

承 認 書
SPECIFICATION FOR APPROVAL

客 戶
CUSTOMER

中磊電子股份有限公司

日 期
DATE

2006/5/12

品 名
DESCRIPTION

Swivel Type , 1/4 λ Dipole Antenna(white)
RP-SMA (M)

客 戶 料 號
CUSTOMER P/N

61720085WS

成 品 編 號
Part No.

TWW1592A1



萬旭電業股份有限公司

WANSHIH ELECTRONIC CO., LTD.

台北縣五股鄉五工六路 72 號 3 樓

3F 72 WU KONG 6TH RD., WU KU INDUSTRIAL DISTRICT

TAIPEI HSIEN, TAIWAN, R.O.C.

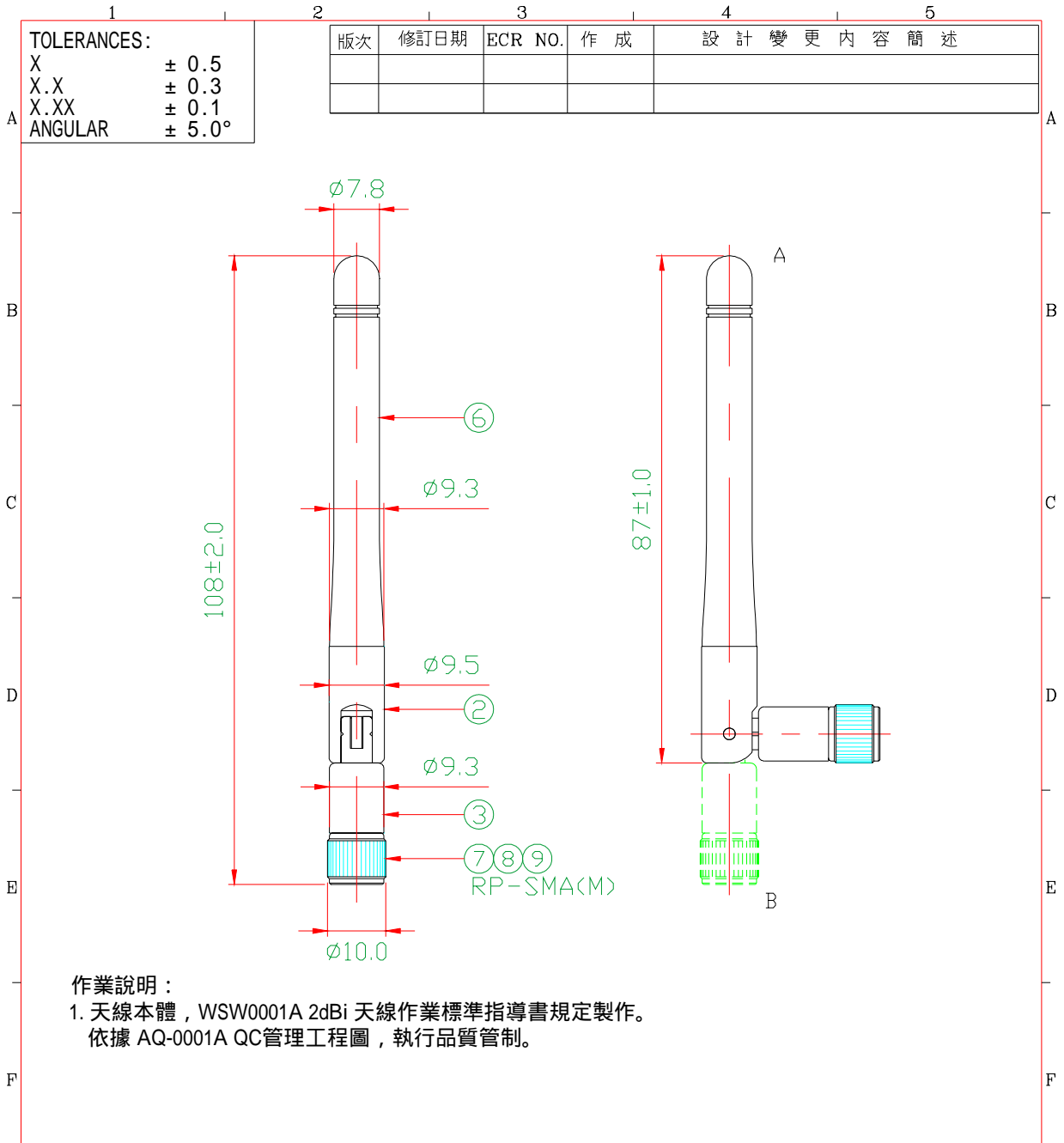
TEL : (02) 22988066 (5 LINE) FAX : (02)22981102

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SPECIFICATION

1. Description : The antenna is a Swivel Type ,
Dipole Antenna
2. Customer : 中磊電子股份有限公司
3. Model No. : WSS002
4. Part No. : TWW1592A1
5. Standard : IEEE 802.11b/g Wireless LAN
6. Antenna Profile : 108 mm (see Drawing)
7. Color : White , DuPont LS033
8. Electrical Characteristics
 - Operating Frequency : 2.4~2.5GHz
 - Antenna Type : $1/4\lambda$ Sleeve Dipole
 - Polarization Type : Linear
 - Type of Radiation : Toroidal
 - Peak Gain : 2.0 dBi Typical
 - Impedance : 50 Ohm nominal
 - V.S.W.R. : 2.0:1 Max.
9. Mechanical Characteristics
 - Connector : RP-SMA(M)
 - Core : N/A
10. Raw Material
 - Coaxial Cable : MIL-C-17 RG-178 B/U
 - Housing : TPE
 - Hinge : PC+ALLOY



TOLERANCES:

X	± 0.5
X.X	± 0.3
X.XX	± 0.1
ANGULAR	± 5.0°

版次	修訂日期	ECR NO.	作成	設計變更內容簡述

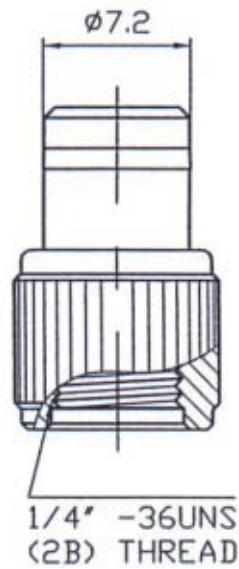
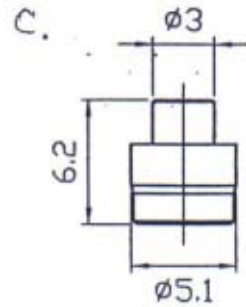
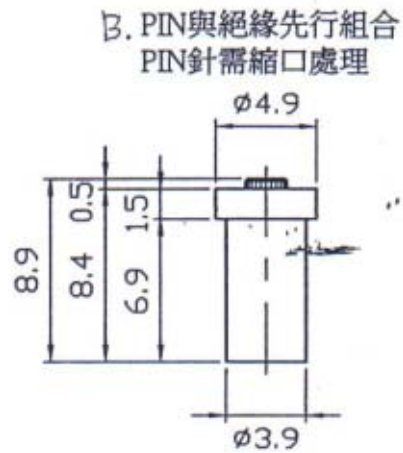
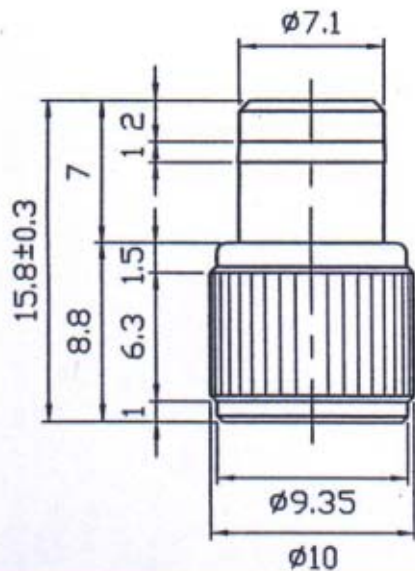
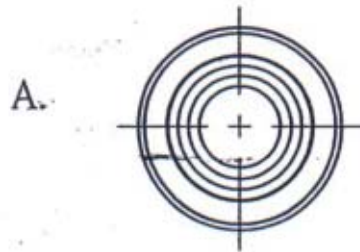
作業說明：
 1. 天線本體，WSW0001A 2dBi 天線作業標準指導書規定製作。
 依據 AQ-0001A QC管理工程圖，執行品質管制。

NO	材料名稱	環材	電腦編號	零件規格	顏色	切斷尺寸	用量	備註
9	Reverse SMA 10 本體	!	250202BA1000VD	0202B-A Body Reverse SMA 10 Connector	黑		1	或同級品
8	Reverse SMA 10 母 PIN絕緣		250062BB2000VD	0062B-B PIN+TEFLON Reverse SMA 10			1	或同級品
7	Reverse SMA 10 連接軸		250202BC1000VD	0202B-C1 銀連接軸 Reverse SMA 10 Connector	銀		1	或同級品
6	外套<白>		B093750L6790TM	@9.3 *75L(67L) 外套白<DuPont LS033>TPE	白		1	或同級品
5	銅管 L25		B0520250L00TWQ	@5.2 *25.0L*0.25T 銅管	銀		1	或同級品
4	固定鉚釘(亮鍍)		B02892200180ME	028922001-8 3.80*1.90 固定鉚釘(小)(亮鍍)	銀		2	或同級品
3	9.3 下座白		B093LS033190WT	9.3 下座白<DuPont LS033>	白		1	或同級品
2	上座白		B093200LLS03WT	@9.5 *20.0L上座白< DuPont LS033>	白		1	或同級品
1	RG-178 Coaxial Cable		19RG17800030AE	@RG-178 CABLE 105SV(萬泰)	橙	90	1	或同級品

修訂日期：		制訂日期：2006/05/11		承認圖號			
頁數：1/1	核准	審查	作成	品名		SWIVEL TYPE, 1/4 DIPOLE ANTENNA RP-SMA (M) CONNECTOR (white)	
第三角法	Ryan	Lingo	郭雅珍	成品編號		TWW1592	REV A
單位：mm						VERSION 1	
比例：FREE							

主件品名材質一覽表			
項次	品名	材質	處理
1	本體-1	銅	鍍黑鉻
2	本體-2	銅	鍍黑鋅
3	連接軸	銅	鍍銀
4	PIN	磷青銅	鍍金
5	絕緣	鐵氟龍	白色

圖號 0202B



REV	DESCRIPTION	UNIT:	MM	MATERIAL:	NAME:	RP-SMA(M) ϕ 10.0mm
\triangle x		SCALE:	3/1	FINISH:	PART NO:	0202B-承認書用
\triangle x		TOLERANCES:		DRAWN:	DATE:	05.25.2003 REV: 00
\triangle x		X	± 0.15	DESIGN:		
\triangle x		X.X	± 0.1	APPROVE:		
\triangle x		X.XX	± 0.05			
\triangle x		ANGULAR	$\pm 1.0^\circ$			

Test Report

WANSHIH ELECTRONIC CO., LTD.
3F, 72, WU KONG 6TH RD., WU KU INDUSTRIAL DISTRICT,
TAIPEI HSIEN, TAIWAN, R.O.C.

報告號碼 : CE/2005/76240
日期 : 2005/08/09
頁數 : 1 of 2

以下測試樣品乃供應廠商所提供及確認：


樣品名稱 : SMA CONNECTOR
產品型號 : RF接頭
收件日期 : 2005/07/28.
測試日期 : 2005/07/28 TO 2005/08/09

測試結果

測試部位 NO.1 : 混測金色金屬上有黑色鍍層(請參照附件圖片)

測試項目:	單位	測試方法	偵測極限值	結果
				NO.1
六價鉻	ppm	依照US EPA 3060A方法,用UV-VIS做分析	3	N.D.
鎘	ppm	依照 EN1122 方法B:2001或其他酸消化方法,用感應耦合電漿原子發射光譜儀(ICP-AES)做分析	2	42.5
汞	ppm	依照 US EPA 3052 方法或其他酸消化方法,用感應耦合電漿原子發射光譜儀(ICP-AES)做分析	3	N.D.
鉛	ppm	依照 US EPA 3050B 方法或其他酸消化方法,用感應耦合電漿原子發射光譜儀(ICP-AES)做分析	2	22536.0

備註:(1) N.D. = Not detected.(<MDL) / 未檢出(低於偵測極限值)
(2) ppm = mg/kg / 百萬分之一
(3) MDL= Method Detection Limit(偵測極限值)


Daniel Yeh, M.R. / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.

Test Report

WANSHIH ELECTRONIC CO., LTD.
3F, 72, WU KONG 6TH RD., WU KU INDUSTRIAL DISTRICT,
TAIPEI HSIEN, TAIWAN, R.O.C.

