



WHA YU INDUSTRIAL CO., LTD.(HEAD OFFICE)
 DONGGUAN AEON TECH CO.,LTD.(CHINA)
 SUZHOU AEON TECH CO.,LTD.(CHINA)
 AEON TECH (SHANGHAI) CO.,LTD(CHINA)
 DONGGUAN PARNER TECH CO.,LTD.(CHINA)



SPECIFICATION FOR APPROVAL

CUSTOMER: 永洋科技股份有限公司


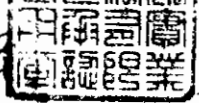
PART NAME: PIFA Antenna

PART NO.: 11320Y11030A1

REVISION:

W. Y. P/NO.: C381-510137-A(SSR-83208)

REV.: X1

	MANUFACTURER SIGNATURE	CUSTOMER SIGNATURE
APPROVED BY :	Romeo 	
DATE :	9/12/68 	

WHA YU GROUP

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DONGGUAN PARNER TECH CO., LTD.(CHINA)

東莞倍能電子有限公司

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Dong Guan City, Guangdong, China

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PIFA Antenna

Specification

1. Electrical Properties : (With Housing)

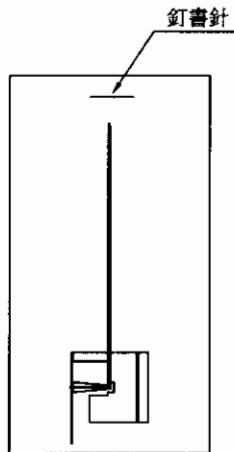
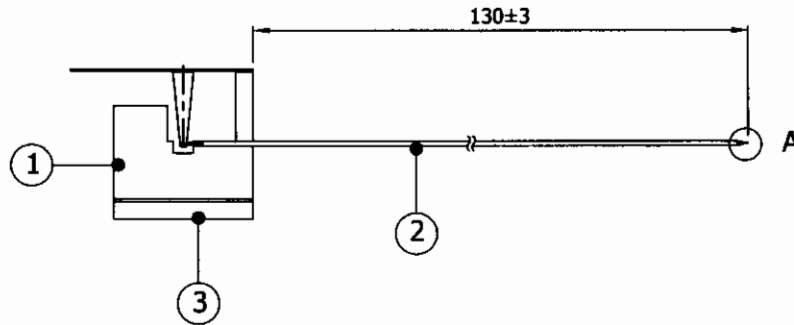
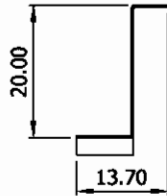
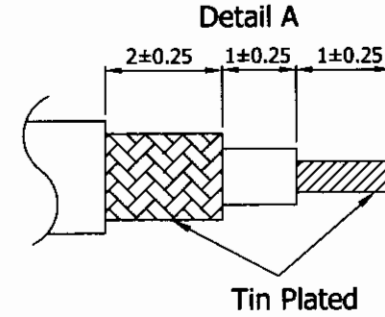
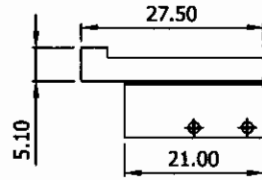
- 1.1 Frequency Range..... 2.4GHz ~ 2.5GHz
- 1.2 Impedance50 Ω Nominal
- 1.3 VSWR 2.0 Max.
- 1.4 Return Loss.....-10 dB Max.
- 1.5 Efficiency..... 60%
- 1.6 Peak Gain..... 3.4dBi(including cable loss)
- 1.7 Cable loss..... 0.448dB
- 1.8 Polarization..... Linear
- 1.9 Admitted Power..... 1W
- 1.10 Cable..... ϕ 1.13 Coaxial Cable

2. Physical Properties :

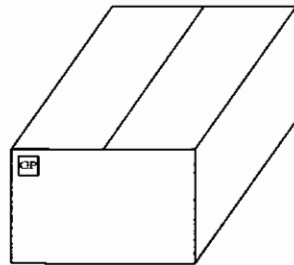
- 2.1 Operating Temp. -20 $^{\circ}$ C ~ +65 $^{\circ}$ C
- 2.2 Storage Temp. -30 $^{\circ}$ C ~ +75 $^{\circ}$ C

CG-

REV	DATE	DESCRIPTION
X1	9/3-2008	New Issue



Packing : 1 pcs/bag
(每10袋用釘書機訂起來)



GP標籤貼於外箱兩邊側面左上角

NO	DESCRIPTION	QTY	REMARK
3	雙面泡棉膠 EVA+G4000	1	
2	Cable $\phi 1.13$ Coaxial Cable ; Gray	1	
1	PIFA Phos. Bronze	1	

CUSTOMER'S SIGNATURE	XX.	±5	APPROVED	CUSTOMER: 永洋
	X.	±3.0	CHECKED	
	.X	±1.0		
	.XX	±0.5		
	.XXX	±0.1	DRAWING	
			程永明	PART NO : PARTNAME: PIFA Antenna W.Y P/NO : C381-510137-A
				REV UNIT FILE : SSR-83208 X1 m/m SHEET : 1/1

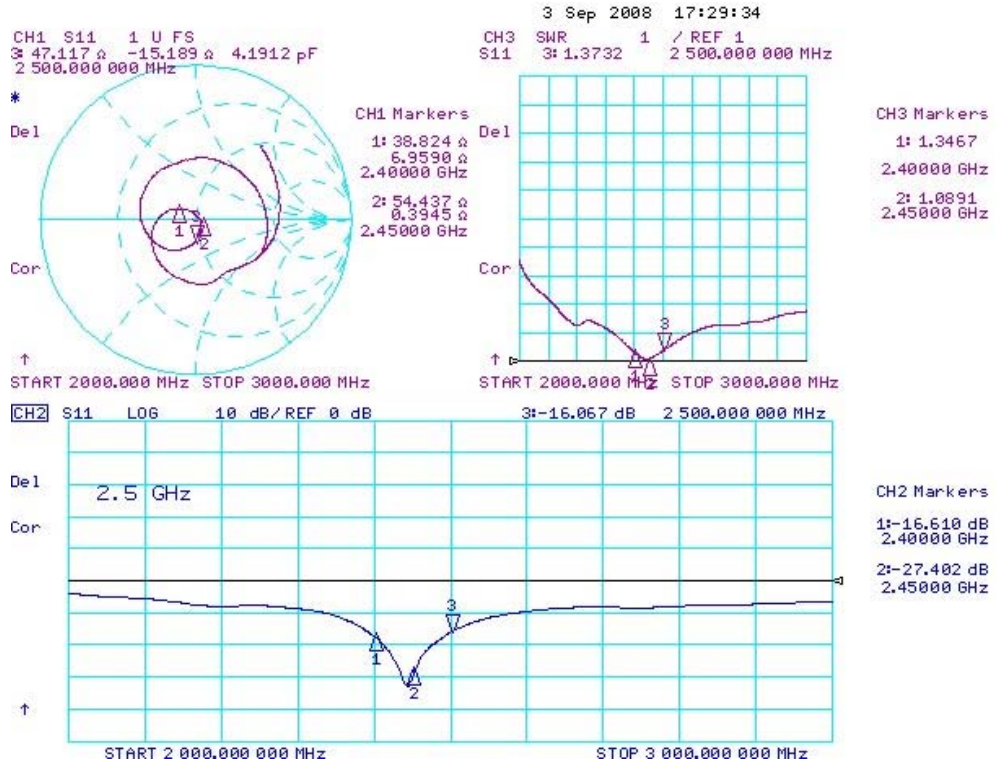
M.gear Wha Yu Group
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RF Antenna Assembly

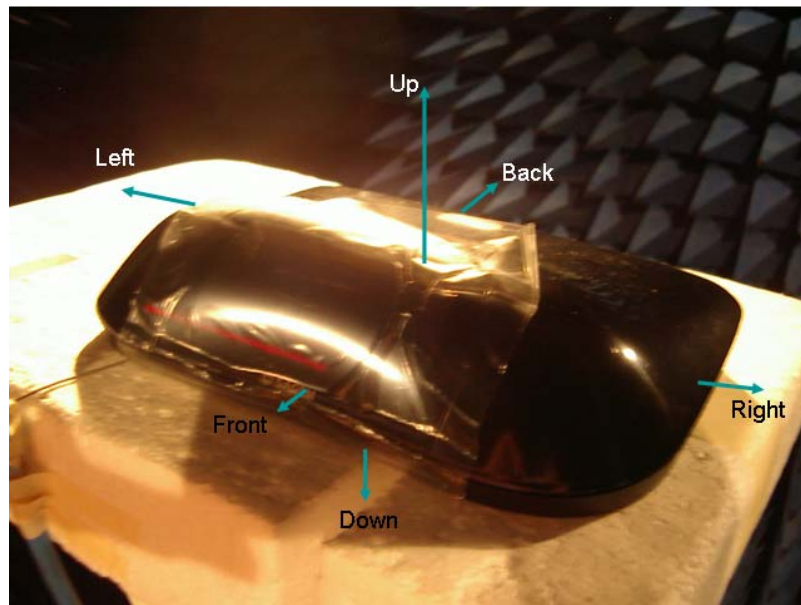
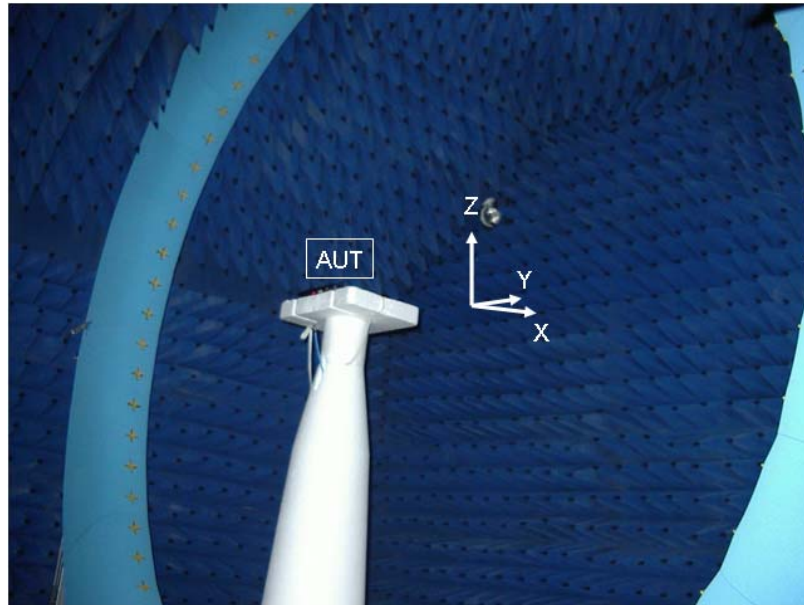
P/NO : C381-510137-A (SSR-83208)

