

承 認 書

SPECIFICATIONS FOR APPROVAL

顧 客 CUSTOMER	緯創中山
品 名 PART NAME	HIGH POWER CONNECTOR
料 號 PART NO.	C18055-124D3-Y
顧 客 料 號 CUSTOMER PART NO.	50.64W23.001
版 次 VERSION	00

客 戶 方	承 制 方
	<div>CONTROLLED DOC ALLTOP 2013.05.08 DCU-T</div> <p>(本承認書經凡甲文控單位用印後始生效力)</p>

凡 甲 科 技 股 份 有 限 公 司

ALLTOP TECHNOLOGY CO., LTD.

台北縣中和市中山路三段 102 號 3 樓

TEL:886-2-22251688 FAX:886-2-22250882

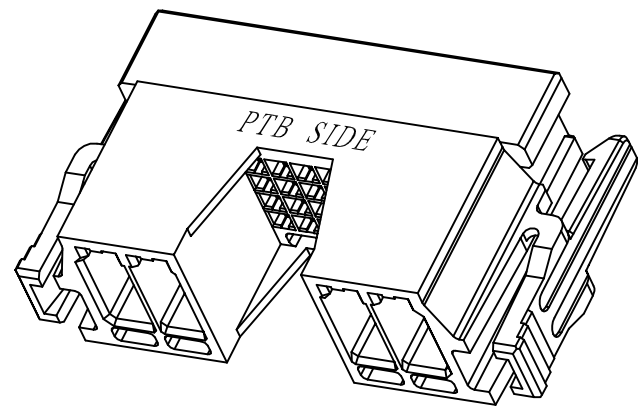
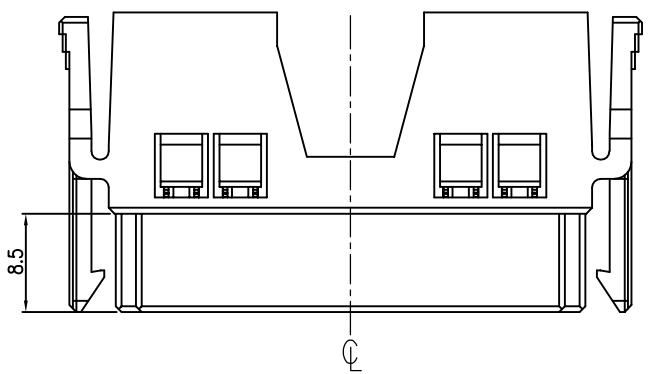
3F.,NO.102,Sec.3,Jhongshan Rd., Jhonghe City, Taipei County 235,Taiwan(R.O.C.)

SD-022

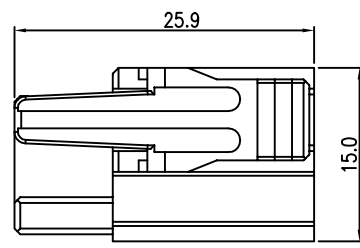
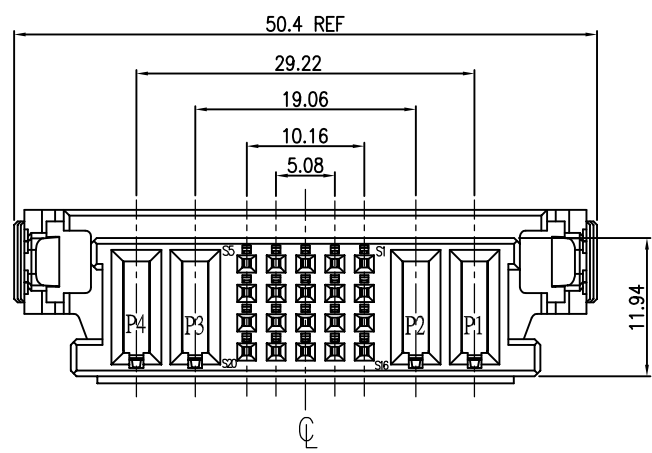
## 承認書制定、修訂履歷