報告號碼 : CE/2005/76240
日期 : 2005/08/09
頁數 : 2 of 2



Test Report

No. SH520814/CHEM

Date: 4.15.2005

Page 1 of 2

DYNAFLUO CO., LTD
4TH FLOOR, NO.94, PAO CHUNG ROAD, HSIN TIEN CITY, TAIPEI, TAIWAN 231

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

Sample Name : WHITE PLASTIC
SGS Ref No. : SHD252258
Item No. : EXTRUSION STICK
Manufacturer : DYNAFLUO
Exported to : TAIWAN

Sample Receiving Date : April 13, 2005
Testing Period : April 13 to April 15, 2005

Test Requested : 1) To determine the Cadmium, Lead, Mercury and Hexavalent Chromium Content of the submitted sample.
2) To determine the PBBs(Polybrominated biphenyls) PBDEs(PBDEs) (Polybrominated biphenyl ethers) Content of the submitted sample.

Test method : 1) In-house Method, Analysis was performed by Inductively Coupled Argon Plasma Spectrometry or Atomic Absorption Spectrometry.
Hexavalent Chromium :With reference to US EPA3060A and US EPA7196A
2) With reference to US EPA 8081, Analysis was performed by GC/MS.

Test Results : Please refer to next page

Signed for and on behalf of
SGS-CSTC Chemical Laboratory



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SHCH 249639



Test Report

No. SH520814/CHEM

Date: 4.15.2005

Page 2 of 2

Test Results

No.	Item	Unit	MDL	Δ
1	Cadmium (Cd)*	ppm	5	N.D.
	Lead (Pb)	ppm	5	N.D.
	Mercury (Hg)*	ppm	2	N.D.
	Hexavalent Chromium (Cr VI)*	ppm	2	N.D.
2	PBBs(Polybrominated biphenyls)*	—	—	—
	PBBs(Bromobiphenyl)	ppm	5	N.D.
	PBBs(Dibromobiphenyl)	ppm	5	N.D.
	PBBs(Tribromobiphenyl)	ppm	5	N.D.
	PBBs(Tetrabromobiphenyl)	ppm	5	N.D.
	PBBs(Pentabromobiphenyl)	ppm	5	N.D.
	PBBs(Hexabromobiphenyl)	ppm	5	N.D.
	PBBs(Heptabromobiphenyl)	ppm	5	N.D.
	PBBs(Octabromobiphenyl)	ppm	5	N.D.
	PBBs(Nonabromobiphenyl)	ppm	5	N.D.
	PBBs(Polybrominated biphenyls)	ppm	5	N.D.
	PBBEs(PBDEs)(Polybrominated biphenyl ethers)*	—	—	—
	PBBEs(PBDEs)(Monobromobiphenyl ether)	ppm	5	N.D.
	PBBEs(PBDEs)(Dibromobiphenyl ether)	ppm	5	N.D.
	PBBEs(PBDEs)(Tribromobiphenyl ether)	ppm	5	N.D.
	PBBEs(PBDEs)(Tetrabromobiphenyl ether)	ppm	5	N.D.
	PBBEs(PBDEs)(Pentabromobiphenyl ether)	ppm	5	N.D.
	PBBEs(PBDEs)(Hexabromobiphenyl ether)	ppm	5	N.D.
	PBBEs(PBDEs)(Heptabromobiphenyl ether)	ppm	5	N.D.
	PBBEs(PBDEs)(Octabromobiphenyl ether)	ppm	5	N.D.
PBBEs(PBDEs)(Nonabromobiphenyl ether)	ppm	5	N.D.	
PBBEs(PBDEs)(Decabromobiphenyl ether)	ppm	5	N.D.	

(Result shown is of the total weight of sample)

Sample Description:

A. White solid stick

Note : ppm=mg/kg

MDL= Method Detection Limit

N.D. = Not detected (<MDL)