SPEC : 2.4GHz~2.5GHz

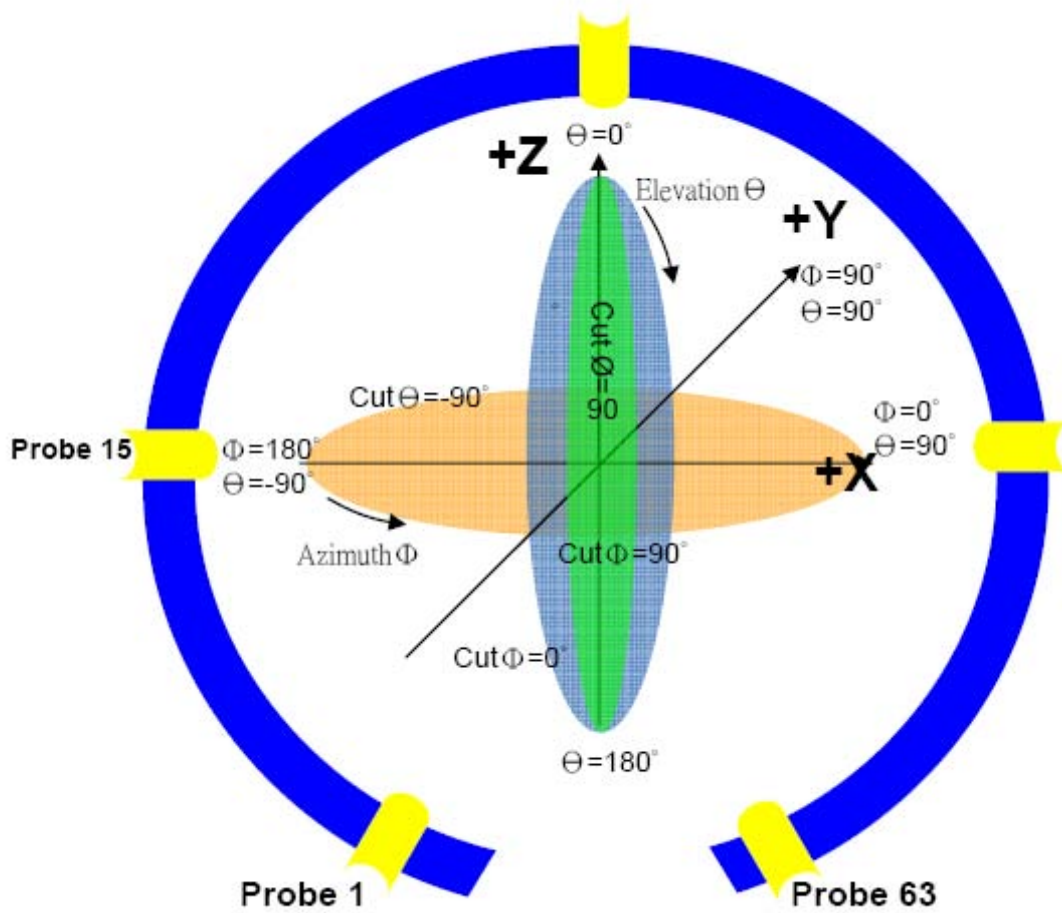
S11:2.4~2.5GHz



Measurement location of the antenna



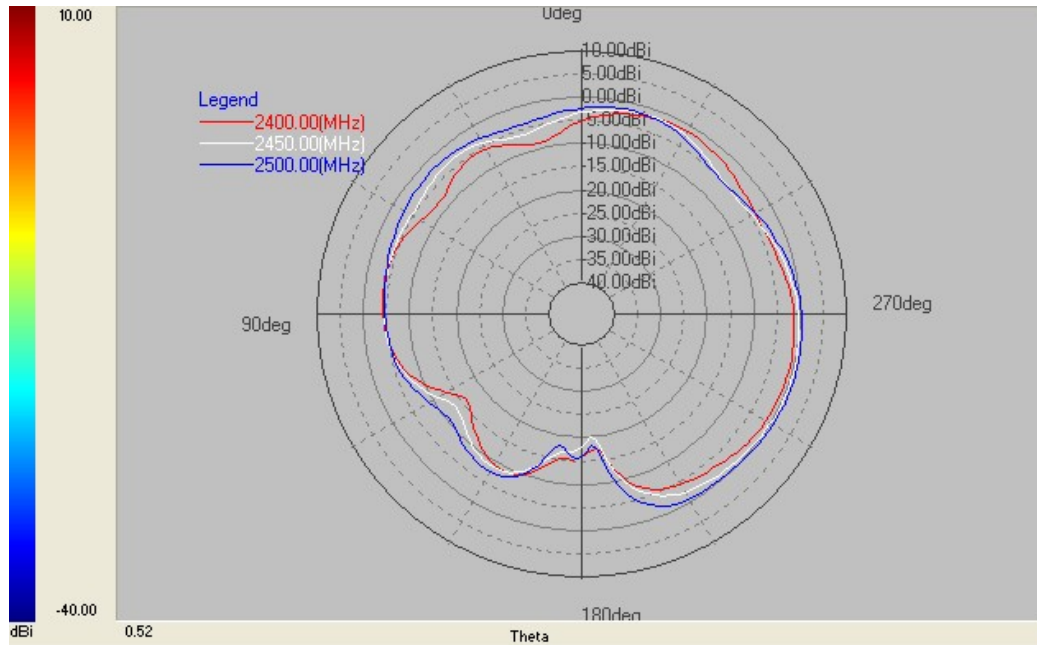
	XY	YZ	XZ
0°	Right	Up	Up
90°	Back	Back	Right
180°	Left	Down	Down
270°	Front	Front	Left



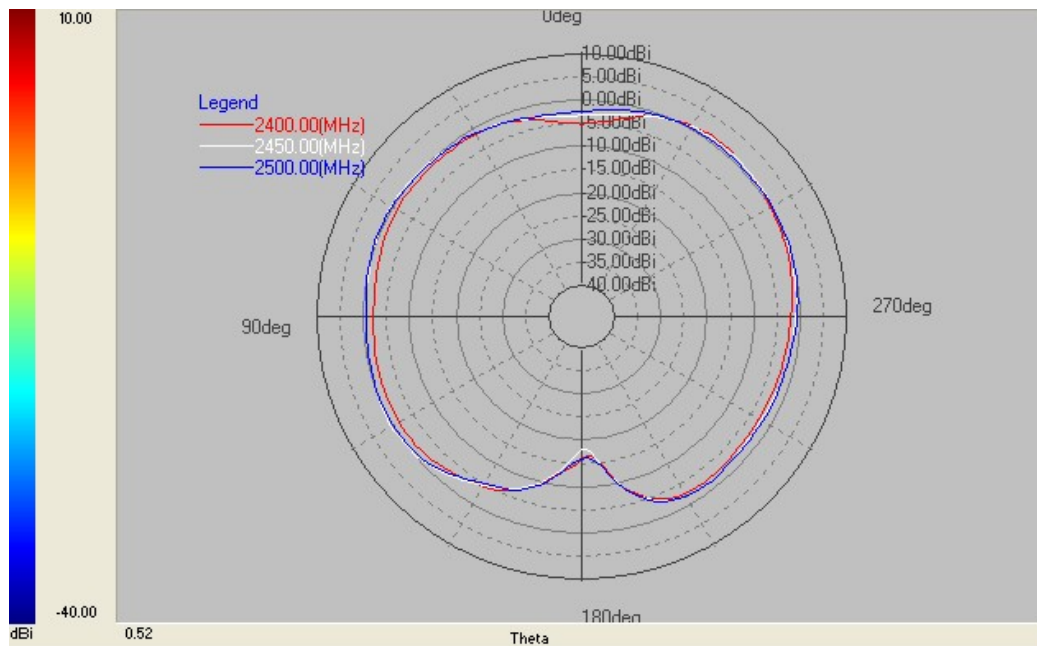
	θ	ϕ
Total angle	175°	360°
How many angle scan one point	5°	5°
Total scan point	36	73