[illegible]

1		2		3		4		5		6		
PRODUCT NO.		Strictly Confidential	級別	適用廠區	可讀取人資訊			Hazardous Substances Free Compliant ALLTOP of Substances Management Procedure	REV.	C1 NO.	DR	DATE
C18055-XXXXX-X			2-Y	集團	內部-依文件內容說明，或洽功能性部門主管同意 外部-承認書客戶/客戶圖面下載平台/文控單位文件申請單授權客戶				1-1	2014080011	WSM	08/12/14'



- NOTES:
- MATERIAL :  
HOUSNIG : GLASS FILLED POLYESTER, UL 94 V-0  
RATED OR OTHER EQUIVALENT RESINS .  
TERMINAL : COPPER ALLOY
  - FINISH :  
CONTACTS : GOLD PLATING IN THE CONTACT AREA AND  
SELECTIVE PLATING IN THE SOLDERTAIL AREA,  
WITH 60u"(min.) NICKEL UNDERPLATING OVERALL.
  - ELECTRICAL CHARACTERIST :  
(1) Operating Temperature :  
105(max.) Degree C  
(2) Current Rating :  
Power Contact: 32A 600Vac (Per pin 48A)  
Signal Contact: 0.5A 600Vac  
(3) Insulation Resistance :  
Power Contact: 10000 megohms(500 volt direct current)  
Signal Contact: 500 megohms(500 volt direct current)
  - PART NUMBER DESCRIPTION :  
C18055-X XX XX-X  
PACKING  
W: BAG  
PLATING CHARACTERISTIC:  
D3  
NO. OF POSITIONS  
24 : 2P+20S+2P PIN  
COLOR  
1: BLACK