*The test results are taken from report No. SH512038/CHEM, Date: 23/03/2005

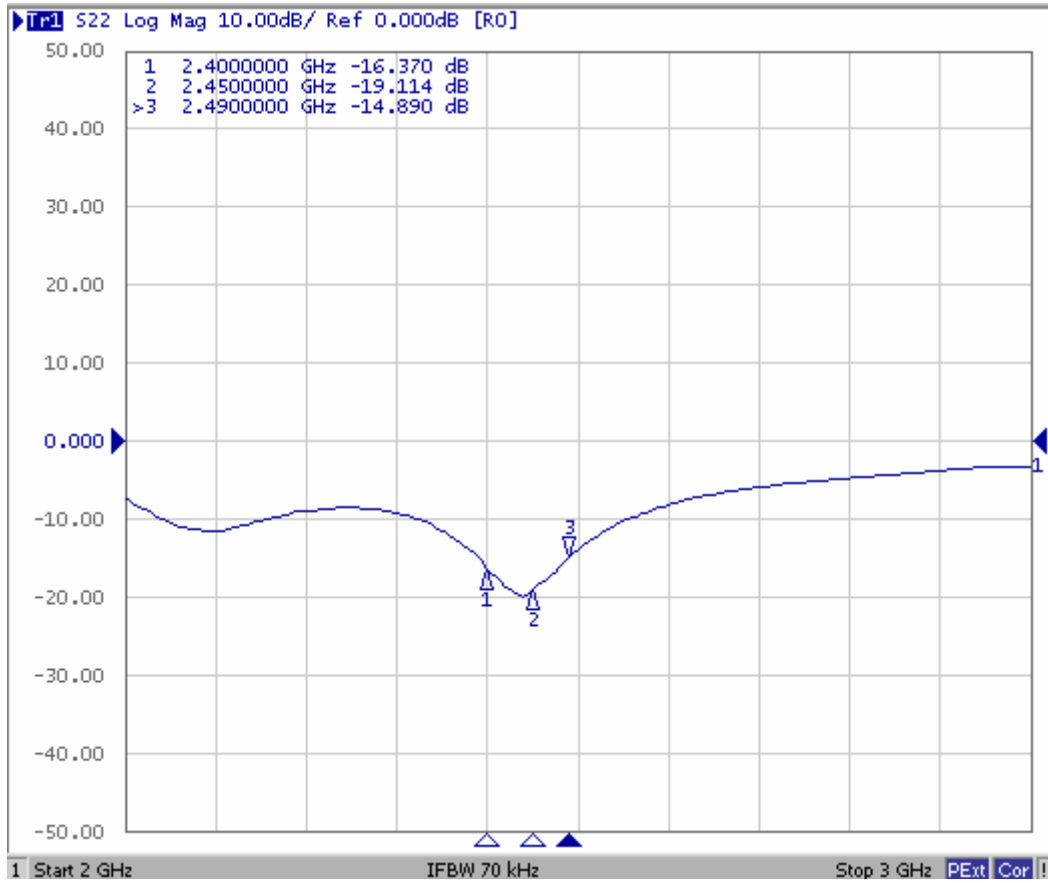
*** End of Report ***

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SHCH 249640

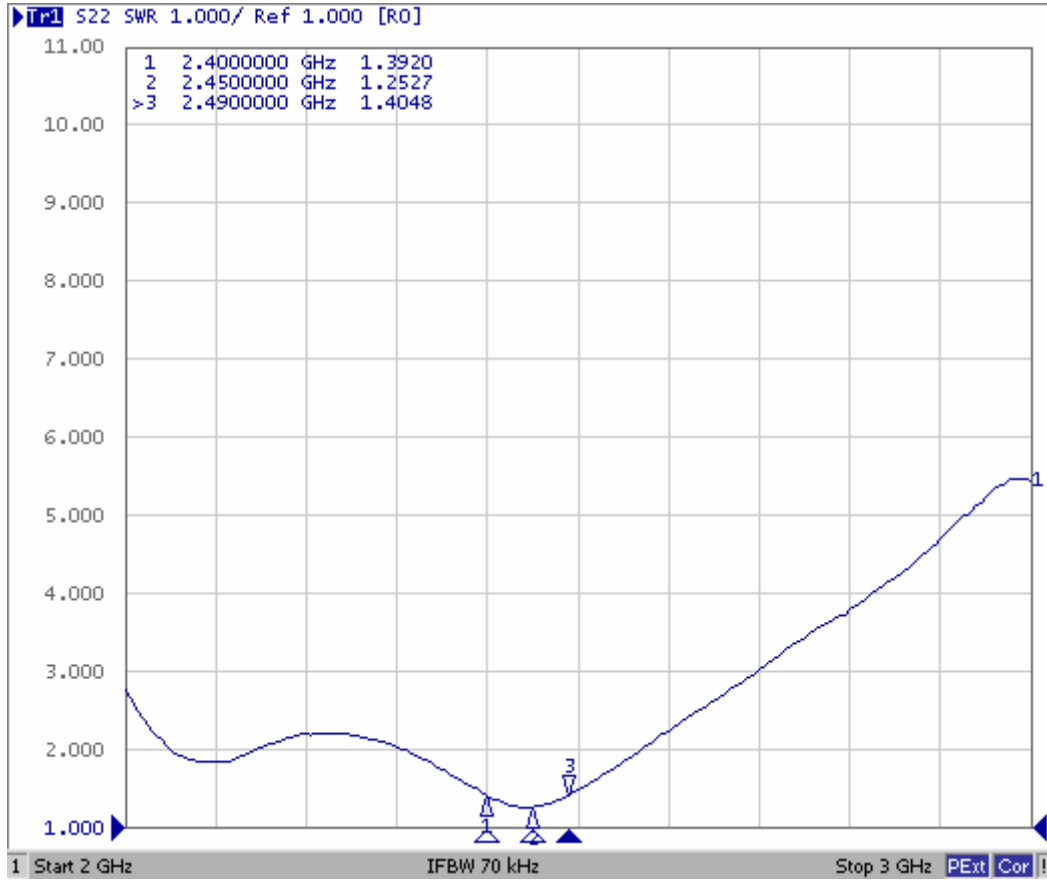
Electrical Properties

Return Loss (Test on board)



Electrical Properties

V.S.W.R (Test on board)



Electrical Properties

Radiation Pattern – H Plane

(Test on board)

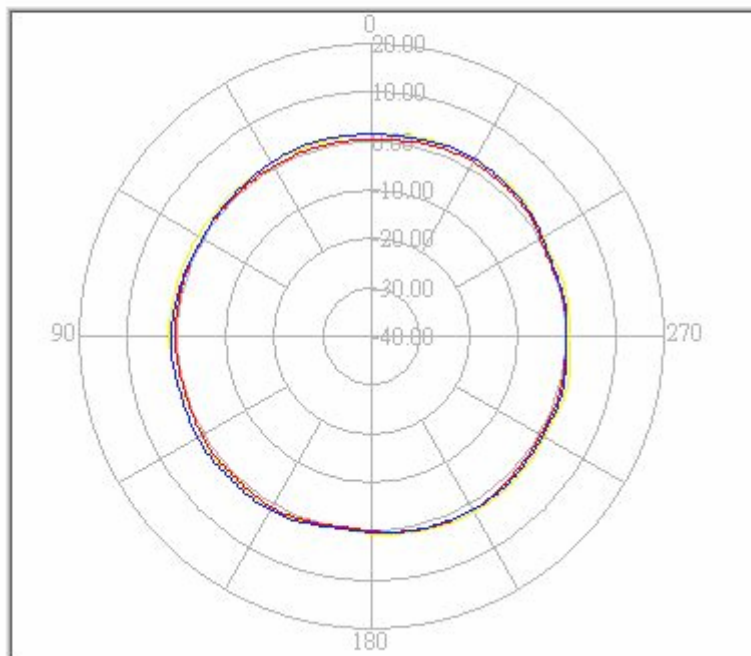


萬旭電業股份有限公司

Model No: cl-060427-sma

Antenna Position: Vertical

Test Mode: H-Plane



Freq (MHz)	peak (dBi)	Angle (o)	Avg (dBi)
2400.00	2.10	25.63	1.20
2450.00	1.28	29.29	0.40
2490.00	1.97	28.07	0.95

Electrical Properties

Radiation Pattern – E Plane

(Test on board)

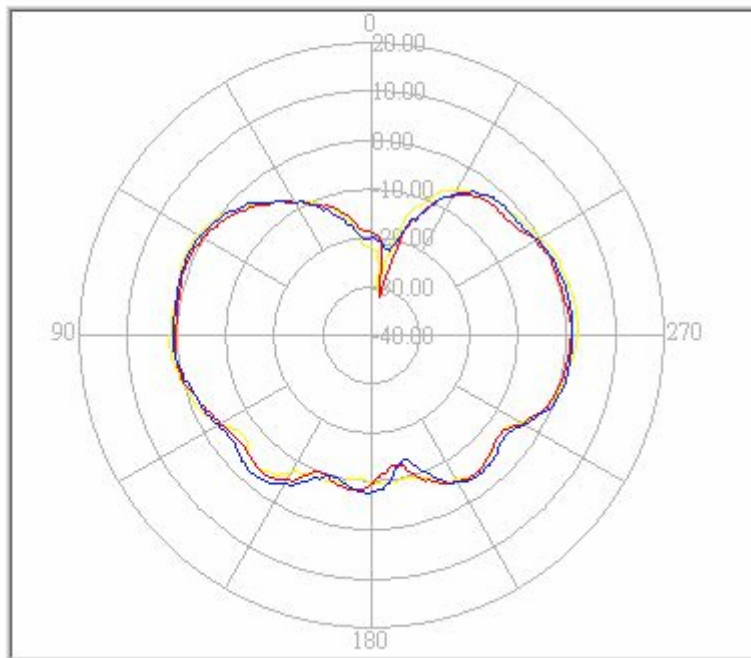


萬旭電業股份有限公司

Model No: cl-060427-sma

Antenna Position: Horizontal

Test Mode: E-Plane



Freq(MHz)	peak(dBi)	Angle(o)	Avg(dBi)
2400.00	2.27	86.64	-2.35
2450.00	1.00	87.86	-3.15
2490.00	1.30	85.42	-2.61