2D patterns

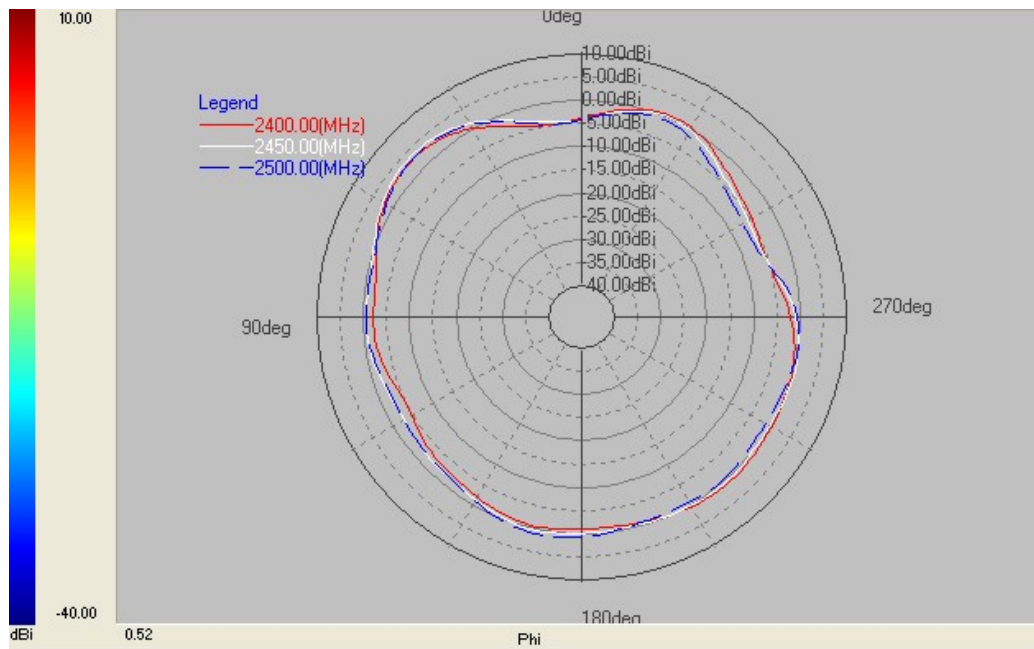
2.4~2.5GHz



X-Z Plane (E-total)



Y-Z Plane (E-total)



X-Y Plane (E-total)

Return Loss

	PIFA (dB)
2.4GHz	-16.6
2.45GHz	-27.4
2.5GHz	-16.1

3D total Peak Gain & Efficiency

Frequency	PIFA	
	Peak Gain (dBi)	Efficiency (%)
2.4GHz	2.9	64
2.45GHz	3.4	68
2.5GHz	2.8	65

Date : 2005/02/02

Our Spec. No. WS05-M016

MESSRS.

SPECIFICATION
FOR
HIGH FREQUENCY COAXIAL CABLE
" KHCX - 32AWG - SB - TA " GRAY

SHOWA ELECTRIC WIRE & CABLE CO., LTD.

TORANOMON

TOKYO JAPAN

T. Mori

T. Mori
Manager, Engineering Section
Engineering Dept.
Electronic Wire Business Unit

1. 適用(SCOPE)

本仕様書は電子機器などの内部配線に使用される細径同軸“KHCX-32AWG-SB-TA”の構造と特性について定める。

This specification covers the construction and characteristics of coaxial cable “KHCX-32AWG-SB-TA” for internal wiring of electronic equipment.

2. ケーブル型名の説明 (EXPLANATION OF CABLE TYPE)

KHCX-32AWG-SB-TA

(1) (2) (3) (4)

(1) ケーブル略称 (Cable Abbreviation)

(2) 導体サイズ (Conductor Size)

(3) Inner Conductor Type (4) Outer Conductor Type.

3. 構造(CONSTRUCTION)

項目 Item		要求特性 Requirement
内部導体 Inner conductor	材質 Material	銀めっき軟銅線 Silver coated annealed copper wire
	構成 Stranding	7/0.08mm
	外径 Diameter	標準 0.24mm Nom. 0.24mm
絶縁体 Insulation	材質 Material	FEP
	色別 Color	自然色 Natural
	厚さ Thickness	標準 0.22mm Nom. 0.22mm
	外径 Diameter	0.68 +0.04/ -0.02mm
外部導体 Outer conductor	材質 Material	錫めっき銅合金線編組 Tinned copper alloy wire braid shield
	構成 Stranding	16/4/0.05 mm
	編組密度 Coverage	Approx. 90%
シース Sheath	材質 Material	FEP
	色別 Color	灰・白・黒 Gray・White・Black
	厚さ Thickness	標準 0.10mm Nom. 0.10mm
仕上外径 Overall diameter	1.13mm +0.08/ -0.05mm	
概算質量 Approximate mass	3 kg/km	

4. 特性 (CHARACTERISTICS)

項目 Item	単位 Unit	要求特性 Requirements
導体抵抗 Conductor Resistance	Ω/km	597 以下 (20°C) Max. 520 (at 20°C)
絶縁抵抗 Insulation Resistance	$\text{M}\Omega\text{km}$	1,500 以上 (DC 500V 1 分間充電後, 20°C) Min. 1,500 (After charge DC 500V for 1 min. at 20°C)
耐電圧 Dielectric Strength	-	絶縁体 : AC.1.5kV/0.15 秒間 (スパークテスト) Dielectric core : No breakdown at AC.1.5kV for 0.15sec by spark test.
		シース : AC.1.5kV/0.15 秒間 (スパークテスト) Jacket : No breakdown at AC.1.5kV for 0.15sec by spark test.
		内部導体-外部導体間 : AC.500V/1 分間 No breakdown at AC.500V for 1 min between outer conductor and inner conductor.
静電容量 Capacitance	pF/m	標準 98 (at 1kHz) Nom. 98 (at 1kHz)
特性インピーダンス Characteristic Impedance	Ω	50 ± 2 (at TDR)
減衰量 Attenuation	dB/m	2.0GHz : 2.9 以下 Max.2.9 2.4GHz : 3.2 以下 Max.3.2 3.0GHz : 3.7 以下 Max.3.7 4.0GHz : 4.3 以下 Max.4.3 5.0GHz : 4.8 以下 Max.4.8 6.0GHz : 5.3 以下 Max.5.3
VSWR	--	2.4~2.5GHz : 1.20 以下 Max.1.20 4.8~6.0GHz : 1.40 以下 Max.1.40
耐はんだ性 Heat resistance for solder	--	絶縁体およびシースの寸法変化は 0.2mm 以下のこと。 Shrink and expansion of dielectric core or jacket should not be more than 0.2mm. 試験条件(test condition) : $255^\circ\text{C} \pm 5^\circ\text{C} * 3 \text{ sec.}$

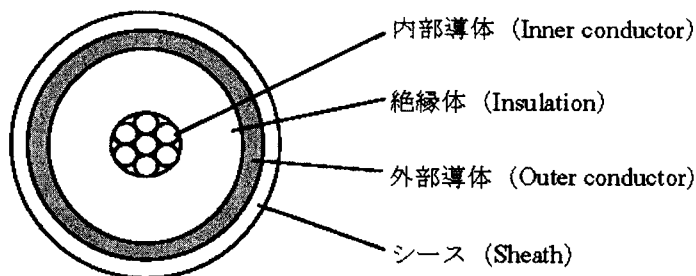


図 1 .ケーブル構造図

Fig.1. Cable Cross-Section

SGS Test Report

Product : PIFA Antenna

Contents

No	Description		Report No.	Page
1	Cable	φ 1.13mm Cable	CE/2007/C0427	P.12~16
2	PIFA	Phos. Bronze	CE/2007/C5809A	P.17~22
3	雙面泡棉膠	EVA+G4000	ASZ0803110703C CE/2008/65270	P.23~31

Result for RoHS : PASS

Test Report

No. : CE/2007/C0427

Date : 2007/12/06

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SWCC SHOWA DEVICE TECHNOLOGY CO., LTD.
NO. 1-8, TORANOMON 1-CHOME, MINATO-KU, TOKYO 105-8444



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

Sample Description : ANTENNA COAXIAL CABLE UL-STYLE 11032
Style/Item No. : FOR KHCX-30AWG-SB-TA / KHCX-32AWG-SB-TA /
KHCX-36AWG-SB-TA / KHCX-32AWG-WSB-TA GRAY
Sample Receiving Date : 2007/12/03
Testing Period : 2007/12/03 TO 2007/12/06

=====
Test Requested : In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.
Test Method : With reference to IEC 62321, Ed.1 111/54/CDV Procedures for the Determination of Levels of Regulated Substances in Electrotechnical Products.
(1) Determination of Cadmium by ICP-AES.
(2) Determination of Lead by ICP-AES.
(3) Determination of Mercury by ICP-AES.
(4) Determination of Hexavalent Chromium for non-metallic samples by UV/Vis Spectrometry.
(5) Determination of Hexavalent Chromium for metallic samples by Spot test / Colorimetric Method.
(6) Determination of PBB and PBDE by GC/MS.
Test Result(s) : Please refer to next page(s).


Chenyu Kung / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory – Taipei

Test Report

No. : CE/2007/C0427 Date : 2007/12/06

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SWCC SHOWA DEVICE TECHNOLOGY CO., LTD.
NO. 1-8, TORANOMON 1-CHOME, MINATO-KU, TOKYO 105-8444



Test results by chemical method (Unit: mg/kg)

Test Item (s):	Method (Refer to)	Result				MDL
		No.1	No.2	No.3	No.4	
Cadmium (Cd)	(1)	n.d.	n.d.	n.d.	n.d.	2
Lead (Pb)	(2)	n.d.	n.d.	n.d.	n.d.	2
Mercury (Hg)	(3)	n.d.	n.d.	n.d.	n.d.	2
Hexavalent Chromium Cr(VI) by alkaline extraction	(4)	n.d.	n.d.	---	---	2
Hexavalent Chromium Cr(VI) by Spot test / boiling water extraction	(5)	---	---	Negative	Negative	See Note 5
Sum of PBBs	(6)	n.d.	n.d.	---	---	-
Monobromobiphenyl		n.d.	n.d.	---	---	5
Dibromobiphenyl		n.d.	n.d.	---	---	5
Tribromobiphenyl		n.d.	n.d.	---	---	5
Tetrabromobiphenyl		n.d.	n.d.	---	---	5
Pentabromobiphenyl		n.d.	n.d.	---	---	5
Hexabromobiphenyl		n.d.	n.d.	---	---	5
Heptabromobiphenyl		n.d.	n.d.	---	---	5
Octabromobiphenyl		n.d.	n.d.	---	---	5
Nonabromobiphenyl		n.d.	n.d.	---	---	5
Decabromobiphenyl		n.d.	n.d.	---	---	5
Sum of PBDEs (Mono to Nona) (Note 4)		n.d.	n.d.	---	---	-
Monobromobiphenyl ether		n.d.	n.d.	---	---	5
Dibromobiphenyl ether		n.d.	n.d.	---	---	5
Tribromobiphenyl ether		n.d.	n.d.	---	---	5
Tetrabromobiphenyl ether		n.d.	n.d.	---	---	5
Pentabromobiphenyl ether		n.d.	n.d.	---	---	5
Hexabromobiphenyl ether		n.d.	n.d.	---	---	5
Heptabromobiphenyl ether		n.d.	n.d.	---	---	5
Octabromobiphenyl ether		n.d.	n.d.	---	---	5
Nonabromobiphenyl ether		n.d.	n.d.	---	---	5
Decabromobiphenyl ether		n.d.	n.d.	---	---	5
Sum of PBDEs (Mono to Deca)		n.d.	n.d.	---	---	-

