

模造品/零組件承認申請表

 文管編號: RBS9408055

☐ GP ☒ RoHS (☒ 單一物料 ☐ 系列承認) ☐ 一般物料 計劃負責人: 賴淑珍
☒ NEW APPROVAL ☐ RE-SUBMIT: ☐ SECOND SOURCE: (原因: _____)

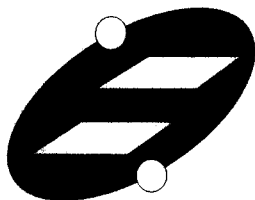
 承認單位: ☐ 寬頻 ☐ 數位家庭 ☐ 電信 ☐ 無線通訊 事業處 _____ 部

☒ 設計管理部 ☐ 業務/產品管理部 ☐ 產品工程部 ☐ 其他: _____ 部

*原 料 號	<u>2365-00001004R</u>	*新 料 號	
品 名	ROHS ANTENNA TNC C120-510162-A 2.4GHz 1.8dBi L=142mm COLOR=BLACK ZINC-ALLOY WHA YU	品 名	
製 造 商	譚裕 DA149	製 造 商	
原 供 應 商	譚裕 DA149	送 樣 廠 商	
型 號	C120-510162-A	型 號	
適 用 機 種	WRT54G V5	* 確認適用機種	
送 樣 順 序	驗 證 項 目	會 簽 意 見	
一. 研發處 ☐ 研發處 ☒ 設計管理部 ☐ 業務/產品管理部 ☐ 產品工程部	1. 尺寸。 2. <u>全特性</u> 3. _____ 適用 範 圍	◎判定: ☒ 合格 ☐ 不合格 ☐ 條件性的承認 _____ ◎說明: ☐ 是否需製造部試裝或會簽 ☐ 是否需研發原計劃工程師會簽 ☐ 是否需業務/產品管理部會簽 簽章: <u>沈士紘</u>	
二. 會簽單位 ☐ 產品工程部 ☐ 研發原計劃人 ☐ 業務/產品 ☐	1. _____ 2. _____ 3. _____ 適用 範 圍	◎判定: ☒ 合格 ☐ 不合格 ☐ 其他 ◎說明 <u>黃姓有(2A)</u> 主管: _____ 簽章: _____	
三. 送樣單位 ☐ 研發處 ☒ 設計管理部 ☐ 採購部	● 提供樣品日期: 08/17/05 ● 索取樣品數量: <u>2</u> PCS ● 索取量試數量: _____ PCS 主 管: <u>黃姓有</u> 填表人: <u>沈士紘</u>	☒ 研發處 ☒ 合格 ☐ 不合格 ☐ 產品工程部 ☐ 合格 ☐ 不合格 ☐ 業務/產品管理部 ☐ 合格 ☐ 不合格 ☐ 設計管理部 ☐ 合格 ☐ 不合格 主管: <u>沈士紘</u>	
代用料備註欄	代用機種		

1. * 由研發部填寫
2. 送承認物料須為合格供應商。
3. 送樣流程: 1st: 設計管理部/研發處/業務/產品管理部→D.C.C.
2nd & 替代料: 採購部 → 產品工程部/研發處/業務/產品管理部/設計管理部→D.C.C
4. 承認書分發單位: DCC
5. 環保(GP/RoHS)零組件需檢附零件承認書與環保(GP/RoHS)相關文件 Hard copy 與電子檔各一份。
6. 附件一的環保保證書(共 2 頁)需為供應商簽名蓋章之正本。

研 發 部



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: 建漢科技股份有限公司

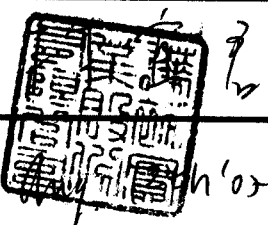
PART NAME: RF Antenna Assembly

PART NO.:

REVISION:

W. Y. P/NO.: C120-510162-A

REV.: X2

	MANUFACTURER SIGNATURE	CUSTOMER SIGNATURE
APPROVED BY :		
DATE :		

WHA YU GROUP

WHA YU INDUSTRIAL CO., LTD.(HEAD OFFICE)

譚裕實業股份有限公司

Address: No.326, Sec 2, Kung Tao 5 Road, Hsin Chu City, Taiwan, R.O.C.

Tel:+886-3-5714225(REP.)

Fax:+ 886-3-5713853 · + 886-3-5723600

TAI HWA ELECTRONIC CO., LTD. (CHINA)

台樺電業製品廠

Address: Pak Ho District, Hui Street Town, Dong Guan City, Guangdong, China

Tel: + 86-769-5599375 · + 86-769-5912375

Fax: + 86-769-5599376

HUA HONG INTERNATIONAL LTD.

華弘國際有限公司

Rm.1103A,President Commercial Centre,608 Nathan Road,Mong Kok,Kowloon,Hong Kong

Tel: + 86-852-27712210

Fax: + 86-852-23843747

SHANGHAI HUA YU ELECTRONIC CO., LTD. (CHINA)

上海譚裕電子有限公司

Address:3586,Wai Qing Song Road, Qing Pu County, Shanghai China

Tel: + 86-21-59741348 · + 86-21-59744101~4

Fax: + 86-21-59741347

SU ZHOU AEON TECH CO., LTD. (CHINA)

蘇州華廣電通有限公司

Address:Limin North Road, LiLi Town,LiLi Industrial Park,LinHu Economic Zone

Wujiang City,Jiangsu Province,China

Tel: + 86-512-63627980

Fax: + 86-512-63627981

Contents

<i>Item</i>	<i>Description</i>	<i>Page</i>
1.	天線規格表	 1
2.	成品圖	 2
3.	測試報告	 3~5
4.	Cable 規格	 6~9
5.	零組件環境管理物質驗證.....	