Material Data Sheet

RG-178 Coaxial Cable

SPECIFICATION FOR APPROVAL

DOCUMENT: A30178B001

STYLE : 105°C 30V
RG-178B/U

SIZE: 7/0.102 SCCS

RECOGNIZED: UL 1979



WONDERFUL HI-TECH CO.,LTD


OFFICE : 72WU KONG 6TH ROAD,
WU KU IND. DISTRICT
TAIPEI HSIEN,TAIWAN

TEL : (02)22988033
FAX : (02)22988031-2

FACTORY : 17 PEI YUAN ROAD,
CHUNG-LI IND. PARK
TAIWAN, R.O.C.

TEL : (03)4527777
FAX : (03)4517214

 **WONDERFUL HI-TECH CO., LTD**
SPECIFICATION

STYLE	105°C 30V UL1979	DOCUMENT NO : A30178B001	
SIZE	RG-178B/U	ESTABLISHED DATE: 2004/03/22	
STANDARD : MIL-C-17			
Conductor	Size	AWG	30
	Material	----	Silver-Coated Copper Clad Steel
	Conductors No.	----	7
	Conductors Size	mm	0.102
	O.D.	mm	0.30
Insulation	Average Thickness	mm	0.28
	Diameter	mm	0.86 ±0.03
	Material	----	FEP
	Color	----	Clear
Braid	Material	----	Silver-Coated Copper
	Construction	mm	16 / 3 / 0.10
	Coverage	%	95
Jacket	Average Thickness	mm	0.25
	Diameter	mm	1.80 ±0.05
	Material	----	FEP
	Color	----	Brown
Marking			
Drawing			

 **WONDERFUL HI-TECH CO., LTD.**
SPECIFICATION

Electrical & Physical Properties						
Item		RG-178B/U				
Rating Temp Voltage		105°C 30V				
Conductor Resistance		838 OHM/KM/20°C MAX.				
Insulation Resistance		3000 MEGA OHM/KM MIN.				
Dielectric Strength		AC 500V/Minute				
Spark Test		2.5 KV				
Insulation	Unaged	Tensile Strength	2500 PSI MIN.(1.76 Kg / m ²)			
		Elongation	200% MIN.			
	Aged	Tensile Strength	UNAGED MIN 75%(168HRS×232°C)			
		Elongation	UNAGED MIN 75%(168HRS×232°C)			
Jacket	Unaged	Tensile Strength	2500 PSI MIN.(1.76 Kg / m ²)			
		Elongation	200% MIN.			
	Aged	Tensile Strength	UNAGED MIN.75%(168HRS×232°C)			
		Elongation	UNAGED MIN.75%(168HRS×232°C)			
Nom. Impedance		50 Ohms				
Nom. Capacitance		95.8 pF/m				
Nom. Vel. of Prop.		69.5%				
VSWR (0 – 6 GHZ)		UNDER 1.3				
Attenuation (dB/100m)	100MHz	1GHz	1.8GHz	2.4GHz	5.2GHz	6GHz
	46	155	295	340	505	550

AK001/210X297/1.0

PAGE : 2

EDITION : 1.2

MAKER : C.Y.CHEN

CONFIRM : S.N.WONG

APPROVAL : W.J.WANG



Test Report

WONDERFUL HI-TECH CO., LTD.
NO. 17, PEI-YUAN ROAD., CHUNG-LI IND, PARK,
TAOYUAN TAIWAN, R. O. C.

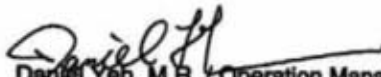
Report No. : CE/2004/C1637
Date : 2004/12/16
Page : 1 of 3

The following merchandise was (were) submitted and identified by the client as :

Type of Product : RG-178 B/U 36AWG SERIES
Sample Received : 2004/12/09
Testing Date : 2004/12/09 TO 2004/12/16

=====

Test Result : - Please see the next page -


Daniel Yeh, M.R. / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.

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Test Report

WONDERFUL HI-TECH CO., LTD.
NO. 17, PEI-YUAN ROAD., CHUNG-LI IND. PARK,
TAOYUAN TAIWAN, R. O. C.

Report No. : CE/2004/C1637
Date : 2004/12/16
Page : 2 of 3

Test Result

PART NAME NO.1 : WHITE FEP JACKET(PLEASE REFER TO THE PHOTO ATTACHED)

Test Item (s):	Unit	Method	MDL	Result			
				No.1			
PBBs(Polybrominated biphenyls)(CAS NO:059536-65-1)	%	With reference to USEPA3540 or USEPA3550. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	0.0005	N.D.			
PBBEs(PBDEs)(Polybrominated biphenyl ethers)	%	With reference to USEPA3540 or USEPA3550. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	0.0005	N.D.			

Test Item (s):	Unit	Method	MDL	Result			
				No.1			
Chromium VI (Cr+6)	ppm	As per US EPA 7196A and US EPA 3060A.	2	N.D.			
Cadmium (Cd)	ppm	ICP-AES after as per EN 1122, method B:2001 or other acid digestion.	2	N.D.			
Mercury (Hg)	ppm	ICP-AES after as per US EPA 3052 or other acid digestion.	2	N.D.			
Lead (Pb)	ppm	ICP-AES after as per US EPA 3050B or other acid digestion.	2	N.D.			

NOTE• (1) N.D. = Not detected (<MDL)
(2) ppm = mg/kg
(3) MDL = Method Detection Limit



Test Report

WONDERFUL HI-TECH CO., LTD.
NO. 17, PEI-YUAN ROAD., CHUNG-LI IND, PARK,
TAOYUAN TAIWAN, R. O. C.