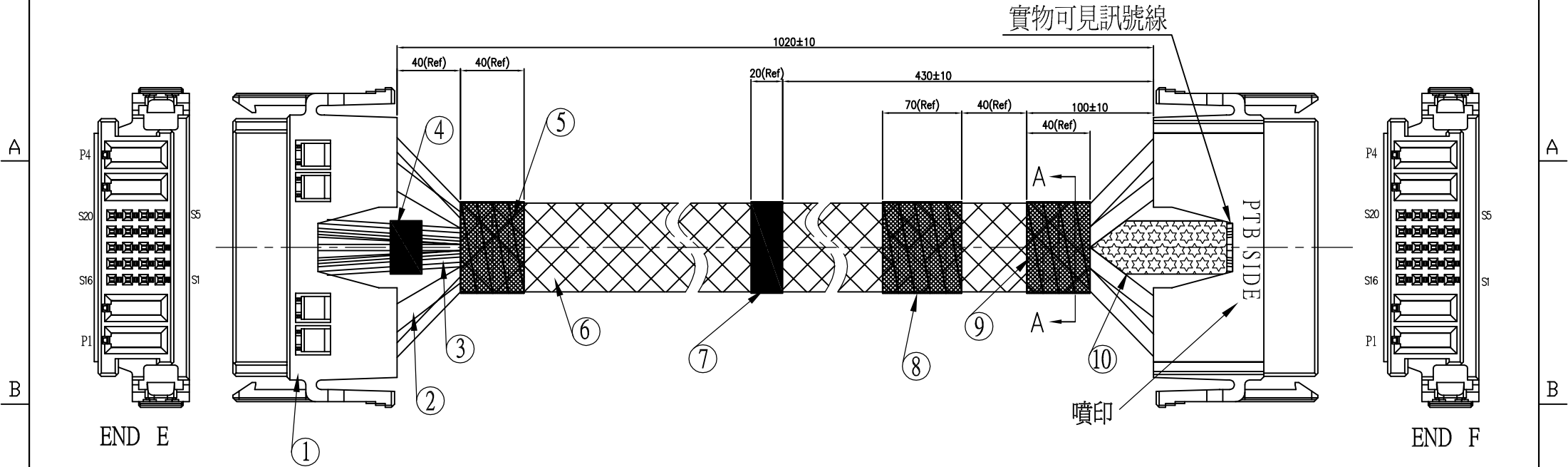


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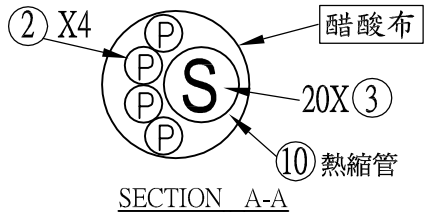
TOLERANCE UNLESS OTHERWISE SPECIFIED		INSPECTION COPY	凡甲科技集團 ALLTOP TECHNOLOGY CO., LTD.				
LINEAR	ANGLES		TITLE				
.0 ± 0.25	0. ± 2°	PROJECTION	POWER BLADE MALE 30A				
.00 ± 0.15	.0 ± 1°		PRODUCT FAMILY POWER CONNECTOR				
.000± 0.10	.00± 0.5°		DWG NO. C18055				
DESIGN	WSM	09/27/12'	FILE NO. C18055-101-1				
DRAWING	WSM	08/12/14'	SIZE UNIT SCALE SHEET REV.				
CHECK	K.J.LIU	08/12/14'	A4	mm	1.5 :1	10F2	1-1
APPRO.	JONATHAN	08/12/14'	WI-RD-14-002-02( 生效日期: 140805)-(1/1)				

1		2		3		4		5		6	
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END E		END F	
P1	<u>UL1015 12awg BLACK</u>	P1	
P2	<u>UL1015 12awg BLACK</u>	P2	
P3	<u>UL1015 12awg BLACK</u>	P3	
P4	<u>UL1015 12awg BLACK</u>	P4	
S1	<u>UL1007 26awg GREEN</u>	S1	
S2	<u>UL1007 26awg GREEN</u>	S2	
S3	<u>UL1007 26awg GREEN</u>	S3	
S4	<u>UL1007 26awg GREEN</u>	S4	
S5	<u>UL1007 26awg GREEN</u>	S5	
S6	<u>UL1007 26awg GREEN</u>	S6	
S7	<u>UL1007 26awg GREEN</u>	S7	
S8	<u>UL1007 26awg GREEN</u>	S8	

END E		END F	
S9	<u>UL1007 26awg GREEN</u>	S9	
S10	<u>UL1007 26awg GREEN</u>	S10	
S11	<u>UL1007 26awg GREEN</u>	S11	
S12	<u>UL1007 26awg GREEN</u>	S12	
S13	<u>UL1007 26awg GREEN</u>	S13	
S14	<u>UL1007 26awg GREEN</u>	S14	
S15	<u>UL1007 26awg GREEN</u>	S15	
S16	<u>UL1007 26awg GREEN</u>	S16	
S17	<u>UL1007 26awg GREEN</u>	S17	
S18	<u>UL1007 26awg GREEN</u>	S18	
S19	<u>UL1007 26awg GREEN</u>	S19	
S20	<u>UL1007 26awg GREEN</u>	S20	



熱縮管	1	PCS	10
醋酸布-20(寬度)	120	MM	9
醋酸布-20(寬度)	200	MM	8
醋酸布-20(寬度)	66	MM	7
黑色編織網管	1	PCS	6
醋酸布-20(寬度)	120	MM	5
醋酸布-20(寬度)	46	MM	4
UL1007 26AWG GREEN	20	PCS	3
UL1015 12AWG BLACK	4	PCS	2
塑膠本體	2	PCS	1
Description	Qty	Unit	Item

注：醋酸布 ⑤ ⑧ ⑨ 為螺旋纏繞方式

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.00 ± 0.15	.0 ± 1°		PRODUCT FAMILY POWER CONNECTOR				
.000± 0.10	.00± 0.5°		DWG NO. C18055				
DESIGN	WSM	09/27/12'	FILE NO. C18055-201-1				
DRAWING	ZSX	08/12/14'	SIZE UNIT SCALE SHEET REV.				
CHECK	K.J.LIU	08/12/14'	A4	mm	1 : 1	2 OF 2	1-1
APPRO.	JONATHAN	08/12/14'					