RF Antenna Cable Assembly

Specification

1. Electrical Properties :

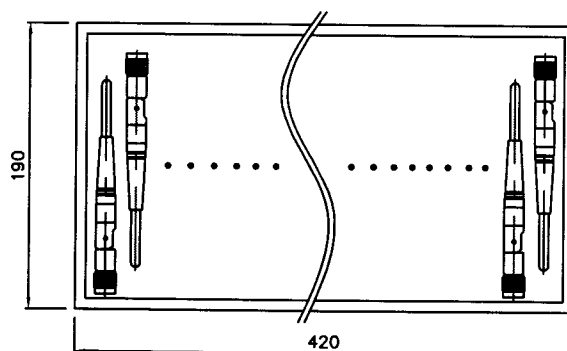
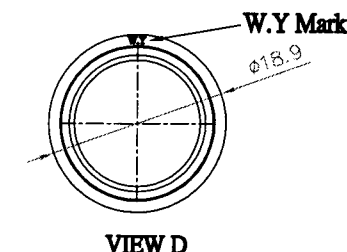
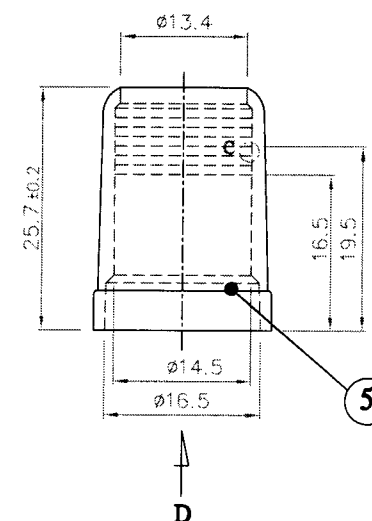
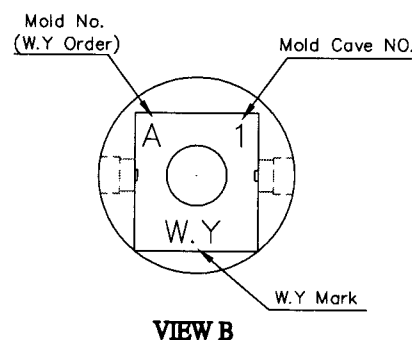
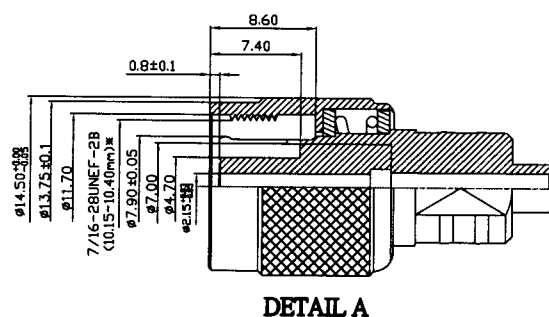
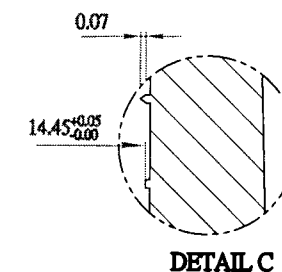
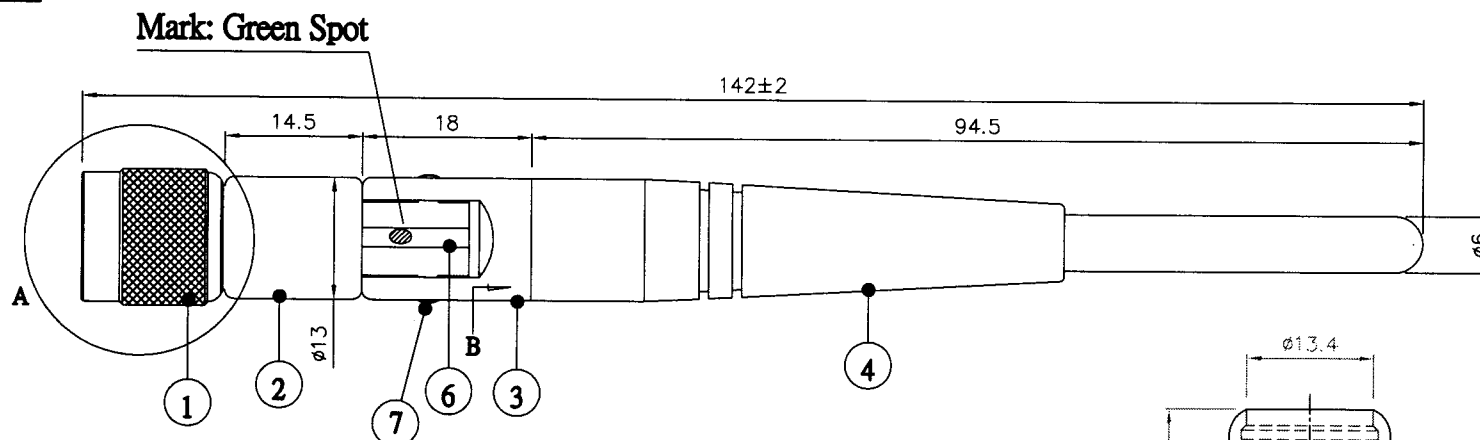
- 1.1 Frequency Range.....2.4GHz ~ 2.5GHz
- 1.2 Impedance 50Ω Nominal
- 1.3 VSWR1.92 Max.
- 1.4 Return Loss.....-10 dB Maximum
- 1.5 Electrical Wave.....1/2λDipole
- 1.6 Gain(peak).....2 dBi
- 1.7 Admitted Power..... 1W

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 ~ +65
- 2.6 Storage Temp.-30 ~ +75
- 2.7 ColorBlack
- 2.8 Connector.....TNC Plug Reverse
- 2.9 Connector Material..... ANG Zinc

CG-

REV	DATE	DESCRIPTION
X1	5/31-2005	New Issue
X2	8/8-2005	Modify cap material



**Note:1.TNC Plug Torque:200-500g-cm
(assembly with TNC JACK CABLE)**

**2. *for customer request, the finish product OD.
DIM. need to match the metric specification.**

7	Rivet	POM ; Color : Black	2	
6	Cable	RG-178 Cable	1	
5	Antenna Locker	TPE , Color:Black	1	
4	Antenna Cap	TPE , Color:Black	1	
3	Upper Fixed Base	PC ; Color:Black	1	
2	Bottom Fixed Base	PBT ; Color:Black	1	
1	Connector	TNC Straight Plug/Reverse	1	
NO	DESCRIPTION		QTY	REMARK

Packing: 20pcs/Tray

CUSTOMER'S SIGNATURE

XXX.	±3.0	APPROVED
XX.	±2.0	陳永琬
X.	±1.0	CHECKED
X.	±0.5	陳永琬
XX	±0.1	DRAWING
		程淑娟

CUSTOMER : 建漢科技股份有限公司

PART NO :