Report No. : CE/2004/C1637
Date : 2004/12/16
Page : 3 of 3



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Housing Material Data Sheet

- Housing(外套)- TPE

KEYFLEX BT-1055D

Ester type TPE



Item	Test method	Test Condition	Unit	Value
PHYSICAL				
Specific Gravity	ASTM D297	23°C		1.19
Melt Index	ASTM D1238	200°C/2.16kg	g/10min	28
Density	ASTM D1505	Density Gradient Tube	g/10min	
Water Absorbance	ASTM D570	23°C	%	0.5
Mold Shrinkage	ASTM D955		%	1.2
MECHANICAL				
Tensile Strain at Break	ASTM D412	500mm/min	kg/cm ² MPa	340 33.3
Tensile Elongation	ASTM D412	500mm/min	%	650
Tensile Strength	ASTM D638	500mm/min	kg/cm ² MPa	140 13.7
5% Tensile Stress	ASTM D638	500mm/min	kg/cm ² MPa	65 6.4
Flexural Modulus(Initial)	ASTM D790	15mm/min	kg/cm ² MPa	2,100 206
Tear Strength	ASTM D624	JIS B type	kg/cm	150
Izod Impact Strength (Notched)	ASTM D256	23°C	kg-cm/cm J/m	NB NB
		-40 °C	kg-cm/cm J/m	20 NB
Elongation	ASTM D395		%	
Compression Set	ASTM D395	25°C x 22hr	%	
		70°C x 22hr	%	54
Hardness	ASTM D2240	shore A		
		shore D		55

*Note : 1)The values of properties in the above table have been obtained by the test pieces(natural color) manufactured under certain of injection.

2)The listed values should be used for referential purposed only.



Test Report


WGJ COMPANY LTD.
NO. 5, TING FU 5 TH STREET, KWEI SHAN HSIANG,
TAOYUAN HSIEN, TAIWAN

Report No. : CE/2005/70439
Date : 2005/07/11
Page : 1 of 4

The following merchandise was (were) submitted and identified by the client as :

Type of Product : LG KEYFLEX TPEE
Style/Item No : BT1055DNC, BT1063DNC
Sample Received : 2005/07/04
Testing Date : 2005/07/04 TO 2005/07/11

Conclusion : The test results of Pb, Cd, Hg, Cr+6, PBB and PBDE for the submitted sample comply with the requirements of RoHS (2002/95/EC).


Daniel Yeh, M.R. / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.

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Test Report

WGJ COMPANY LTD.
NO. 5, TING FU 5 TH STREET, KWEI SHAN HSIANG,
TAOYUAN HSIEN, TAIWAN

Report No. : CE/2005/70439
Date : 2005/07/11
Page : 2 of 4

Test Result

PART NAME NO.1 : WHITE PLASTIC PELLETS (PLEASE REFER TO THE PHOTO ATTACHED)

PASS

Test Item (s):	Unit	Method	MDL	Result	Limit of ROHS
				No.1	
Monobromobiphenyl	%	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)	0.0005	N.D.	-
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 PBBs (Polybrominated biphenyls)/Sum of above	%		-	N.D.	0.1
Monobromobiphenyl ether	%	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)	0.0005	N.D.	-
Dibromobiphenyl ether	%		0.0005	N.D.	-
Tribromobiphenyl ether	%		0.0005	N.D.	-
Tetrabromobiphenyl ether	%		0.0005	N.D.	-
Pentabromobiphenyl ether	%		0.0005	N.D.	-
Hexabromobiphenyl ether	%		0.0005	N.D.	-
Heptabromobiphenyl ether	%		0.0005	N.D.	-
Octabromobiphenyl ether	%		0.0005	N.D.	-
Nonabromobiphenyl ether	%		0.0005	N.D.	-
Decabromobiphenyl ether	%		0.0005	N.D.	-
Total PBBEs(PBDEs)(Polybrominated biphenyl ethers)/Sum of above	%		-	N.D.	0.1

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Test Report

WGJ COMPANY LTD.
NO. 5, TING FU 5 TH STREET, KWEI SHAN HSIANG,
TAOYUAN HSIEN, TAIWAN

Report No. : CE/2005/70439
Date : 2005/07/11
Page : 3 of 4

PASS

Test Item (s):	Unit	Method	MDL	Result	Limit of ROHS
				No.1	
Chromium VI (Cr+6)	ppm	UV-VIS after reference to US EPA 3060A.	2	N.D.	1000
Cadmium (Cd)	ppm	ICP-AES after reference to EN 1122, method B:2001 or other acid digestion.	2	N.D.	100
Mercury (Hg)	ppm	ICP-AES after reference to US EPA 3052 or other acid digestion.	2	N.D.	1000
Lead (Pb)	ppm	ICP-AES after reference to US EPA 3050B or other acid digestion.	2	N.D.	1000

NOTE: (1) N.D. = Not detected (<MDL)
(2) ppm = mg/kg
(3) MDL = Method Detection Limit
(4) " - " = No Regulation

Test Report

WGJ COMPANY LTD.
NO. 5, TING FU 5 TH STREET, KWEI SHAN HSIANG,
TAOYUAN HSIEN, TAIWAN

Report No. : CE/2005/70439
Date : 2005/07/11
Page : 4 of 4



• Hinge(上座/下座)- PC+ALLOY

SHINBLEND [®] ALLOY ENGINEERING PLASTIC DIVISION	SHINKONG SYNTHETIC FIBERS CORPORATION 新光合成纖維股份有限公司 8th Fl., 123, Sec.2, Nanking East Road, Taipei, Taiwan Tel.: 886-2-2507-0131, 886-2-2507-1234 (0Lines); 886-3-4932131-1730 Fax: 886-2-2506-8047, 886-3-491-5763
---	---

Technical Data

SHINBLEND [®] A724NA High Impact Grade / 超韌級 AD4011
--

		Unit	Test Method ¹	Values
Mechanical properties		機械性質		
Izod Impact(Notched) 23°C	衝擊強度	Kg-cm/cm	ASTM D256	85
-20°C	衝擊強度	Kg-cm/cm	ASTM D256	70
-40°C	衝擊強度	Kg-cm/cm	ASTM D256	65
Tensile Strength	拉伸強度	Kg/cm ²	ASTM D638	540
Elongation	拉伸率	%	ASTM D638	100
Flexural Strength	彎曲強度	Kg/cm ²	ASTM D790	800
Flexural Modulus	彎曲模數	Kg/cm ²	ASTM D790	20000
Thermal properties		熱性質		
Heat Deflection Temperature	熱變形溫度		ASTM D648	
66psi		°C		-
264psi		°C		100
Flammability	防火性	-	UL94	-
Melting Point	熔點	°C	DSC	223
Electrical properties		電氣性質		
Dielectric Strength	介電強度	KV/MM	ASTM D149	-
Dielectric Constant	介電常數	...	ASTM D150	-
Volume Resistivity	體積電阻	Ω-CM	ASTM D257	-
Other properties		其它性質		
Specific Gravity	比重	-	ASTM D792	1.19
Water Absorption	吸水率	%	ASTM D570	0.14
Mold Shrinkage	成形收縮率		ASTM D955	
Flow	流動方向	%		0.4~0.6
Cross Flow	垂直方向	%		0.5~0.7