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ALLTOP TECHNOLOGY	PRODUCT SPECIFICATION  FOR C180	NUMBER    SPEC180-001	
		PAGE 1 OF 10	REV. 3
		AUTHORIZED BY RONG ZHI QIANG	DATE 11/29/'10
TITLE  POWER CONNECTOR, RECEPTACLE			

- 1.0 OBJECTIVE
- This specification defines the performance, test, quality and reliability requirements of the Power Blade Connector System.
- 2.0 SCOPE
- This specification is applicable to the termination characteristics of separable right angle and vertical headers when mated to the right angle and vertical receptacles.

3.0 GENERAL

This document is composed of the following sections:

PARAGRAPH	TITLE	PAGE
1.0	OBJECTIVE	1
2.0	SCOPE	1
3.0	GENERAL	1
4.0	APPLICABLE DOCUMENTS	1
5.0	REQUIREMENTS	2
6.0	ELECTRICAL CHARACTERISTICS	3
7.0	MECHANICAL CHARACTERISTICS	4
8.0	ENVIRONMENTAL CONDITIONS	5
9.0	QUALITY ASSURANCE PROVISIONS	6
FIGURE I	MEASUREMENT OF LOW LEVEL CONTACT RESISTANCE	7
TABLE I	PRODUCT QUALIFICATION TEST SEQUENDES	

- 4.0 APPLICABLE DOCUMENTS
- 4.1 SPECIFICATION
- ALLTOP TECHNOLOGY Engineering drawing related with the product of C181 series.
- 4.2 MILITARY STANDARD
- |              |  |
|--------------|--|
| MIL-STD-105  | Sampling Procedures and Table for Inspection by Attributes |
| MIL-STD-202F | Test Methods for Electronics Component Parts               |
| MIL-STD-275  | Printed Wiring Board for Electronic Equipments             |



RD003-01A01

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		PAGE 2 OF 10	REV. 3
		AUTHORIZED BY RONG ZHI QIANG	DATE 11/29/'10

TITLE	POWER CONNECTOR, RECEPTACLE
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MIL-STD-1344      Test Methods for Electrical Connectors	
4.3	<div>MILITARY SPECIFICATION</div> <div>MIL-C-45662      Calibration System Requirement</div> <div>MIL-G-45204      Gold Plating, Electrodeposited</div>
4.4	<div>FEDERAL SPECIFICATION</div> <div>QQ-N-290      Nickel Plating (Electrodeposited)</div>
4.5	<div>INDUSTRY SPECIFICATION/STANDARD</div> <div>UL94      Test for Flammability of Plastic Material</div> <div>JIS-H-3731      Phosphor Bronze Sheet, Plates and Strip, JIS-C-5191R</div> <div>JIS-H-3130      Brass plate, sheet, and strip, ASTM B 36-77</div> <div>EIA 364      Electrical Connector Test Procedure</div> <div>IEC-512-3      Current-carrying Capacity test</div>
5.0	<div>REQUIREMENTS</div> <div>5.1 QUALIFICATION</div> <div>Connectors furnished under this specification shall be capable of meeting the qualification test requirements specified herein.</div> <div>5.2 MATERIALS</div> <div>The material for each component shall be as specified herein, or equivalent.</div> <div>Substitute material shall meet the performance requirements of this specification.</div> <div>5.2.1 Housing</div> <div>Glass-filled high-temp thermoplastic (UL-94 V-0 Rated), color in black or other equivalent high performance resins.</div> <div>5.2.2 Power Contacts</div> <div>Copper Base Alloy.</div> <div>5.2.3 Signal Pin Contacts</div> <div>Copper Base Alloy.</div> <div>5.3 FINISH</div> <div>The finish for applicable components shall be as specified herein or equivalent.</div> <div>5.3.1 TERMINAL</div> <div>Terminals shall be plated at the contact area with specified thickness of gold, with 1.27</div>



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		PAGE 3 OF 10	REV. 3
		AUTHORIZED BY RONG ZHI QIANG	DATE 11/29/'10
TITLE POWER CONNECTOR, RECEPTACLE			

mm (minimum) nickel under-plated overall.