PARTNAME: RF Antenna Assembly

W.Y P/NO : C120-510162-A

REV	UNIT	FILE :
-----	------	--------

X2	m/m	SHEET :	1/1
----	-----	---------	-----



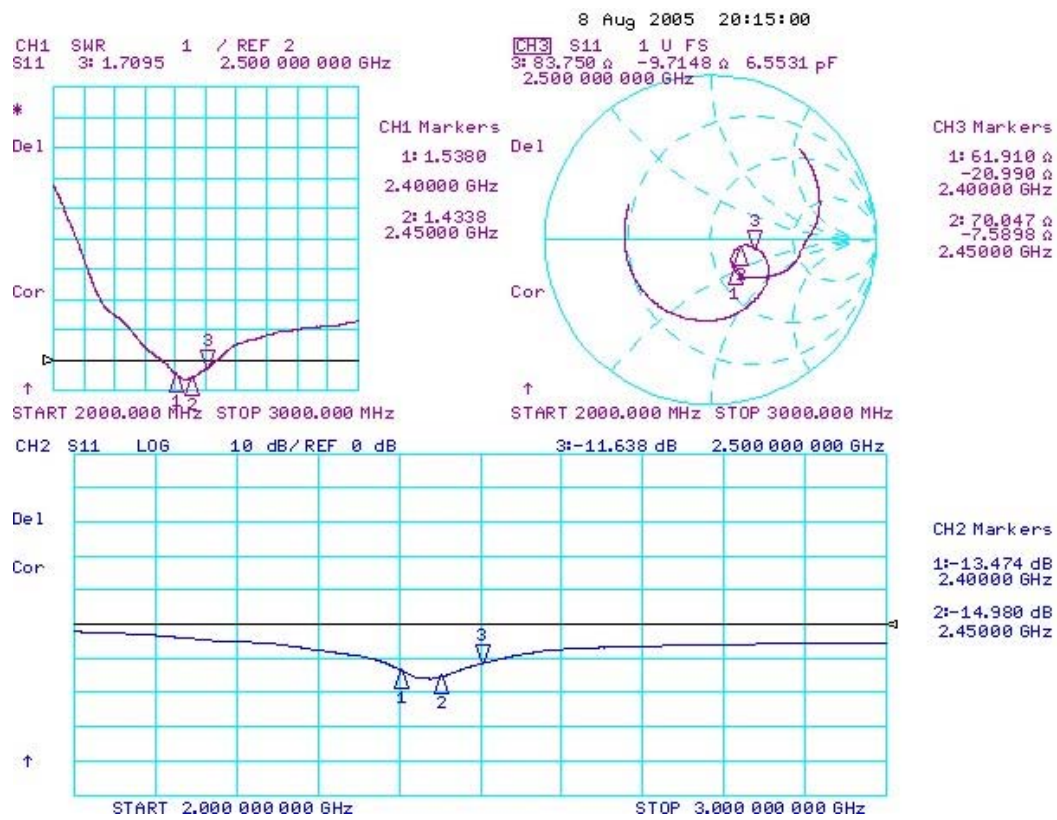
Wha Yu
INDUSTRIAL CO.,LTD.

譚裕實業股份有限公司

THIS DRAWING, AND ITS INHERENT DESIGN CONCEPTS, ARE THE PROPERTY OF WHEA YU AND AS SUCH MAY NOT BE COPIED, REPRODUCED, OR GIVEN TO THIRD PARTIES WITHOUT THE WRITTEN CONSENT OF WHEA YU.