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Test Report

SHINKONG SYNTHETIC FIBERS CORPORATION
8F., NO.123, SEC. 2, NANKING E. RD., TAIPEI, TAIWAN

Report No. : CE/2006/13401
Date : 2006/01/19
Page : 1 of 5

The following merchandise was (were) submitted and identified by the client as :

Type of Product	:	THERMOPLASTIC POLYESTER RESIN
Style/Item No	:	A724NA
Manufacturer/Vendor	:	SHINKONG SYNTHETIC FIBERS CORPORATION
Sample Received	:	2006/01/12
Testing Date	:	2006/01/12 TO 2006/01/19

Test Result

: - Please see the next page -


Daniel Yen, M.P., Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.

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SGS TAIWAN DIVISION | NO. 123, Wu Kung Road, Wujiao Industrial Zone, Tasei county, Taiwan
1096-D 22913333 (Fax) 3 1299-7227 www.sgs.com.tw



Test Report

SHINKONG SYNTHETIC FIBERS CORPORATION
8F., NO.123, SEC. 2, NANKING E. RD., TAIPEI, TAIWAN

Report No. : CE/2006/13401
Date : 2006/01/19
Page : 2 of 5

Test Result

PART NAME NO 1 : WHITE PLASTIC PELLETS

Test Item (s):	Unit	Method	MDL	Result
				No.1
Monobromobiphenyl	%	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)	0.0005	N.D.
Dibromobiphenyl	%		0.0005	N.D.
Tribromobiphenyl	%		0.0005	N.D.
Tetrabromobiphenyl	%		0.0003	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	%			
Total PBBs (Polybrominated biphenyls)/Sum of above	%			N.D.
Monobromobiphenyl ether	%	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)	0.0005	N.D.
Dibromobiphenyl ether	%		0.0005	N.D.
Tribromobiphenyl ether	%		0.0005	N.D.
Tetrabromobiphenyl ether	%		0.0005	N.D.
Pentabromobiphenyl ether	%		0.0005	N.D.
Hexabromobiphenyl ether	%		0.0005	N.D.
Heptabromobiphenyl ether	%		0.0005	N.D.
Octabromobiphenyl ether	%		0.0005	N.D.
Nonabromobiphenyl ether	%		0.0005	N.D.
Decabromobiphenyl ether	%			
Total PBDEs (Polybrominated biphenyl ethers)/Sum of above	%			N.D.
Total of Mono to Nonabrominated biphenyl ether. (Note 4)	%			N.D.

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SGS TAIPEI LIMITED NO. 123-1, WU KUNG ROAD, WUKO INDUSTRIAL ZONE, TAINAN COUNTY, TAIWAN.
XINBE-D 22862039 XINBE-D 2286-2237 www.sgs.com.tw



Test Report

SHINKONG SYNTHETIC FIBERS CORPORATION
8F., NO.123, SEC. 2, NANKING E. RD., TAIPEI, TAIWAN

Report No. : CE/2006/13401
Date : 2006/01/19
Page : 3 of 5

Test Item (s):	Unit	Method	MDL	Result
				No.1
Chromium VI (Cr+6)	ppm	UV-VIS after reference to US EPA 3060A.	2	N.D.
Cadmium (Cd)	ppm	ICP-AES after reference to US EPA 3052 or other acid digestion.	2	N.D.
Mercury (Hg)	ppm	ICP-AES after reference to US EPA 3052 or other acid digestion.	2	N.D.
Lead (Pb)	ppm	ICP-AES after reference to US EPA 3052 or other acid digestion.	2	N.D.

- NOTE: (1) N.D. = Not detected (<MDL)
(2) ppm = mg/kg
(3) MDL = Method Detection Limit
(4) Decabromodiphenyl ether (DecaBDE) in polymeric applications is exempted by Commission Decision of 13 Oct 2005 amending Directive 2002/95/EC notified under document 2005/717/EC.
(5) PBBEs=PBDEs=Polybrominated Diphenyl Ethers=PBDOs=PBBOs.
(6) " - " = Not Regulation

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TEL: 886-2-27823338 (BUC-2 2299-3237) www.sgs.com.tw

19 09 2010 14:11 FAX 00
13 01 2006 13:11 FAX 00



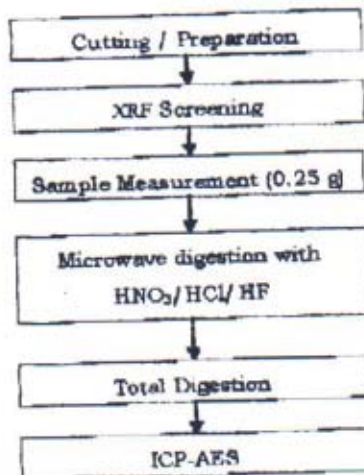
Test Report

SHINKONG SYNTHETIC FIBERS CORPORATION
8F., NO.123, SEC. 2, NANKING E. RD., TAIPEI, TAIWAN

Report No. : CE/2006/13401
Date : 2006/01/19
Page : 4 of 5

- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
- 2) Name of the person who made measurement: Anren Lee
- 3) Name of the person in charge of measurement: Daniel Yeh

Flow Chart of Digestion for Plastic -EPA3052 for Pb - Cd (without residual)



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Test Report

SHINKONG SYNTHETIC FIBERS CORPORATION
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Report No. : CE/2006/13401
Date : 2006/01/19
Page : 5 of 5



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500 03

17-02/2006 13:01 FAX 00
17-02/2006 13:01 FAX 00

Sleeve



Test Report No.: GZSC051191892/LP Date: NOV 29, 2005 Page 1 of 2

NEW-MINGTAI ELECTRONIC HARDWARE ELECTROPLATE FACTORY
OLD VILLAGE HALL (LAOXIANGFU), TONG-LE VILLAGE, LONG-GANG TOWN, SHENZHEN

Report on the submitted sample said to be 环保锡/GP Sn


SGS Ref No. SZ051125313EC-3.1
Sample Receiving Date NOV 23, 2005
Testing Period NOV 23, 2005 TO NOV 29, 2005

Test Requested (1) As specified by client, to determine the Lead, Cadmium, Mercury & Hexavalent Chromium content in the submitted sample.
(2) Determination of PBBs (polybrominated biphenyls), PBDEs (Polybrominated diphenylethers) of the submitted sample.

