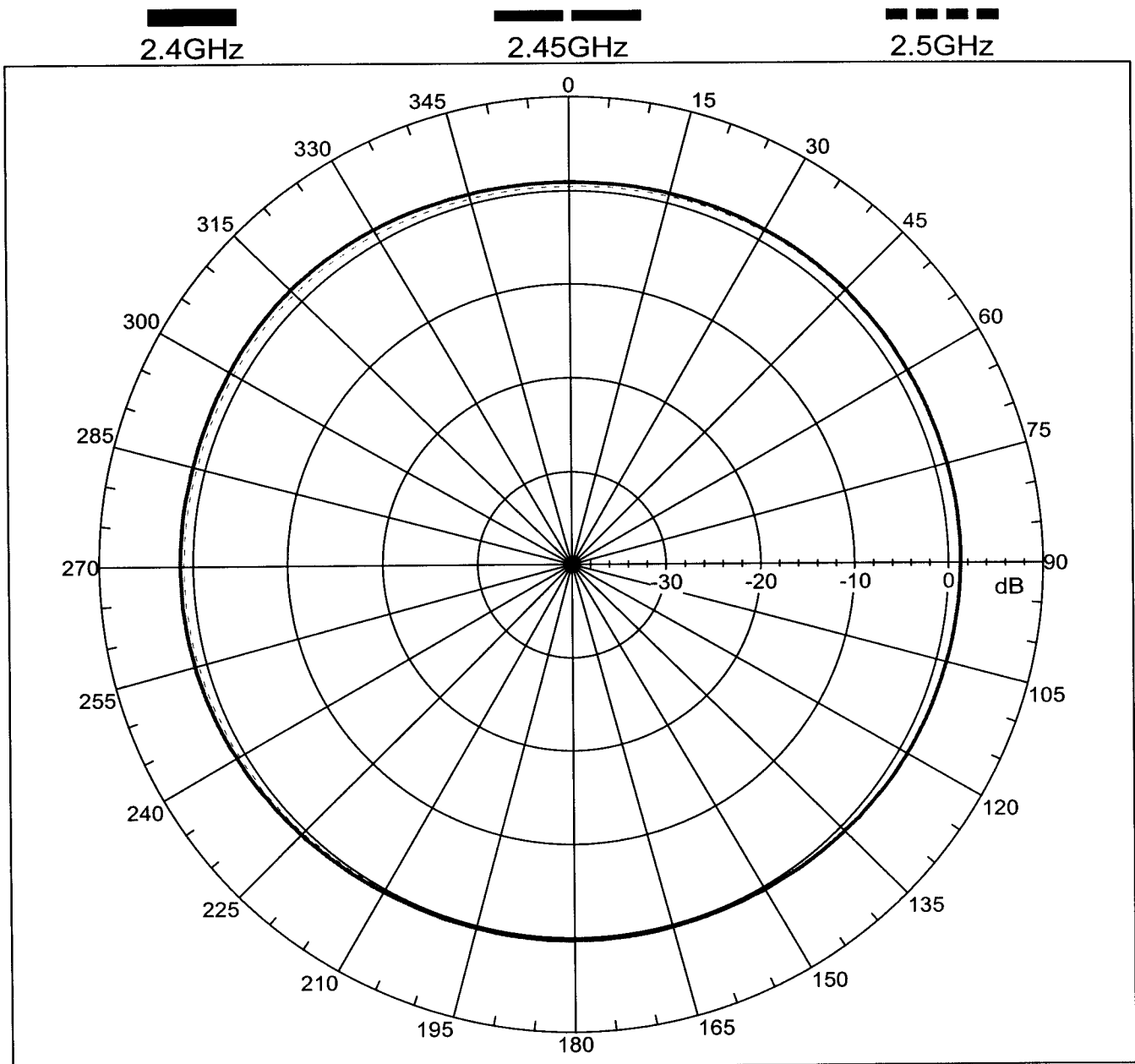


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WHA YU INDUSTRIAL CO., LTD

C449-510006-A

Far-field amplitude of 2.4GHz small dipole antenna-H-plane.nsi

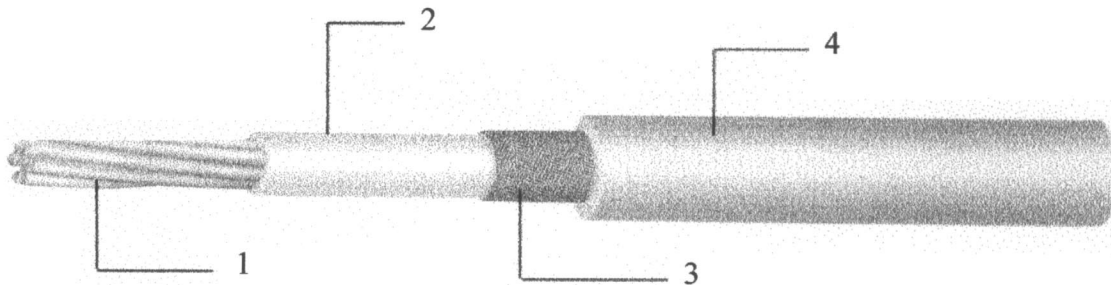


RG 178 B/U	FEP INSULATED HIGH-FREQUENCY COAXIAL CABLE	PAGE	1 / 2
PRODUCT STANDARD		ISSUED	21. Oct. 2003
		REVISED	

I - Scope

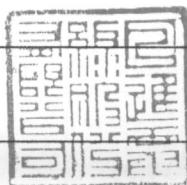
This specification presents a FEP insulated high-frequency coaxial cable AWG 30, 1.8 mm O.D. for internal wiring of electronic equipment, such as Computer / Notebook with wireless communication systems.