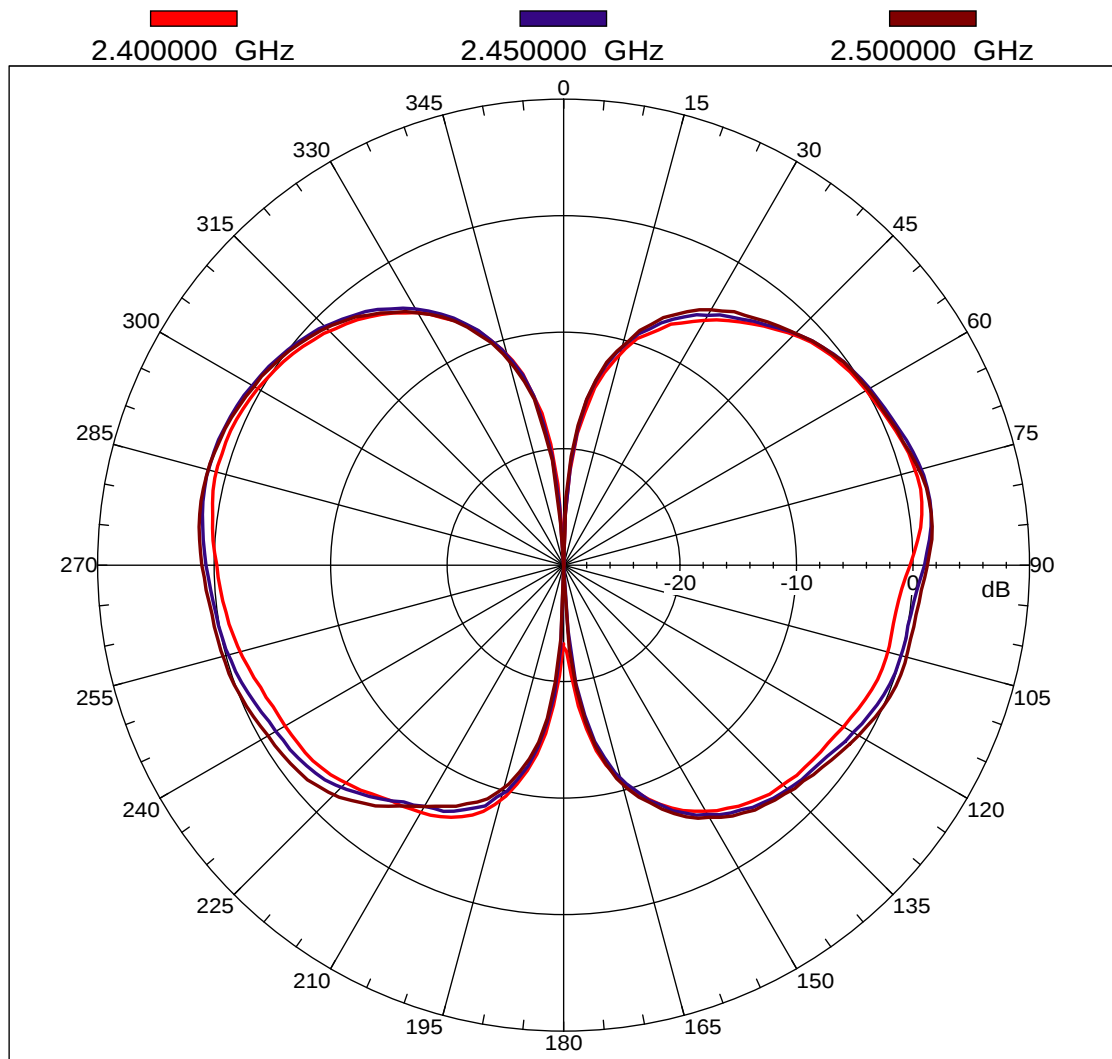


RF Antenna Assembly
P/NO :C120-510162-A SPEC : 2.4GHz



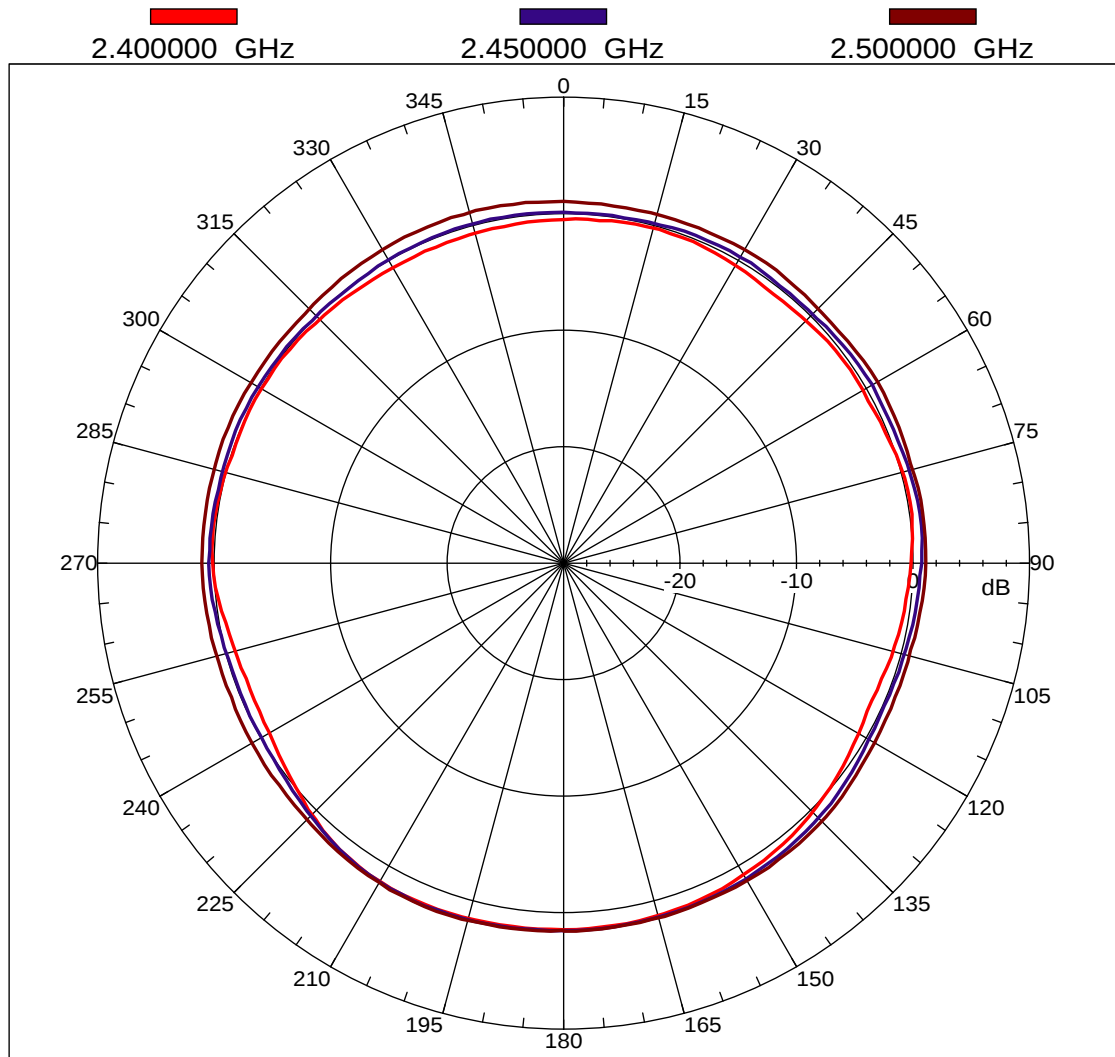
8/8/2005

Far-field amplitude of C120-510162-A-H.nsi



8/8/2005

Far-field amplitude of C120-510162-A-V.nsi



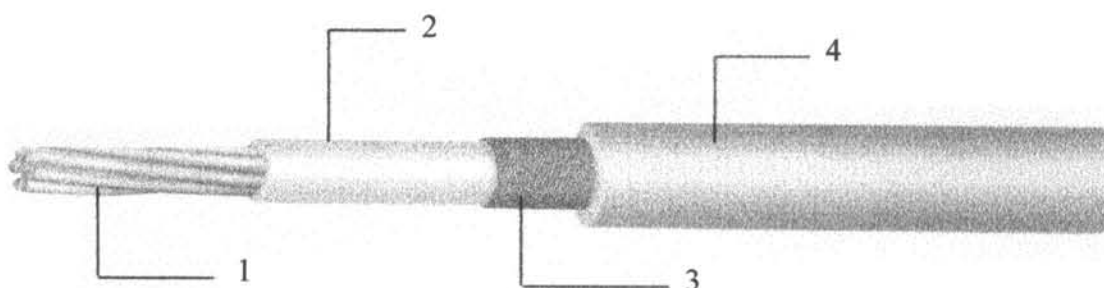
8/8/2005

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 :



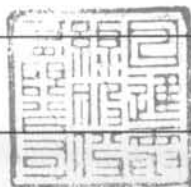
MADE BY	<i>Shen Bin Chao</i>
APPROVALS	<i>Shen Bin Chao</i>

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 :