Test Report

No. : CE/2007/C0427 Date : 2007/12/06

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SWCC SHOWA DEVICE TECHNOLOGY CO., LTD.
NO. 1-8, TORANOMON 1-CHOME, MINATO-KU, TOKYO 105-8444



TEST PART DESCRIPTION:

NO.1 : GRAY PLASTIC JACKET
NO.2 : TRANSPARENT PLASTIC
NO.3 : SILVER COLORED METAL WIRE
NO.4 : SILVER COLORED METAL FOIL

Note : 1. mg/kg = ppm

2. n.d. = Not Detected

3. MDL = Method Detection Limit

4. According to 2005/717/EC DecaBDE is exempt.

5. Spot-test:

Negative = Absence of Cr(VI) coating / surface layer,

Positive = Presence of Cr(VI) coating / surface layer;

(The tested sample should be further verified by boiling-water-extraction method if the spot test result cannot be confirmed.)

Boiling-water-extraction:

Negative = Absence of Cr(VI) coating / surface layer.

Positive = Presence of Cr(VI) coating / surface layer;

the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm² sample surface area.

6. "-" = Not Regulated

7. "--" = Not Conducted

Test Report

No. : CE/2007/C0427

Date : 2007/12/06

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SWCC SHOWA DEVICE TECHNOLOGY CO., LTD.
NO. 1-8, TORANOMON 1-CHOME, MINATO-KU, TOKYO 105-8444



Test Report

No. : CE/2007/C0427

Date : 2007/12/06

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SWCC SHOWA DEVICE TECHNOLOGY CO., LTD.
NO. 1-8, TORANOMON 1-CHOME, MINATO-KU, TOKYO 105-8444



** End of Report **

測試報告 Test Report

號碼(No.): CE/2007/C5809A

日期(Date): 2007/12/28

頁數(Page): 1 of 6

新泰伸科技股份有限公司
HTS TECHNOLOGY CO., LTD.
桃園縣楊梅鎮民隆路8號
8, MING LUNG RD., YANG MEI JEN, TAO YUAN, TAIWAN 326, R. O. C.



以下測試樣品係由客戶送樣，且由客戶聲稱並經客戶確認如下 (The following samples was/were submitted and identified by/on behalf of the client as):

樣品名稱(Sample Description) : 磷青銅 C5210 (PHOSPHOR BRONZE C5210)
收件日期(Sample Receiving Date) : 2007/12/21
測試期間(Testing Period) : 2007/12/21 TO 2007/12/28

- =====
測試需求(Test Requested) : 參照 RoHS 2002/95/EC 及其修定指令要求. (In accordance with the RoHS Directive 2002/95/EC, and its amendment directives).
- 測試方法(Test Method) : 參考IEC 62321, Ed. 1 111/54/CDV方法檢測. (With reference to IEC 62321, Ed.1 111/54/CDV. Procedures for the Determination of Levels of Regulated Substances in Electrotechnical Products).
- (1) 用感應耦合電漿原子發射光譜儀檢測鎘含量. / Determination of Cadmium by ICP-AES.
 - (2) 用感應耦合電漿原子發射光譜儀檢測鉛含量. / Determination of Lead by ICP-AES.
 - (3) 用感應耦合電漿原子發射光譜儀檢測汞含量. / Determination of Mercury by ICP-AES.
 - (4) 針對金屬材質之樣品，用Spot test / Colorimetric方法檢測六價鉻含量. / Determination of Hexavalent Chromium for metallic samples by Spot test / Colorimetric Method.
 - (5) 以氣相層析儀/質譜儀檢測多溴聯苯和多溴聯苯醚含量. / Determination of PBB and PBDE by GC/MS.
- 測試結果(Test Results) : 請見下一頁 (Please refer to next pages).
- 結論(Conclusion) : 根據客戶所提供樣品的測試結果，符合RoHS(2002/95/EC)及其修定指令之要求 (Based on the performed tests on submitted samples, the test results are **compliant with** the limits of RoHS Directive 2002/95/EC and its subsequent amendments).

Chenyu Kung / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory – Taipei

測試報告

Test Report

號碼(No.): CE/2007/C5809A

日期(Date): 2007/12/28

頁數(Page): 2 of 6

新泰伸科技股份有限公司
HTS TECHNOLOGY CO.,LTD.
桃園縣楊梅鎮民隆路8號
8, MING LUNG RD., YANG MEI JEN, TAO YUAN, TAIWAN 326, R. O. C.



測試結果(Test Results) 單位(Unit): mg/kg

測試項目 (Test Items)	測試方法 Method (Refer to)	結果 (Result)	方法偵測 極限值 (MDL)	RoHS 限值 (Limit)
		No.1		
鎘 / Cadmium (Cd)	(1)	n.d.	2	100
鉛 / Lead (Pb)	(2)	15	2	1000
汞 / Mercury (Hg)	(3)	n.d.	2	1000
六價鉻 / Hexavalent Chromium Cr(VI) by Spot test / boiling water extraction	(4)	Negative	See Note 5	#
多溴聯苯總和 / Sum of PBBs	(5)	n.d.	-	1000
一溴聯苯 / Monobromobiphenyl		n.d.	5	-
二溴聯苯 / Dibromobiphenyl		n.d.	5	-
三溴聯苯 / Tribromobiphenyl		n.d.	5	-
四溴聯苯 / Tetrabromobiphenyl		n.d.	5	-
五溴聯苯 / Pentabromobiphenyl		n.d.	5	-
六溴聯苯 / Hexabromobiphenyl		n.d.	5	-
七溴聯苯 / Heptabromobiphenyl		n.d.	5	-
八溴聯苯 / Octabromobiphenyl		n.d.	5	-
九溴聯苯 / Nonabromobiphenyl		n.d.	5	-
十溴聯苯 / Decabromobiphenyl		n.d.	5	-
多溴聯苯醚總和 (一至九溴) / Sum of PBDEs (Mono to Nona) (Note 4)		n.d.	-	1000
一溴聯苯醚 / Monobromobiphenyl ether		n.d.	5	-
二溴聯苯醚 / Dibromobiphenyl ether		n.d.	5	-
三溴聯苯醚 / Tribromobiphenyl ether		n.d.	5	-
四溴聯苯醚 / Tetrabromobiphenyl ether		n.d.	5	-
五溴聯苯醚 / Pentabromobiphenyl ether		n.d.	5	-
六溴聯苯醚 / Hexabromobiphenyl ether		n.d.	5	-
七溴聯苯醚 / Heptabromobiphenyl ether		n.d.	5	-
八溴聯苯醚 / Octabromobiphenyl ether		n.d.	5	-
九溴聯苯醚 / Nonabromobiphenyl ether	n.d.	5	-	
十溴聯苯醚 / Decabromobiphenyl ether	n.d.	5	-	
多溴聯苯醚總和 (一至十溴) / Sum of PBDEs (Mono to Deca)	n.d.	-	-	

測試報告

Test Report

號碼(No.): CE/2007/C5809A

日期(Date): 2007/12/28

頁數(Page): 3 of 6

新泰伸科技股份有限公司
HTS TECHNOLOGY CO., LTD.
桃園縣楊梅鎮民隆路8號
8, MING LUNG RD., YANG MEI JEN, TAO YUAN, TAIWAN 326, R. O. C.



測試部位描述 (TEST PART DESCRIPTION):

NO.1 : 銅色金屬 (COPPER COLORED METAL)

備註(Note):

1. mg/kg = ppm
2. n.d. = Not Detected (未檢出)
3. MDL = Method Detection Limit (方法偵測極限值)
4. 根據2005年10月13日歐盟會議公佈2005/717/EC, 修訂2002/95/EC內容, 通過解除高分子材質中十溴聯苯醚之使用限制. (According to 2005/717/EC DecaBDE is exempt.)
5. Spot-test:

Negative = Absence of Cr(VI) coating / surface layer(鍍層中偵測不到六價鉻),
Positive = Presence of Cr(VI) coating / surface layer(鍍層中偵測到六價鉻);
The tested sample should be further verified by boiling-water-extraction method if the spot test result cannot be confirmed.

(當該測項無法確認時, 測試樣品可藉由boiling-water-extraction測試方法進一步確認)

Boiling-water-extraction:

Negative = Absence of Cr(VI) coating / surface layer(鍍層中偵測不到六價鉻),
Positive = Presence of Cr(VI) coating / surface layer(鍍層中偵測到六價鉻);
the detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm² sample surface area.