II - Construction



Item		Unit	Details
1. Inner Conductor	Material	—	CP-AG
	Composition	No./mm	AWG 30 or 7 × 0.1
	Dia. (approx.)	mm	0.305
2. Dielectric	Material	—	Extruded FEP
	Nom. O.D.	mm	0.84 ± 0.05
	Color	—	Natural
3. Outer Conductor	Material	—	Silver coated copper
	Composition	—	Braided (16 / 3 / 0.1)
	Dia. (approx)	mm	1.29 ± 0.07
4. Jacket	Material	—	Extruded FEP
	Dia.	mm	1.80 ± 0.08
	Color	—	Standard color is Light Orange

Note :



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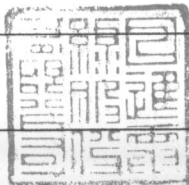
Shen Bin Chao
Shen Bin Chao

RG 178 B/U	FEP INSULATED HIGH-FREQUENCY COAXIAL CABLE	PAGE	2 / 2
PRODUCT STANDARD		ISSUED	21. Oct. 2003
		REVISED	

III – Characteristics

Item	Unit	Specified Value	Note
Temperature Rating	°C	-55 ~ +200	
Voltage Lasting	V	1000	
Dielectric strength	—	Dielectric core: No breakdown at AC 3 kv for 0.2 sec.	Spark test
		Jacket: No breakdown at AC 3 kv for 0.2 sec.	Spark test
Characteristic Impedance	Ω	50 ± 2	TDR method
Capacitance	pF / ft	29.4	
Attenuation. (Max.)	dB/100ft	16.0	100.0 MHz
		33.0	400.0 MHz
		52.0	1.0 GHz
		94.0	3.0 GHz
Approx. Weight	g / m	7.68	

Note :



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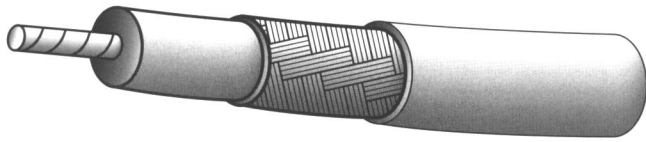
Chuebe Lin

APPROVALS

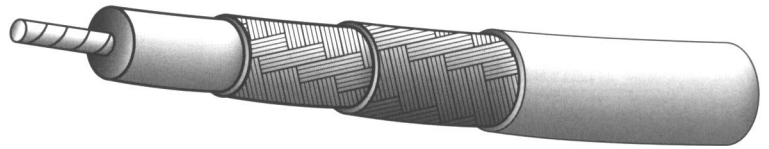
Shen Bin Chao

Mil-C-17 Coaxial Cable QPL Approved

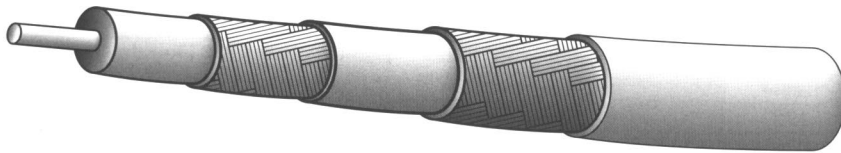
Single braid



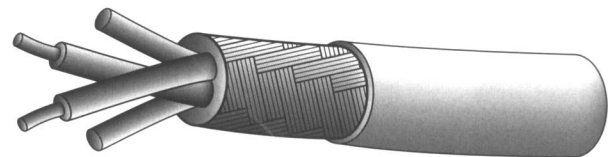
Double braid



Triax



Twinax



Harbour supplies a complete line of high temperature, high performance QPL approved MIL-C-17 coax cables for the military, commercial and industrial applications. The specific M17 constructions referenced are manufactured in accordance with the most recent revision of the MIL-C-17 specification. The MIL-C-17 specification defines complete physical and electrical characteristics for each M17 part number, including dimensional parameters, dielectric materials, shield construction, maximum attenuation, and VSWR levels.

VSWR Sweep Testing

When selecting a 50 ohm coaxial cable, constructions with VSWR requirements are recommended. Manufacturing and sweep testing cables with concern for VSWR ensures a quality cable free of spikes over the referenced frequency range. (Note the test frequencies specified in the electrical characteristics section.)

Precision PTFE Dielectrics

All of the high temperature, high performance coax cables listed have PTFE dielectrics with high dielectric strength and low capacitance in proportion to the dielectric constant. All PTFE dielectrics are manufactured with tolerances tighter than the MIL-C-17 specification to ensure uniformity of electrical characteristics, especially impedance, attenuation and VSWR.

Tape wrapped PTFE Constructions

Harbour also manufactures PTFE tape wrapped cables to a previous revision of the MIL-C-17 specification. These constructions can withstand operating temperatures up to 250° C. versus 200° C. for FEP jacketed cables. Also, PTFE tape wrapped cables are generally more flexible than their FEP jacketed counterparts.

UL Approvals

All of Harbour's M17 part numbers manufactured to the MIL-C-17 specification may be ordered with UL and FT4 approvals.