MADE BY

APPROVALS

Hebe Lin
Shen Bin Chao

Mil-C-17 Coaxial Cable

QPL Approved

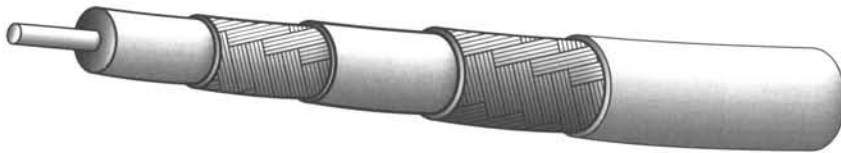
Single braid



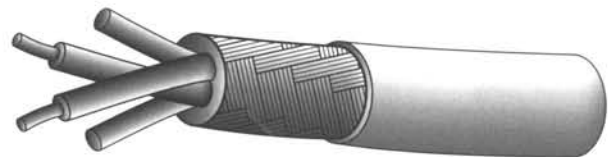
Double braid



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.

Mil-C-17 Coaxial Cables

Physical Characteristics:

M17 Number	Center Conductor	PTFE Dielectric Diameter	Shield	Jacket	Overall Diameter	Minimum Recommended Bend Radius	Operating Temp. (%C)	Weight (lbs./MFT)	Comments
M17/60-RG142	.037" SCCS	.116"	SPC(2)	FEP	.195"	1.0"	-55 +200	43.0	
M17/93-RG178	.0120"(7/.004")SCCS	.033"	SPC	FEP	.071"	0.4"	-55 +200	6.3	
M17/93-00001	.0120"(7/.004")SCCS	.033"	SPC	PFA	.071"	0.4"	-55 +230	6.3	M17/93-RG178 w/extended temp. range
M17/94-RG179	.0120"(7/.004")SCCS	.063"	SPC	FEP	.100"	0.4"	-55 +200	10.8	
M17/95-RG180	.0120"(7/.004")SCCS	.102"	SPC	FEP	.141"	0.7"	-55 +200	19.8	
M17/110-RG302	.0253"SCCS	.146"	SPC	FEP	.202"	1.0"	-55 +200	40.0	
M17/111-RG303	.037"SCCS	.116"	SPC	FEP	.170"	0.9"	-55 +200	31.0	
M17/112-RG304	.059" SCCS	.185"	SPC(2)	FEP	.280"	1.4"	-55 +200	94.0	
M17/113-RG316	.0201"(7/.0067")SCCS	.060"	SPC	FEP	.098"	0.5"	-55 +200	12.2	
M17/127-RG393	.094"(7/.0312")SC	.285"	SPC(2)	FEP	.390"	2.0"	-55 +200	165.0	
M17/128-RG400	.0384"(19/.008")SC	.116"	SPC(2)	FEP	.195"	1.0"	-55 +200	50.0	
M17/131-RG403	.0120"(7/.004")SCCS	.033"	SPC(2)	FEP(2)	.116"	0.6"	-55 +200	15.0	Triaxial M17/93-RG178
M17/152-00001	.0201"(7/.0067")SCCS	.060"	SPC(2)	FEP	.114"	0.6"	-55 +200	18.5	Double shielded M17/113-RG316
M17/158-00001	.037"SCCS	.116"	SPC(2)	FEP	.195"	1.0"	-55 +200	56.0	Unswpt M17/60-RG142
M17/169-00001	.0120"(7/.004")SCCS	.033"	SPC	FEP	.071"	0.4"	-55 +200	6.3	Unswpt M17/93-RG178
M17/170-00001	.037"(SCCS	.116"	SPC	FEP	.170"	0.9"	-55 +200	39.0	Unswpt M17/111-RG303
M17/172-00001	.0201"(7/.0067")SCCS	.060"	SPC	FEP	.098"	0.5"	-55 +200	11.5	Unswpt M17/113-RG316
M17/174-00001	.094"(7/.0312")SCCS	.285"	SPC(2)	FEP	.390"	2.0"	-55 +200	175.0	Unswpt M17/127-RG393
M17/175-00001	.0384"(19/.008")SC	.116"	SPC(2)	FEP	.390"	1.0"	-55 +200	50.0	Unswpt M17/128-RG400
M17/176-00002	.0235"(19/.005")SPA(2)	.042"	SPA	PFA	.129"	0.6"	-55 +230	18.0	Controlled impedance twinax
PTFE Tape Wrap Jacketed RG Cables									
RG 187 A/U	.0120"(7/.004)SCCS	.063	SPC	PTFE	.100"	0.5"	-55 +250	10.0	Flexible, 250° C. rated
RG 188 A/U	.0201"(7/.0067)SCCS	.060	SPC	PTFE	.100"	0.5"	-55 +250	11.0	Flexible, 250° C. rate
RG 195 A/U	.0120"(7/.004)SCCS	.102	SPC	PTFE	.141"	0.7"	-55 +250	18.0	Flexible, 250° C. rate
RG 196 A/U	.0120"(7/.004)SCCS	.034	SPC	PTFE	.067"	0.4"	-55 +250	6.0	Flexible, 250° C. rated

Electrical Characteristics:

M17 Number	Impedance (ohms)	Capacitance (pF/ft)	Max. Operating Voltage (RMS)	Maximum attenuation (dB/100ft) @						Max Frequency (GHz)
				100 MHz	400 MHz	1 GHz	3 GHz	5 GHz	10 GHz	
M17/60-RG142	50 +/- 2	29.4	1900	5.5	11.7	19.0	35.0	48.0	-	17.4
M17/93-RG178	50 +/- 2	29.4	1000	16.0	33.0	52.0	94.0	-	-	3.0
M17/93-00001	50 +/- 2	29.4	1000	16.0	33.0	52.0	94.0	-	-	3.0
M17/94-RG179	75 +/- 3	19.4	1200	-	21.0	-	-	-	-	-
M17/95-RG180	95 +/- 5	16.4	1500	-	17.0	-	-	-	-	-
M17/110-RG302	75 +/- 3	19.4	2300	-	8.0	-	26.0	-	-	-
M17/111-RG303	50 +/- 2	29.4	1900	3.9	8.0	15.0	28.0	-	-	-
M17/112-RG304	50 +/- 3	29.4	3000	2.7	6.4	11.1	22.0	30.0	-	8.0
M17/113-RG316	50 +/- 2	29.4	1200	11.0	21.0	38.0	58.0	-	-	3.0
M17/127-RG393	50 +/- 2	29.4	2500	2.4	5.0	8.8	18.0	24.6	37.0	11.0
M17/128-RG400	50 +/- 2	29.4	1900	4.5	10.5	17.0	38.0	50.0	78.0	12.4
M17/131-RG403	50 +/- 2	29.4	1000	-	37.0	-	-	-	-	10.0
M17/152-00001	50 +/- 2	29.4	1200	11.5	24.0	40.0	75.0	110.0	170.0	12.4
M17/158-00001	50 +/- 2	29.4	1900	-	9.5	-	-	-	-	-
M17/169-00001	50 +/- 2	29.4	1000	-	29.0	-	-	-	-	-
M17/170-00001	50 +/- 2	29.4	1900	-	8.6	-	-	-	-	-
M17/172-00001	50 +/- 2	29.4	1200	-	21.0	-	-	-	-	-
M17/174-00001	50 +/- 2	29.4	2500	-	5.0	-	-	-	-	-
M17/175-00001	50 +/- 2	29.4	1900	-	10.5	-	-	-	-	-
M17/176-00001	77 +/- 7	19.0	1000	-	-	-	-	-	-	-
PTFE Tape Wrap Jacketed RG Cables										
RG 187 A/U	75 +/- 3	19.4	1200	-	21.0	-	-	-	-	3
RG 188 A/U	50 +/- 2	29.4	1200	11.0	21.0	38.0	58.0	-	-	3
RG 195 A/U	95 +/- 5	15.4	1500	-	17.0	-	-	-	-	3
RG 196 A/U	50 +/- 2	29.4	1000	-	29.0	-	-	-	-	-

"Maximum frequencies" are those as referenced on individual slant sheets of the MIL-C-17 specification. No values are given for unswept constructions as the specification recommends these cables should not be used above 400 MHz. (All figures referenced above are nominal unless otherwise specified.)

物質安全資料表
Material Safety Data Sheet (MSDS)

1. 廠商資料 (Manufacturer Information)

廠商名稱： (Name)	聯裕實業有限公 司	聯絡電話： (Telephone No.)	03-5714225	聯絡傳真： (Fax No.)	03-5713853
-----------------	--------------	--------------------------	------------	--------------------	------------

2. 辨識資料 (Hazardous Ingredient/Identity Information)

物品中(英)文名稱(Material Name)：

危害性成份 (Hazardous Component)				吸收途徑 (Route of Entry)
中(英)文名稱 (Name)	化學式 (Chemical Formula)	含量 (Concentration (%))	CAS NO.	
鉛 (CONN)	Pb	24600 PPM		
鎘 (CONN)	Cd	22 PPM		
鉛 (CONN)	Pb	14 PPM		
鉛 (Base)	Pb	20.9 PPM		
鉛 (Ground Tube)	Pb	44 PPM		

3. 物理、化學特性及反應特性 (Physical/Chemical Characteristics and Reactivity Data)

物質狀態： (Physical Condition)	糊狀物： (Viscous Paste)	粉末： (Powder)	☒ 固體： (Solid)	比重： $(H_2O=1)$ (Specific Gravity)
	液體(Liquid)：	氣體(Gas)：	氣味 (Odor)：	
安定性：(Stabilization)	☒ 安定 (Stable)	應避免之狀況： (Conditions to avoid)		
	不安定 (Unstable)			
危害之聚合： (Hazardous Polymerization)	可能發生 (May Occur)	應避免之狀況： (Conditions to avoid)		
	☒ 不會發生 (Will Not Occur)			

4. 健康危害及急救措施 (Health Hazards and Emergency/First Aid Procedure)

進入人體之途徑：(Entry Route)	吸收(Inhalation)：	皮膚接觸(Skin)：	☒ 吞食(Ingestion)
健康危害效應：(Health Hazards)			
緊急處理及急救措施：(Emergency and First Aid Procedure)			

5. 暴露預防措施 (Precautions for Exposure)

個人防護措施： (Personal protection measures)	呼吸：(Respiratory)
	手套：(Protective Gloves)
	其他：(Others Precaution)
通風設備：(Ventilation Equipment)	

操作與儲存注意事項：(Precautions to Be Taken in Handling and Storing)

6. 洩漏、廢棄處理及火災處理

(Precautions for Material Released/Spilled, Waste Disposal and Fire Fighting Procedure)

洩漏之緊急應變：(Steps to be taken in case material is Released or Spilled)

廢棄處理方法：(Waste Disposal Method)

初期火災(2分鐘內)：(Fire accident (Early Stage; Within 2 min.))

晚期火災(2分鐘後)：(Fire accident (Late Stage; Over 2 min.))

核準： (Approved by)	林育良 2005/08/10	審核： (Checked by)	林育良 2005/08/10	填表： (Filled in)	黃惠真	日期： (Date)	2005/08/18
----------------------	-------------------	---------------------	-------------------	--------------------	-----	---------------	------------

Test Report

No. SH517723/CHEM

Date: 4.14.2005

Page 1 of 4

FLUOTECH INDUSTRIES CO., LTD.
NO.26, DIN HU 2ST, KNEI-SHAN, TAO YUAN, TAIWAN

The following sample(s) was/were submitted and identified on behalf of the applicant as:

Sample Name : PTFE ROD
SGS Ref No. : SHEC0050305667
Model : 10mm STICK
Material : PTFE

Sample Receiving Date : March 31, 2005
Testing Period : March 31 to April 14, 2005

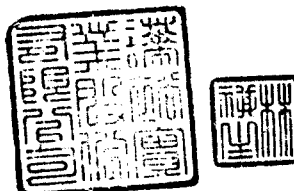
Test Requested : 1) *To determine the Cadmium Content of the submitted sample.
2) *To determine the Lead content of the submitted sample.
3) *To determine Mercury Content of the submitted sample.
4) *To determine Hexavalent Chromium content of the submitted sample.
5) *To determine the PBBs(Polybrominated biphenyls) PBBEs(PBDEs)
(Polybrominated biphenyl ethers) Content of the submitted sample.
6) *To determine the PCBs(Polychlorinated Biphenyls) Content of the submitted sample.
7) *To determine the Mirex(CAS NO:002385-85-5) Content of the submitted sample.
8) ***As specified by Client, to detection and determination of certain listed aromatic amines
derived from Azo Colorants (EN14362-2:2003).