該溶液濃度 ≥ 0.02 mg/kg with 50 cm² (sample surface area)

6. # = Positive indicates the presence of Cr(VI) on the tested areas and result be regarded as not comply with RoHS requirement. (Positive表示測試區域之六價鉻不符合RoHS要求)
Negative indicates the absence of Cr(VI) on the tested areas and result be regarded as comply with RoHS requirement. (Negative表示測試區域之六價鉻符合RoHS要求)
7. "-" = Not Regulated (無規格值)

測試報告

Test Report

號碼(No.): CE/2007/C5809A

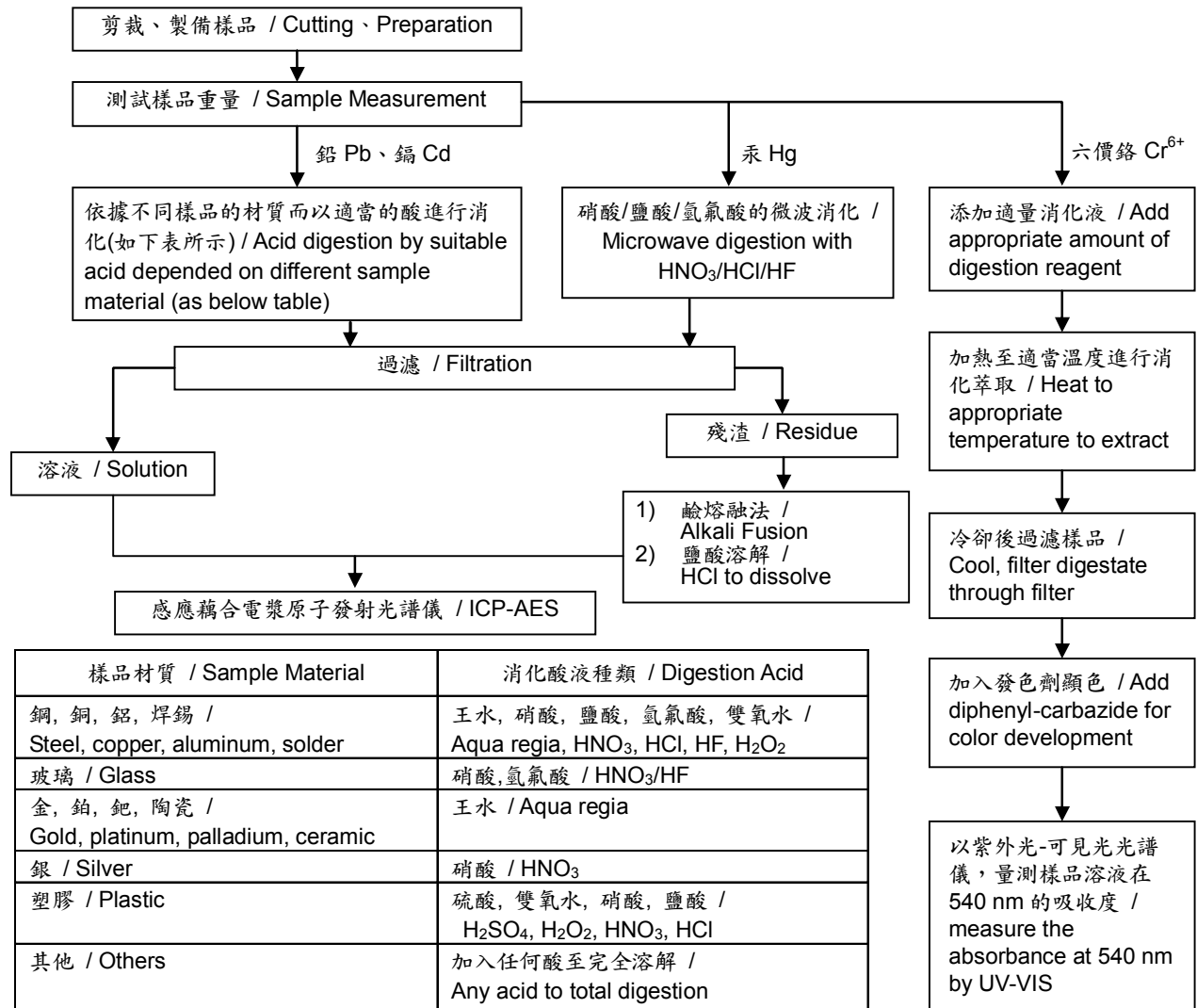
日期(Date): 2007/12/28

頁數(Page): 4 of 6

新泰伸科技股份有限公司
HTS TECHNOLOGY CO., LTD.
桃園縣楊梅鎮民隆路8號
8, MING LUNG RD., YANG MEI JEN, TAO YUAN, TAIWAN 326, R. O. C.



- 1) 根據以下的流程圖之條件，樣品已完全溶解。(六價鉻測試方法除外) / These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr⁶⁺ test method excluded)
- 2) 測試人員：張啓興 / Name of the person who made measurement: Troy Chang
- 3) 測試負責人：龔振裕 / Name of the person in charge of measurement: Chenyu Kung



測試報告 Test Report

號碼(No.): CE/2007/C5809A

日期(Date): 2007/12/28

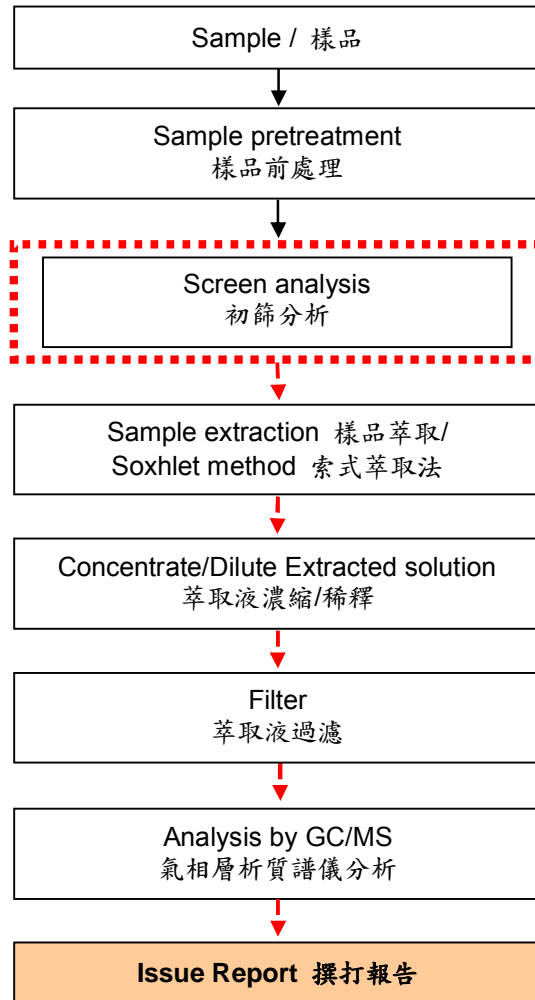
頁數(Page): 5 of 6

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多溴聯苯/多溴聯苯醚分析流程圖 / PBB/PBDE analytical FLOW CHART

初次測試程序 / First testing process ———▶
 選擇性篩檢程序 / Optional screen process▶
 確認程序 / Confirmation process - - - ▶



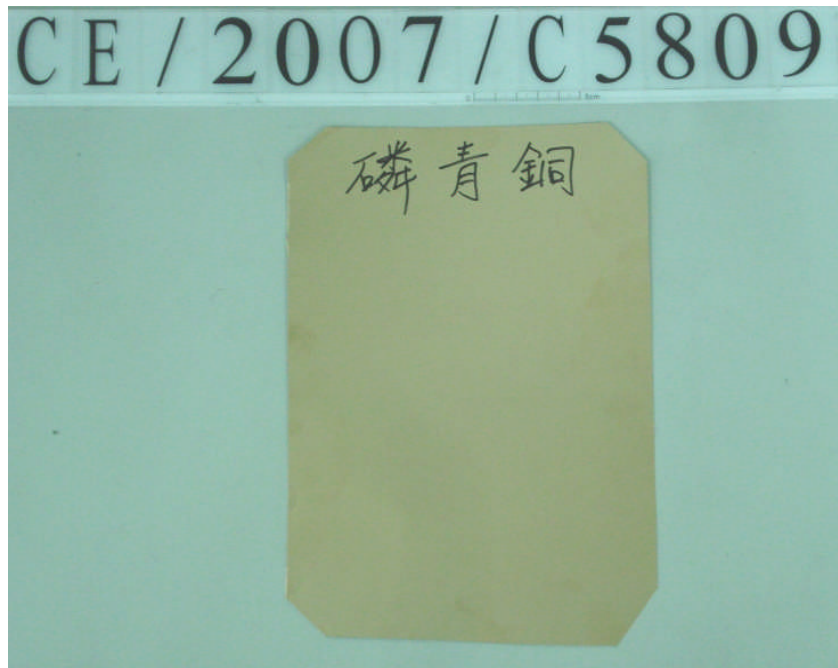
測試報告 Test Report

號碼(No.): CE/2007/C5809A

日期(Date): 2007/12/28

頁數(Page): 6 of 6

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HTS TECHNOLOGY CO., LTD.
桃園縣楊梅鎮民隆路8號
8, MING LUNG RD., YANG MEI JEN, TAO YUAN, TAIWAN 326, R. O. C.



** 報告結尾 **

黑色发泡料



Test Report

NO.: ASZ0803110703C

Date: Mar 14, 2008

Page 1 of 4

Customer: HUIZHOU PROSPERITY FOAM RUBBER INDUSTRY CO., LTD

Address: QIU BAO ROAD, XIN TANG VILLAGE, QIU CHANG TOWN, HUIYANG, HUIZHOU CITY, GUANGDONG PROVINCE, CHINA

Report on the submitted sample said to be

Sample name: EVA

Model: /

Item/Lot No.: /

Material: plastic PE

Buyer: /

Supplier: /

Manufacturer: /

Sample received date: Mar 11, 2008

Testing period: From Mar 11, 2008 to Mar 14, 2008

Testing Requested

As specified by client, to determine the Lead, Cadmium, Mercury, Hexavalent Chromium, PBB & PBDE content in the submitted sample in accordance with Directive 2002/95/EC (RoHS).