#### 5.4 DESIGN AND CONSTRUCTION

The connector shall be a multi-piece design, consisting of molded housing, terminals, spacer, or accessories, if needed.

5.5.Workmanship includes freedom from blistering, cracks, discoloration, etc.

#### 6.0 ELECTRICAL CHARACTERISTICS

##### 6.1 Signal tested at Low Level (LLCR)

The low level contact resistance shall not exceed 20 milliohms after environmental exposure when measured in accordance with EIA 364-06.

The following details shall apply:

- A. Test Voltage: 20 millivolts DC max open circuit.
- B. Test Current: Not exceed 100 milliamps.

##### 6.2 Power tested at Specified Current

The contact resistance at a specified current shall not exceed 2.0 milliohms initially or after mating cycles and environmental exposure when measured in accordance with EIA 364-06.

The following details shall apply:

- A. Method of connection: Attached current and voltage probes from header pin on High Definition Multi-media Interface to solder-tails on mother board as of the FIGURE I
- B. Test current: 30 amperes DC.
- C. Open circuit voltage: 20 millivolts direct current.

##### 6.3 Insulation Resistance

The insulation resistance of mated connectors shall not be less than 10000 megohms for Power contact, and 500 megohms for signal initially and after environmental exposure when measured in accordance with EIA 364-21.

The following details shall apply:

- A. Test voltage: 500 volts direct current.
- B. Electrification time: 2 minutes.
- C. Measurement points: Between the adjacent contacts or ground.

##### 6.4 Dielectric Withstanding Voltage

There shall be no evidence of arc-over, insulation breakdown or excessive leakage current (>1 Milliampere) when terminated connectors are tested in accordance with EIA 364-20.

The following details shall apply:

- A. Test voltage: 1000 volts per signal contact, 2500 volts per power contact.
- B. Test duration: 60 seconds.
- C. Connection method: 760 Torr-sea level.



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		<b>PAGE 4 OF 10</b>	<b>REV. 3</b>
		<b>AUTHORIZED BY RONG ZHI QIANG</b>	<b>DATE 11/29/'10</b>

<b>TITLE</b>	<b>POWER CONNECTOR, RECEPTACLE</b>
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D. Measurement points: between the adjacent contacts or ground.

#### 6.5 Current Rating

The temperature rise above ambient shall not exceed 30°C at any point in the system when all power contacts are powered with each contact being powered at 30 amperes or only one Power contact is power to 48 amperes. The temperature rise above ambient shall not exceed 30°C at any point in the system when all signal contact are powered with each contact being powered at 1.0 amperes or only One signal contact is powered at 3.0 amperes. The following details shall apply:

A. Ambient conditions: Still air at 25°C.

### 7.0 MECHANICAL CHARACTERISTICS

#### 7.1 Mating/Un-mating Force

The force to mate a receptacle connector and compatible header shall not exceed 710 grams per power contact and 100 grams per signal contact. The un-mating force shall not be less than 225 grams per power contact and 18 grams per signal contact. The following details shall apply:

- A. Cross Head Speed: 25.4 mm per minute.
- B. Lubrication: None.
- C. Utilize free floating fixtures.
- D. Reference EIA 364-13.

#### 7.2 Normal Force

The contact normal force shall not be less than 350 grams per beam for the power contacts and 50 grams (nor greater than 120 grams) per beam for the signal contacts when tested in accordance With EIA 364-04.

#### 7.3 Contact Retention

Individual power and signal contacts shall withstand an axial retention load of 0.68 kilograms. Individual power receptacle contacts will withstand an axial load of 2.5 kilograms minimum to seat further into Housing.

- A. Rate of 12.7 mm/minute without dislodging from the housing cavity.
- B. Test 30 contacts.
- C. As per MIL-STD-1344A, Method 2007.1.