Test method/Test Results: Please refer to next page

Conclusion : 8) *** According to the analysis as carried out, azo colorants which can release one
or more of certain listed amines by cleavage of their azo group/s were not
detected in the commodity submitted.

Signed for and on behalf of
SGS-CSTC Chemical Laboratory

Elia Zhang
Supervisor



This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf or attached. Said Conditions are also available upon request or are accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification and jurisdictional policies defined therein. The results shown in this Test Report refer only to the sample(s) tested unless otherwise stated and such sample(s) are retained for 30 days only. This Test Report shall not be reproduced except in full, without written approval of the Company.

SHCH 243801

Test Report

No. SH517723/CHEM

Date: 4.14.2005

Page 2 of 4

Test method

- 1) * ICP-AES after reference to EN 1122, method B:2001 or other acid digestion.
- 2) * ICP-AES after reference to US EPA 3050B or other acid digestion.
- 3) * ICP-AES after reference to US EPA 3052 or other acid digestion.
- 4) * UV-VIS after reference to US EPA 3060A.
- 5) * With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)
- 6) * With reference to US EPA 8082, Analysis was performed by GC/MS.
- 7) * Analysis was performed by GC/MS.
- 8) *** Extraction test on coloured textile - Detection of the use of certain azo colorants in fibres with extractable dyes with the use of Gas Chromatographic Mass Spectrometry (GC-MS) / Thin Layer Chromatography (TLC) Technique.

Test Results

No.	Test Item(s):	Unit	MDL	Result
				A
1	Cadmium (Cd) *	ppm	2	N.D.
2	Lead (Pb) *	ppm	2	N.D.
3	Mercury (Hg) *	ppm	2	N.D.
4	Hexavalent Chromium (Cr VI) *	ppm	2	N.D.

5) * PBBs (Polybrominated biphenyls) PBDEs (PBDEs) (Polybrominated biphenyl ethers) Content

Test Item(s):	Unit	MDL	Result
			A
Monobromobiphenyl	%	0.0005	
Dibromobiphenyl	%	0.0005	N.D.
Tribromobiphenyl	%	0.0005	N.D.
Tetrabromobiphenyl	%	0.0005	N.D.
Pentabromobiphenyl	%	0.0005	N.D.
Hexabromobiphenyl	%	0.0005	N.D.
Heptabromobiphenyl	%	0.0005	N.D.
Octabromobiphenyl	%	0.0005	N.D.
Nonabromobiphenyl	%	0.0005	N.D.
Decabromobiphenyl	%	0.0005	N.D.
Total	%	-	N.D.
PBBs (Polybrominated biphenyls)/Sum of above			
Monobromobiphenyl ether	%	0.0005	N.D.
Dibromobiphenyl ether	%	0.0005	N.D.
Tribromobiphenyl ether	%	0.0005	N.D.
Tetrabromobiphenyl ether	%	0.0005	N.D.

This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf or attached. Said Conditions are also available upon request or are accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification and jurisdictional policies defined therein. The results shown in this Test Report refer only to the sample(s) tested unless otherwise stated and such sample(s) are retained for 30 days only. This Test Report shall not be reproduced except in full, without written approval of the Company.

SGS (Société Générale de Surveillance) S.A.
Société à responsabilité limitée

1, rue de la Gare, 92, le 3^e étage, No. 888, Yuhuan Road, Xuhui District, Shanghai, China 200233 | +86 21 6495 1616*2822 | +86 21 6450 0314
中国上海徐汇区宜山路888号3号楼1层712室 邮编: 200233 | +86 21 6495 1616*2822 | +86 21 6450 0314 www.cn.sgs.com

Member of the SGS Group (Société Générale de Surveillance)

Memorandum of the SCS Group, Society for the Study of Surveillance

Test Report

No. 9H517723/CHEM

Date: 4.14.2005

Page 4 of 4

	4,4'-methylenedi-o-toluidine		
14.	p-cresidin/6-methoxy-m-toluidine	120-71-8	n.d.
15.	4,4'-methylen-bis-(2-chloro-aniline)/ 2,2'-dichloro-4,4'-methylene-dianiline	101-14-4	n.d.
16.	4,4'-oxydianiline	101-80-4	n.d.
17.	4,4'-thiodianiline	139-65-1	n.d.
18.	o-toluidine/2-aminotoluene	95-53-4	n.d.
19.	2,4-toluylendiamin/ 4-methyl-m-phenylenediamine	95-80-7	n.d.
20.	2,4,5-trimethylaniline	137-17-7	n.d.
21.	4-aminoazobenzene	60-09-3	n.d.
22.	o-anisidine/ 2-methoxyaniline	90-04-0	n.d.
23.	2,4-Xylidin	95-68-1	n.d.
24.	2,6-Xylidin	87-62-7	n.d.

Overall Rating

PASS

Note :

n.d. = not detectable

Detection Limit = 5 ppm (mg/kg)

Requirement: no relevant amine exceeding 30 ppm (mg/kg).

Forbidden Arylamines for Azo Dye Regulations

1) No. 1-22-Commission of the European Communities: Directive 2002/61/EC adopted by the Council on 19 July 2002

2) No. 1-20, 22-24- Greening Label: Oko-Tex Standard 100-2002 edition (European Countries)

Remarks : Azo colorants that are able to form 4-aminoazobenzene (CASNr: 60-09-3),

generate under the testing condition into aniline and 1, 4-phenylenediamine.

The detection of it can only be ascertained with the chemical structure of the colorant used.

Sample Description:

A. White solid

Note : ppm=mg/kg

0.01%= 100ppm

N.D. = Not detected (<MDL)

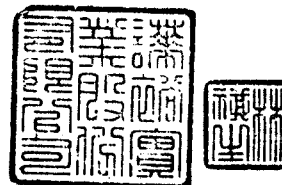
MDL= Method Detection Limit

*.= Not Applicable

***These tests were subcontracted to SGS-SHSL TEXTILE LAB (Date of testing: 2005/03/31-04/04).

* These tests were subcontracted to SGS Taiwan Ltd (Date of testing: 2005/04/04-04/14).

*** End of Report ***



This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf or attached. Said Conditions are also available upon request or are accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification and jurisdictional policies defined therein. The results shown in this Test Report refer only to the sample(s) tested unless otherwise stated and such sample(s) are retained for 30 days only. This Test Report shall not be reproduced except in full, without written approval of the Company.