Testing method:

With reference to IEC 62321, 111/95/CDV

Testing Item	Pretreatment method	Measuring instrument	MQL
Lead (Pb)	IEC 62321, section 8	ICP-OES	2mg/kg
Cadmium (Cd)	IEC 62321, section 8	ICP-OES	2 mg/kg
Mercury (Hg)	IEC 62321, section 7	CV-AAS	2 mg/kg
Chromium (Cr VI)	IEC 62321, Annex C	UV-VIS	2 mg/kg
PBBs/ PBDEs	IEC 62321, Annex A	GC-MS	5 mg/kg

Conclusion:

-When tested as specified the submitted sample complied with the requirements of commission Decision of 18 Aug 2005 amending Directive 2002/95/EC notified under document 2005/618/EC

*****FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S)*****

Signed for AOV Ltd.

Written by

Inspected by

Approved by

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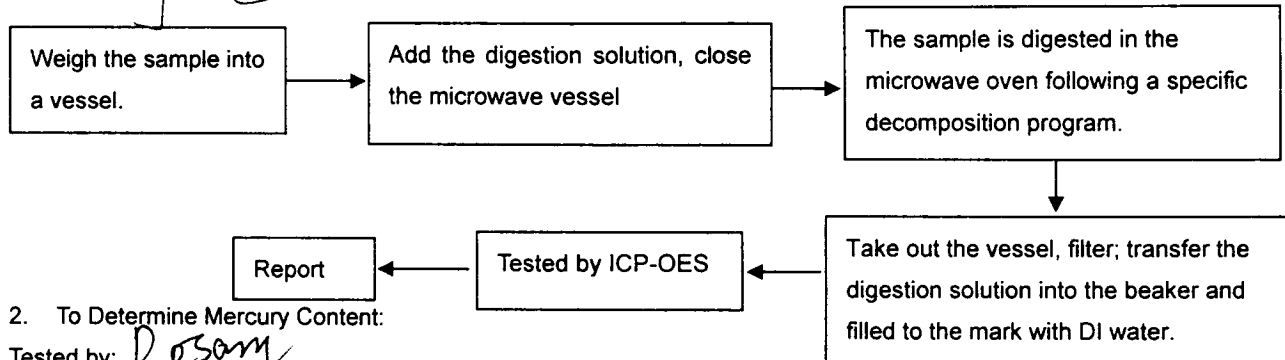
AOV Testing Technology Co., Ltd.

AOV building, Xixiangyuan, Panshan, University city, Shenzhen, Fuyuan Village, Xixi Town, Nanshan District
Tel: +86 755 8600 8900 Fax: +86 755 8600 8292 E-mail: www.aov.com

Test Flow:

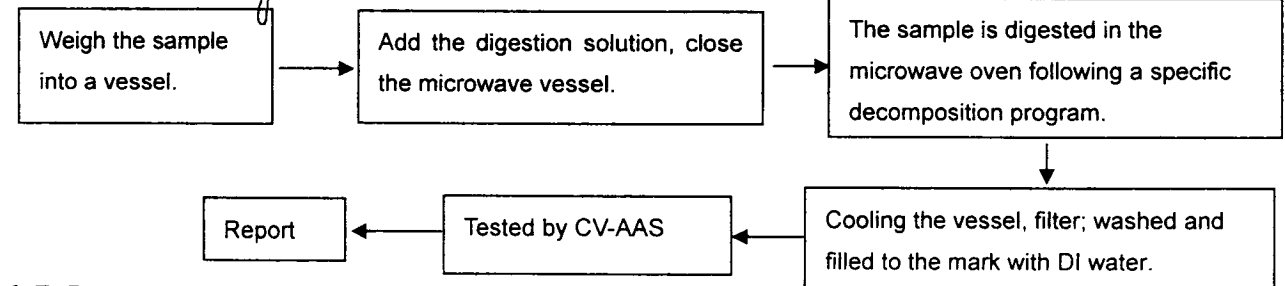
1. To Determine Lead, Cadmium Content:

Tested by: *JURE*



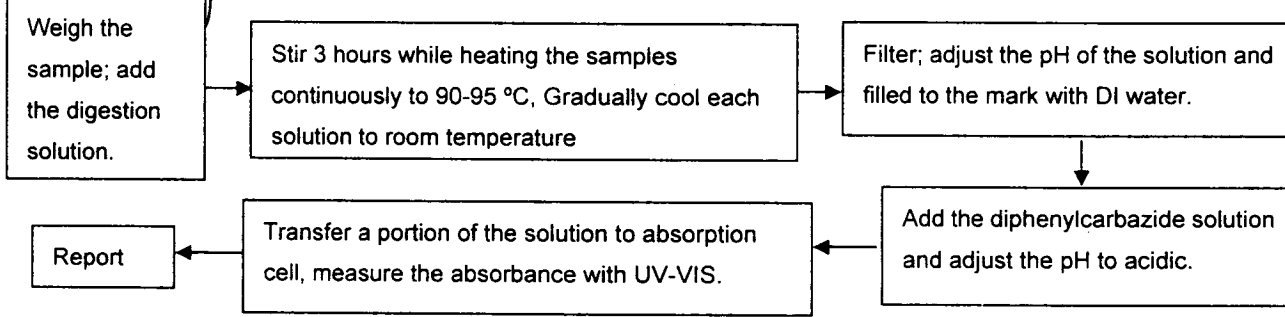
2. To Determine Mercury Content:

Tested by: *ROSAM*



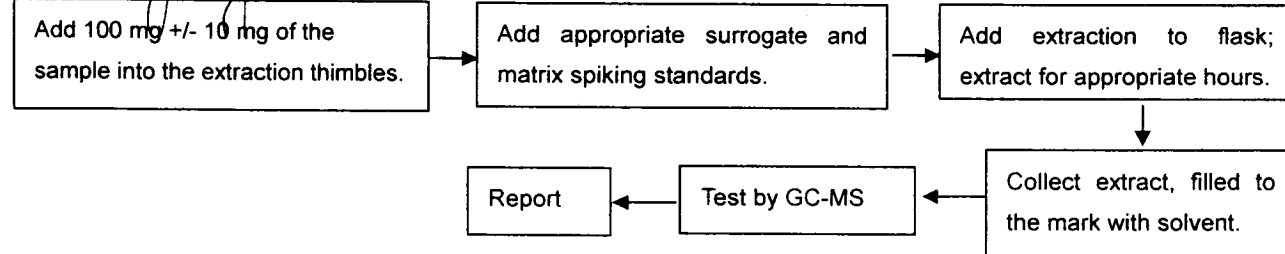
3. To Determine Hexavalent Chromium Content (for Polymer):

Tested by: *GARY*



4. To Determine PBBs/PBDEs Content:

Tested by: *YOUNG*



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Test Report

NO.: ASZ0803110703C

Date: Mar 14, 2008

Page 3 of 4

Test Results:

Item	Unit	RoHS Limit	A
Lead (Pb)	mg/kg	1000	50.9
Cadmium (Cd)	mg/kg	100	3.7
Mercury (Hg)	mg/kg	1000	N.D.
Chromium (CrVI)	mg/kg	1000	N.D.

Flame Retardants	Unit	RoHS Limit	A
PBBs	mg/kg	1000	--
MonoBB	mg/kg	/	N.D.
DiBB	mg/kg	/	N.D.
TriBB	mg/kg	/	N.D.
TetraBB	mg/kg	/	N.D.
PentaBB	mg/kg	/	N.D.
HexaBB	mg/kg	/	N.D.
HeptaBB	mg/kg	/	N.D.
OctaBB	mg/kg	/	N.D.
NonaBB	mg/kg	/	N.D.
DecaBB	mg/kg	/	N.D.
PBDEs	mg/kg	1000	--
MonoBDE	mg/kg	/	N.D.
DiBDE	mg/kg	/	N.D.
TriBDE	mg/kg	/	N.D.
TetraBDE	mg/kg	/	N.D.
PentaBDE	mg/kg	/	N.D.
HexaBDE	mg/kg	/	N.D.
HeptaBDE	mg/kg	/	N.D.
OctaBDE	mg/kg	/	N.D.
NonaBDE	mg/kg	/	N.D.
DecaBDE	mg/kg	/	N.D.*

Specimen Description:

A: black plastic

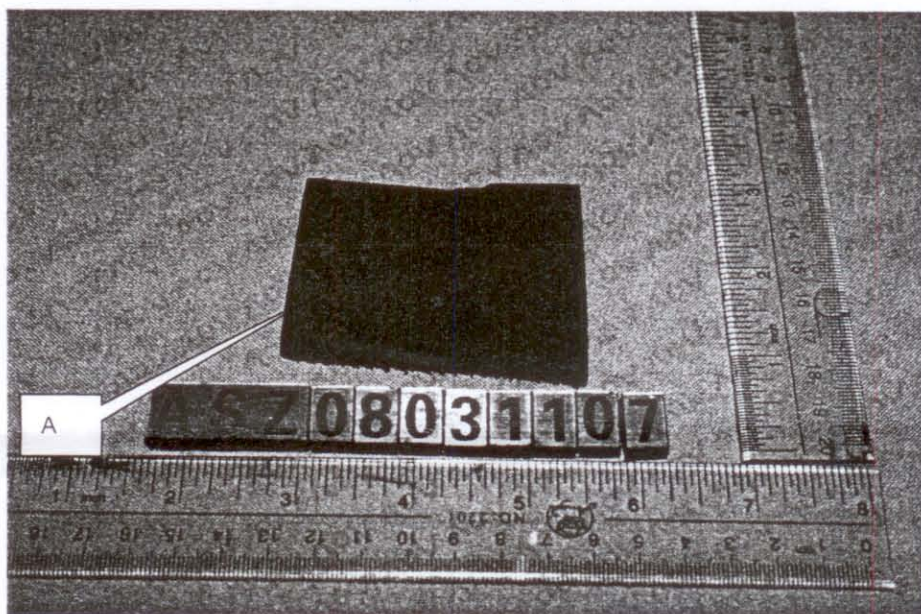
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AOV Testing Technology Co., Ltd.