Test Method (1) Lead content - With reference to EPA method 3050B: 1995 / other acid digestion.
Cadmium content - With reference to BS EN1122: 2001 method B / other acid digestion.
Mercury content - With reference to EPA 1631: 1998 / 7473: 1999 / other acid digestion.
Hexavalent Chromium content - With reference to ISO 15713: 2000 (Clause 6.2).
Analysis was performed by Atomic Absorption Spectrometer / Inductively Coupled Plasma Atomic Emission Spectrometer (ICP-AES) / UV-VIS Spectrophotometer.
(2) With reference to EPA 3540C / 3550C. Analysis was performed by GC/MS

RESULTS Please refer to next page

Signed for and on behalf of
SGS-CSTC Ltd


Zhang Li Amy
Sr Engineer

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GZCM 370029

FROM : Xiangxin
PHONE NO. : 84292807
JAN 21 2006 09:16

776-8337775

I #217



Test Report

No.: GZSCR051191692/LP

Date: NOV 29, 2005

Page 2 of 2

Results:

(1)

Item	Unit	MDL	Silvery metal part
Lead Content (Pb)	ppm	2	28
Cadmium Content (Cd)	ppm	2	N.D.
Mercury Content (Hg)	ppm	2	N.D.
Hexavalent Chromium (Cr VI)	µg/cm ²	0.02	N.D.

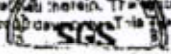
Note : - N.D. = Not Detected (< MDL)
 - MDL = Method Detection Limit
 - ppm = mg/kg

(2)

	Silvery metal can
Flame Retardants	
Polybrominated Biphenyls (PBBs)	
Monobromobiphenyl	N.D.
Dibromobiphenyl	N.D.
Tribromobiphenyl	N.D.
Tetrabromobiphenyl	N.D.
Pentabromobiphenyl	N.D.
Hexabromobiphenyl	N.D.
Heptabromobiphenyl	N.D.
Octabromobiphenyl	N.D.
Nonabromobiphenyl	N.D.
Decabromobiphenyl	N.D.
Polybrominated Diphenylethers (PBDEs)	
Monobromodiphenyl ether	N.D.
Dibromodiphenyl ether	N.D.
Tribromodiphenyl ether	N.D.
Tetrabromodiphenyl ether	N.D.
Pentabromodiphenyl ether	N.D.
Hexabromodiphenyl ether	N.D.
Heptabromodiphenyl ether	N.D.
Octabromodiphenyl ether	N.D.
Nonabromodiphenyl ether	N.D.
Decabromodiphenyl ether	N.D.

Note : - N.D. = Not Detected (< 5 ppm)
 - ppm = mg/kg

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GZCM 379028

SGS**Test Report**

No.: GZ0602013169/CHEM

Date: FEB 17, 2006

Page 1 of 1

SHEN ZHEN HUEYNITEH CO., LTD

5/F BUILDING, BAI SHI ZHOU YUAN ZINENG INDUSTRIAL ZONE, SHAHE TOWN, SHEN ZHEN CITY

Report on the Submitted sample said to be 黄铜

SGS Ref No. : SZ060204487RS-4.1
 Material : Cu
 Buyer : SONY
 Sample Receiving Date : FEB 13, 2006
 Testing Period : FEB 13, 2006 TO FEB 17, 2006

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 / other acid digestion
 Cadmium content - With reference to BS EN1122: 2001 method B / other acid digestion
 Mercury content - With reference to EPA 3052: 1996 / 7473: 1998 / other acid digestion
 Hexavalent Chromium content - With reference to EPA 3060A: 1996 & EPA 7196A: 1992
 Analysis was performed by Atomic Absorption Spectrometer / Inductively Coupled Plasma Atomic Emission Spectrometer (ICP-AES) / Direct Mercury analyzer / UV-VIS Spectrophotometer.


Results

Item	Unit	MDL	Golden metal
Lead Content (Pb)	ppm	2	186
Cadmium Content (Cd)	ppm	2	N.D.
Mercury Content (Hg)	ppm	2	N.D.
Hexavalent Chromium (Cr VI)	ppm	2	N.D.

Note : - N.D. = Not Detected (< MDL)
 - MDL = Method Detection Limit
 - ppm = mg/kg

*** End of Report ***

Signed for and on behalf of
 SGS-CSTC Ltd.


 Huang Fang, Sweeny
 Sr. Engineer

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GZCM 621860

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Member of the SGS Group (SGS SA)

Rivet



Test Report

WANSHIH ELECTRONIC CO., LTD.
3F 72 WU KONG 6TH RD., WU KU INDUSTRIAL DISTRICT
TAIPEI HSIEN, TAIWAN. R. O. C.

報告號碼 : CE/2005/B4807
日期 : 2005/11/28
頁數 : 1 of 2

以下測試樣品乃供應廠商所提供及確認：

樣品名稱 : 固定鉚釘 (黑線)
收件日期 : 2005/11/21.
測試日期 : 2005/11/21 TO 2005/11/28

測試結果

測試部位 NO.1 : 黑色鉚釘

測試項目	單位	測試方法	偵測極限值	結果
六價鉻	ppm	依照US EPA 3060A方法, 用UV-VIS做分析	2	N.D.
鎘	ppm	依照 EN1122 方法B:2001或其他酸消化方法, 用感應耦合電漿原子發射光譜儀(ICP-AES)做分析	2	N.D.
汞	ppm	依照 US EPA 3052 方法或其他酸消化方法, 用感應耦合電漿原子發射光譜儀(ICP-AES)做分析	2	N.D.
鉛	ppm	依照 US EPA 3050B 方法或其他酸消化方法, 用感應耦合電漿原子發射光譜儀(ICP-AES)做分析	2	39.5

備註：(1) N.D. = Not detected.(<MDL) / 未檢出(低於偵測極限值)

(2) ppm = mg/kg / 百萬分之一

(3) MDL= Method Detection Limit(偵測極限值)


Daniel Yen, M.R. / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.

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Test Report

WANSHIH ELECTRONIC CO., LTD.
3F 72 WU KONG 6TH RD., WU KU INDUSTRIAL DISTRICT
TAIPEI HSIEN, TAIWAN, R. O. C.

報告號碼 : CE/2005/B4807
日期 : 2005/11/28
頁數 : 2 of 2



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