157014 24-10-02

SGS SCS Standard Technical Service Co., Ltd.
Shanghai Branch, Shanghai China

1/F, 7/F, 8/F & 10/F, the 3rd Building, No. 889, Yixian Road, Xuhui District, Shanghai, China 200233
中國, 上海, 徐匯區崑山路889號3号楼7樓, 8樓, 10樓 郵政, 200233

Member of the SGS Group (Société Générale de Surveillance)

Test Report

No.: SZTYR050410520/LP

Date: APR 04, 2005

Page 1 of 2

HONG XIN YUAN INDUSTRY COMMERCE CO., LTD.
FUYING INDUSTRIAL AREA QIAO TOU VILLAGE
FUYONG TOWN, BAOAN DISTRICT SHENZHEN

Report on the submitted sample said to be 金药水

SGS Ref No. : SZ050304880EC-3.2 (GZSCR050316942/LP)
Sample Receiving Date : MAR 29, 2005
Testing Period : MAR 29, 2005 TO APR 04, 2005

Test Requested : (1) To determine the Lead, Cadmium, Mercury & Hexavalent Chromium content in the submitted sample.
(2) To determine the soluble elements content in accordance with the European Standard on Safety of Toys, EN71 Part 3: 1994 (including amendment A1:2000) – Migration of Certain Elements.

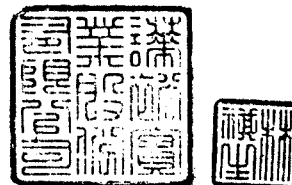
Test Method : (1) Lead content – In house method, with reference to EPA method 3050B: 1996.
Cadmium content - In house method, with reference to BS EN1122: 2001 method B
Mercury content - In house method, with reference to EPA 3052: 1996.
Hexavalent Chromium content – with reference to EPA 3060A: 1996 & EPA 7196A: 1992.
Analysis was performed by Inductively Coupled Plasma Atomic Emission Spectrometer (ICP-AES) / UV-VIS Spectrophotometer.
(2) Soluble Elements Content - with reference to EN71 Part 3 : 1994 + A1:2000.
Analysis was performed by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP-AES).

RESULTS : Please refer to next page.

Signed for and on behalf of
SGS-CSTC Ltd.



Zhang Yanzheng, Helen
Section Manager



This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf or attached. Said Conditions are also available upon request or are accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification and jurisdictional policies defined therein. The results shown in this Test Report refer only to the sample(s) tested unless otherwise stated and such sample(s) are retained for 30 days only. This Test Report shall not be reproduced except in full, without written approval of the Company.

SZL 319833

Test Report

No.: SZTYR050410520/LP

Date: APR 04, 2005

Page 2 of 2

RESULTS

(1) Lead, Cadmium, Mercury & Hexavalent Chromium Content:

	<u>Yellow liquid</u>
Lead Content (Pb)	< 2
Cadmium Content (Cd)	< 2
Mercury Content (Hg)	< 2
Hexavalent Chromium Content [Cr(VI)]	< 2

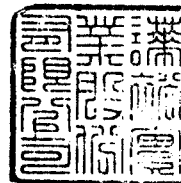
Note : - < = Less Than
- ppm = mg/L

(2) Soluble Elements Content:

<u>Element</u>	<u>Yellow liquid</u>	<u>Limit</u>
Soluble Antimony (Sb)	< 2	60 mg/kg
Soluble Arsenic (As)	< 2	25 mg/kg
Soluble Barium (Ba)	< 5	1000 mg/kg
Soluble Selenium (Se)	< 5	500 mg/kg

Note : - < = Less Than
- ppm = mg/kg

*** End of Report ***



This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf or attached. Said Conditions are also available upon request or are accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification and jurisdictional policies defined therein. The results shown in this Test Report refer only to the sample(s) tested unless otherwise stated and such sample(s) are retained for 30 days only. This Test Report shall not be reproduced except in full, without written approval of the Company.

SZTYR 050410520



Test Report

No. GZSCR041250485/LP

Date: DEC 24, 2004

Page 1 of 1

HWANG CHIANG ELECTRONICS FACTORY
LANG XIA NO.3 INDUSTRY, SONGGANG, BAOAN, SHENZHEN

Report on the submitted sample said to be 黑色镀层

SGS Ref No. : SZ041215896EC
Buyer : SONY
Manufacture/Supplier : HWANG CHIANG
Sample Receiving Date : DEC 20, 2004
Testing Period : DEC 20, 2004 TO DEC 24, 2004

Test Requested : As specified by client, to determine the Lead, Cadmium, Mercury & Hexavalent Chromium content in the submitted sample.

Test Method : Lead content - With reference to EPA method 3050B: 1996.
Cadmium content - With reference to BS EN1122: 2001 method B.
Mercury content - With reference to EPA 3052: 1996.
Hexavalent Chromium content - With reference to EPA 3060A: 1996 & EPA 7196A: 1992.
Analysis was performed by Atomic Absorption Spectrometer and Inductively Coupled Plasma Atomic Emission Spectrometer (ICP-AES) / UV-VIS Spectrophotometer.

RESULTS

Lead Content (Pb)
Cadmium Content (Cd)
Mercury Content (Hg)
Hexavalent Chromium Content [Cr(VI)]

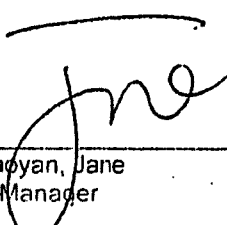
Black liquid

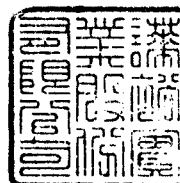
N.D.
N.D.
N.D.
N.D.

Note : - N.D. = Not Detected (< 2 ppm)
- ppm = mg/kg

*** End of Report ***

Signed for and on behalf of
SGS-CSTC Ltd.


He Xiaoyan, Jane
Tech. Manager



This Test Report is issued by the Company subject to its General Conditions of Service printed overleaf or attached. Said Conditions are also available upon request or are accessible at www.sgs.com. Attention is drawn to the limitations of liability, indemnification and jurisdictional policies defined therein. The results shown in this Test Report refer only to the sample(s) tested unless otherwise stated and such sample(s) are retained for 30 days only. This Test Report shall not be reproduced except in full, without written approval of the Company.