Add: AOV building, Xueyuan Road East, university city, Shenzhen (Tanglang Village, Xili Town, Nanshan District)
Tel: +86(0)755 8600 8000 Fax: +86(0)755 8600 8282 Http: //www.aovt.com

Note:

- Specimens, which requested to determine Cadmium, Mercury and Lead Content, have been dissolved completely.
- mg/kg=ppm
- N.D.=not detected(<MQL)
- MQL=Method Quantitation Limit
- *(Deca BDE) In polymeric applications is exempted by commission Decision of 13 Oct 2005 amending directive 2002/95/EC notified under document 2005/717/EC
- Photo is included

Photograph of Sample

EVA

End of Report

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Tel: +86(0)755 8600 8000 Fax: +86(0)755 8600 8282 Http: //www.aovt.com

Test Report

No. : CE/2008/65270 Date : 2008/06/23 Page : 1 of 5

SONY CHEMICAL & INFORMATION DEVICE CORPORATION
8F, 1-11-2, OSAKI, SHINAGAWA-KU, TOKYO, 141-0032 JAPAN



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

Sample Description : ADHESIVE
Style/Item No. : G4000 LOT: 7M01-1
Sample Receiving Date : 2008/06/18
Testing Period : 2008/06/18 TO 2008/06/23



Test Requested : In accordance with the RoHS Directive 2002/95/EC, and its amendment directives.

Test Method :
(1) With reference to US EPA Method 3052 for Cadmium Content. Analysis was performed by ICP-AES.
(2) With reference to US EPA Method 3052 for Lead Content. Analysis was performed by ICP-AES.
(3) With reference to US EPA Method 3052 for Mercury Content. Analysis was performed by ICP-AES.
(4) With reference to US EPA Method 3060A & 7196A for Hexavalent Chromium for non-metallic samples. Analysis was performed by UV/Vis Spectrometry.
(5) With reference to US EPA 3540C for PBBs/PBDEs Content. Analysis was performed by GC/MS.

Test Result(s) : Please refer to next page(s).

Chenyu Kung / Operation Manager
Signed for and on behalf of
SGS TAIWAN LTD.
Chemical Laboratory – Taipei

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Test Report

No. : CE/2008/65270 Date : 2008/06/23

Page : 2 of 5

SONY CHEMICAL & INFORMATION DEVICE CORPORATION
8F, 1-11-2, OSAKI, SHINAGAWA-KU, TOKYO, 141-0032 JAPAN



Test results by chemical method (Unit: mg/kg)

Test Item (s):	Method (Refer to)	Result	MDL
		No.1	
Cadmium (Cd)	(1)	n.d.	2
Lead (Pb)	(2)	n.d.	2
Mercury (Hg)	(3)	n.d.	2
Hexavalent Chromium Cr(VI)	(4)	n.d.	2
Sum of PBBs	(5)	n.d.	-
Monobromobiphenyl		n.d.	5
Dibromobiphenyl		n.d.	5
Tribromobiphenyl		n.d.	5
Tetrabromobiphenyl		n.d.	5
Pentabromobiphenyl		n.d.	5
Hexabromobiphenyl		n.d.	5
Heptabromobiphenyl		n.d.	5
Octabromobiphenyl		n.d.	5
Nonabromobiphenyl		n.d.	5
Decabromobiphenyl		n.d.	5
Sum of PBDEs (Mono to Nona)		n.d.	-
Monobromodiphenyl ether		n.d.	5
Dibromodiphenyl ether		n.d.	5
Tribromodiphenyl ether		n.d.	5
Tetrabromodiphenyl ether		n.d.	5
Pentabromodiphenyl ether		n.d.	5
Hexabromodiphenyl ether		n.d.	5
Heptabromodiphenyl ether		n.d.	5
Octabromodiphenyl ether		n.d.	5
Nonabromodiphenyl ether		n.d.	5
Decabromodiphenyl ether		n.d.	5
Sum of PBDEs (Mono to Deca)		n.d.	-

TEST PART DESCRIPTION:

NO.1 : TRANSPARENT TWIN ADHESIVE (EXCLUDING THE RELEASE PAPER)

- Note :
1. mg/kg = ppm
 2. n.d. = Not Detected
 3. MDL = Method Detection Limit
 4. "-" = Not Regulated

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Test Report

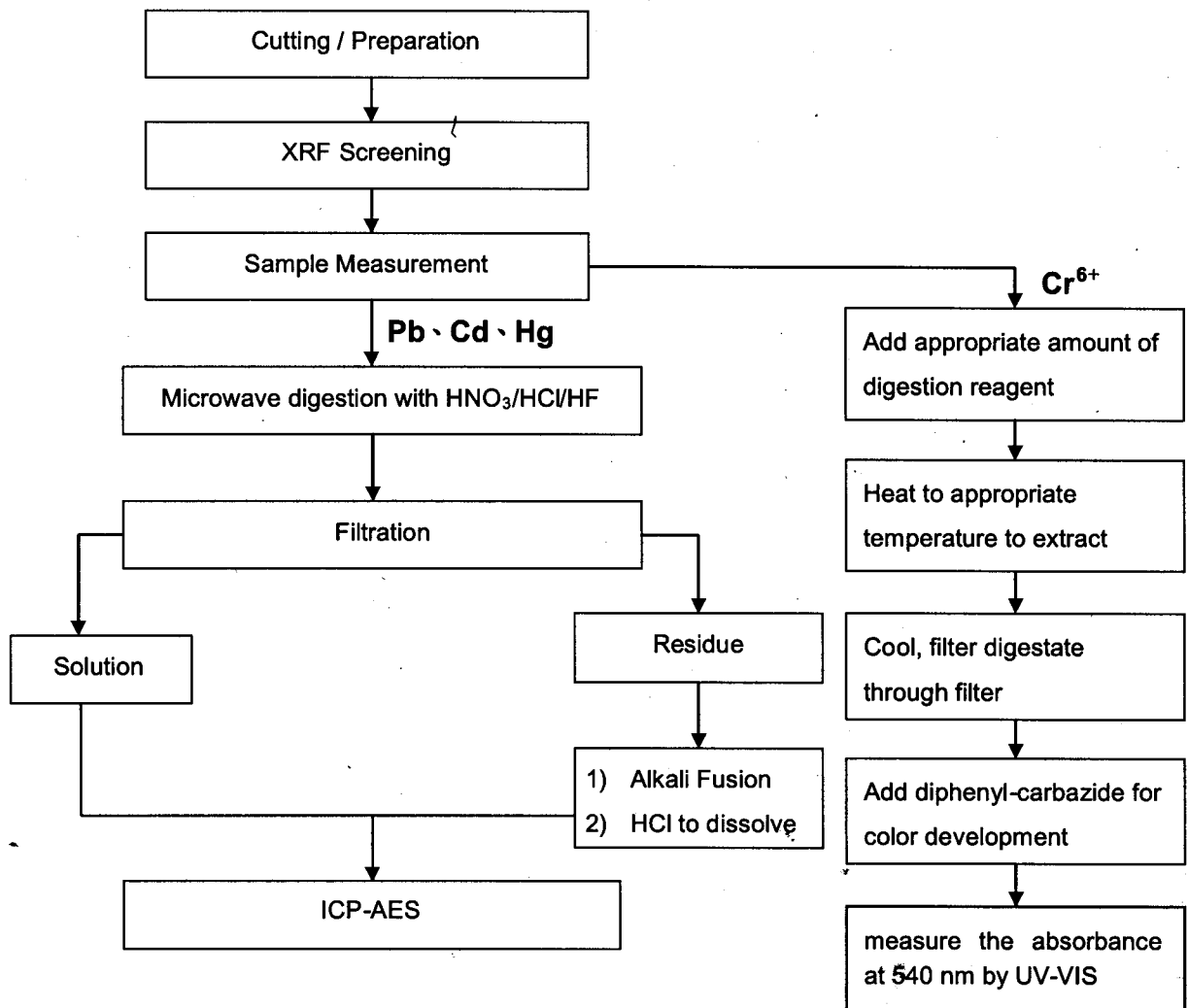
No. : CE/2008/65270 Date : 2008/06/23

Page : 3 of 5

SONY CHEMICAL & INFORMATION DEVICE CORPORATION
8F, 1-11-2, OSAKI, SHINAGAWA-KU, TOKYO, 141-0032 JAPAN



- 1) These samples were dissolved totally by pre-conditioning method according to below flow chart.
(Cr⁶⁺ test method excluded)
- 2) Name of the person who made measurement: Climbgreat Yang
- 3) Name of the person in charge of measurement: Troy Chang



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Test Report

No. : CE/2008/65270 Date : 2008/06/23

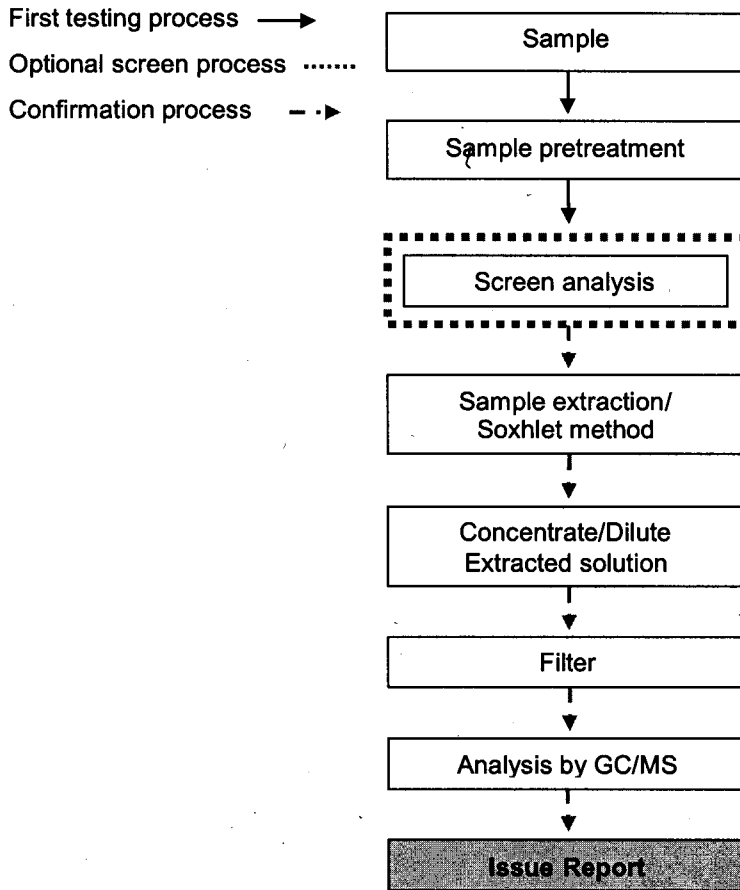
Page : 4 of 5

SONY CHEMICAL & INFORMATION DEVICE CORPORATION
8F, 1-11-2, OSAKI, SHINAGAWA-KU, TOKYO, 141-0032 JAPAN



PBB/PBDE analytical FLOW CHART

- 1) Name of the person who made measurement: Roman Wong
- 2) Name of the person in charge of measurement: Shinjyh Chen



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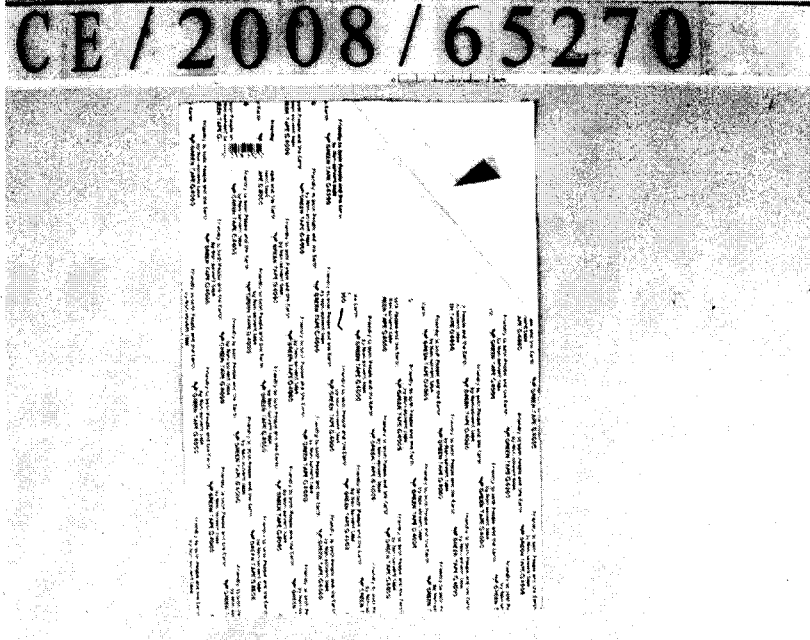
Test Report

No. : CE/2008/65270

Date : 2008/06/23

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SONY CHEMICAL & INFORMATION DEVICE CORPORATION
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**** End of Report ****

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SGS Taiwan Ltd.
台灣檢驗科技股份有限公司

No. 33 Wu Chyuan Road, Wuku Industrial Zone, Taipei County, Taiwan / 台北縣五股工業區五權路33號
t (886-2) 2299-3939 f (886-2) 2299-3237 www.tw.sgs.com

Member of the SGS Group



RoHS 排外條款說明
RoHS Exclusive item Hazardous Substance

本公司保證，本產品均屬環保產品，皆符合 RoHS 法規要求，並適用於 RoHS 規定之排除條款。

We hereby confirm and assure that all parts and sub-materials delivered to your company comply with RoHS Standard and apply to RoHS Exclusive item.

RoHS 合金類排除條款要求如下：

RoHS Exclusive item :

合金種類 alloys item	鉛允許含量(ppm) Lead acceptance concentration
鋼材 steel	<3,500ppm
鋁合金 aluminium alloys	<4,000ppm
銅合金 copper alloys	<40,000ppm
焊錫 solder	<1,000ppm

立承諾書人

公司名稱：華裕實業股份有限公司
company name: WHA YU INDUSTRIAL CO., LTD

公司地址：新竹市公道五路二段 326 號
company address: No.326. Sec 2. Kung Tao 5 Road. Hsin Chu City, Taiwan

聯絡電話：03-5714225
TEL: +886-3-5714225





負責人：_____ 林祺生 _____ 董事長
sign by

立約日期：西元 2006 年 9 月 05 日
Date: 2006. 09. 05



永洋料號：

Item	使用零件料號 (P/N)	使用零件品名 (Description)	零件位置 (Location)	零件數 (Qty.)	零件製造商	零件重量 (mg)	分離之均勻材質 (Homogeneous Material) Sub-parts	原材料顏色 (塑膠、油墨及漆料必須) (Required for plastic, ink and paint)	鍍層存在與否/鍍層材質說明 (If the plating layer exist or not?(Y/N)If yes, please describe the material of the plating layer)	分離之均勻材質重量 (mg)	ICP測定數據 mg/kg=ppm						實驗室名稱	分析報告號碼	檢測報告日期	第三公證單位化學分析報告 Attached test report	物質成份表			材質證明	
											鉛(Pb)	鎘(Cd)	汞(Hg)	六價鉻 (Cr+6)	PBB	PBDE					元素化合物名稱	元素化合物比重 (%)	排除條款		
1	100-1003096-AZ	Cable	②	1	SHOWA	439	Silver Coatedv annealed copper wire	—	—	40	ND	ND	ND	Negative	NA	NA	SGS	CE/2007/C0427	2007/12/6	CE_2007_C0427	Cu	98.368	NA	—	
							FEP	Natural	—	93	ND	ND	ND	ND	ND	ND	ND	SGS	CE/2007/C0427		2007/12/6	Ag	0.62		NA
							Tinned copper alloy wire braid shield	—	—	184	ND	ND	ND	Negative	NA	NA	SGS	CE/2007/C0427	2007/12/6		Pb	<0.0021	NA		
							FEP	Gray	—	122	ND	ND	ND	ND	ND	ND	ND	SGS	CE/2007/C0427		2007/12/6	Bi	<0.0016		NA
2	100-4012282-AZ	PIFA	①	1	HTS	1490	Phos.Bronze	—	—	1490	15	ND	ND	Negative	ND	ND	SGS	CE/2007/C5809 A	2007/12/28	CE_2007_C5809A	Cu	85.95-91.50	YES	—	
																						Pb	3.5-4.5		YES
																						Zn	1.5-4.5		YES
																						P	0.01-0.05		YES
3	907-11438-A	雙面泡棉膠	③	1	PROSPERITY	110	EVA	Black	—	110	50.9	3.7	ND	ND	ND	ND	AOV	ASZ0803110703 C	2008/3/14	ASZ0803110703C	EVA	78.6	NA	—	
					SONY		G4000	Transparent	—		ND	ND	ND	ND	ND	ND	ND	SGS	CE/2008/65270		2008/6/23	CE_2008_65270	G4000		24.4

Item	永洋料號 (P/N)	永洋品名 (Description)	原廠 / 製造商型號 (SUPPLIER PN)	原廠 / 製造商名稱	零件重量 (mg)	分層之均勻材質 (Homogeneous Material) Sub-parts	原材料顏色 (塑膠、油墨及漆料必備) The color of raw material (Required for plastic, ink and paint)	鍍層存在與否/鍍層材質說明 If the plating layer exist or not?(Y/N)/If yes, please describe the material of the plating layer	分層之均勻材質重量(mg)	ICP測定數據 mg/kg=ppm						實驗室名稱	分析報告號碼	檢測報告日期	第三公證單位化學分析報告 Attached test report	物質成份表			材質證明			
										鉛(Pb)	鎘(Cd)	汞(Hg)	六價鉻 (Cr+6)	PBB	PBDE					元素/化合物名稱	元素/化合物比重 (%)	排除條款				
1	—	Cable	KHXC-32AWG-SB-TA	SHOWA	439	Silver Coatedv annealed copper wire	—	—	40	ND	ND	ND	Negative	NA	NA	SGS	CE/2007/C0427	2007/12/6		Cu	98.368	NA	—			
						FEP	Natural	—	93	ND	ND	ND	ND	ND	ND	SGS	CE/2007/C0427	2007/12/6		Ag	0.62	NA				
						Tinned copper alloy wire braid shield	—	—	184	ND	ND	ND	Negative	NA	NA	SGS	CE/2007/C0427	2007/12/6		Pb	<0.0021	NA				
						FEP	Gray	—	122	ND	ND	ND	ND	ND	ND	SGS	CE/2007/C0427	2007/12/6		Bi	<0.0016	NA				
2	—	PIFA	—	HTS	1490	Phos.Bronze	—	—	1490	15	ND	ND	Negative	ND	ND	SGS	CE/2007/C5809A	2007/12/28		Other	REM	NA	—			
						FEP	Gray	—	122	ND	ND	ND	ND	ND	SGS	CE/2007/C0427	2007/12/6	FEP		100	NA					
						Cu	98.368	NA	Cu	85.95-91.50	YES															
						Ag	0.62	NA	Pb	3.5-4.5	YES															
3	—	雙面泡棉膠	—	PROSPERITY	110	EVA	Black	—	110	50.9	3.7	ND	ND	ND	ND	AOV	ASZ0803110703C	2008/3/14		Zn	1.5-4.5	YES	—			
				G4000 LOT:7M01-1		SONY	G4000	Transparent		—	ND	ND	ND	ND	ND	ND	SGS	CE/2008/65270		2008/6/23	P	0.01-0.05		YES		
		G4000	SONY	G4000	Transparent	—	110	G4000	Transparent	—	110	ND	ND	ND	ND	ND	ND	ND	SGS	CE/2008/65270	2008/6/23		Other	REM	YES	—
																							EVA	78.6	NA	