#### 7.4 Individual Pin Insertion/Retention Force

The force required to insert an individual compliant pin into a plated through hole in a printed circuit board at a rate of 5.08 mm/minute shall not exceed 2.72 kilograms for signal receptacle contacts, 9.52 kilograms for signal header pins and 11.34 kilograms per tail for power contacts. The retention force in the axial direction opposite that of insertion shall not be less than 0.68 kilograms for signal receptacle contacts, 1.36 kilograms for signal header pins and 2.27 kilograms for powers contacts.



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### 7.5 Board Lock Retention to Housing

Individual board locks shall withstand an axial load of 1.36 kilograms minimum.

- Rate of 12.7 mm/minute without dislodging from the housing cavity.
- Test 30 board locks.

## 8.0 ENVIROMENTAL CHARACTERISTICS

### 8.1 Thermal Shock-EIA 364-32

- A. Temperature Range: -20 to +80°C (36 cycles)
- B. Time at Each Temperature: To refer to EIA 364-32 (5 Minutes, maximum)

### 8.2 Humidity, Steady State-EIA 364-31, Method II

- A. Relative Humidity: 95%.
- B. Temperature: 40°C.
- C. Test Duration: 96 hours.

### 8.3 High Temperature Life 364-17

- A. Test Duration: 21 days.
- B. Temperature: 105 °C.
- C. Per-condition: perform number of durability cycles specified for product.

### 8.4 Environmental Sequence

Phase I – Thermal Shock, EIA 364-32

- A. Test Duration: 36 cycles.
- B. Temperature Range: Between -20 and +80°C.
- C. Time at Each Temperature: To refer to EIA 364-32 based on product mass.
- D. Transfer Time: 5 minutes, maximum.

Phase II – Humidity, EIA 364-31, Method II

- A. Test Duration: 10 days.
- B. Relative Humidity: 95%.
- C. Temperature: 40°C.

Phase III – High Temperature Life, EIA 364-17

- A. Test Duration: 21 days.
- B. Temperature: 105°C.
- C. Pre-condition: Perform number of durability cycles specified for product.

### 8.5 Industrial Mixed Flowing Gas (IMFG), EIA364-65

- A. Class: IIA.
- B. Duration: 20 days.



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<b>TITLE</b>	<b>POWER CONNECTOR, RECEPTACLE</b>
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- C. Mated.  
D. Test contact resistance after 10 and 20 days.

8.6 Vibration Sinusoidal, EIA 364-28

- A. Condition III  
B. Vibration Amplitude: 0.06" DA or  $\pm 15G$ .  
C. Frequency Range: 10 to 2000 to 10 HZ.  
D. Sweep Time and Duration: 20 minutes per cycles, 4 hours along each of three orthogonal axes.  
E. Mounting: rigidly mount assemblies.  
F. No Discontinuities of greater than 10 nanoseconds.

8.7 Mechanical Shock, EIA 364-27

- A. Condition I (50G, 11 millisecond half sine wave).  
B. Shocks: 3 shocks in both directions along each of three orthogonal axes (18 totals).  
C. Mounting: rigidly mount assemblies.  
D. No discontinuities of greater than 10 nanoseconds..

8.8 Durability-Standard laboratory procedure as applicable to the specific product

- A. Number of Cycles: 200.  
B. Cycling rate: 1.27 mm per minute.

8.9 Solderability – ANSI-J-002, Test Condition A

- A. Steam aging : 4 hours.  
B. Pcb termination area was evaluated and meets the requirements of ANSI –J -002.

8.10 Resistance to Solder Heat – EIA 364-56

- A. Test Condition: E.  
B. There shall be no evidence of physical or mechanical damage.

8.11 Operating temperature:

-20°C to 105°C.

9.0 QUALITY ASSURANCE PROVISIONS

9.1 Equipment Calibration

All test equipment and inspection facilities used in the performance of any test shall be maintained in calibration system in accordance with MIL-C-45662.

9.2 Inspection Conditions

Unless otherwise specified herein, all inspections shall be performed under the following ambient



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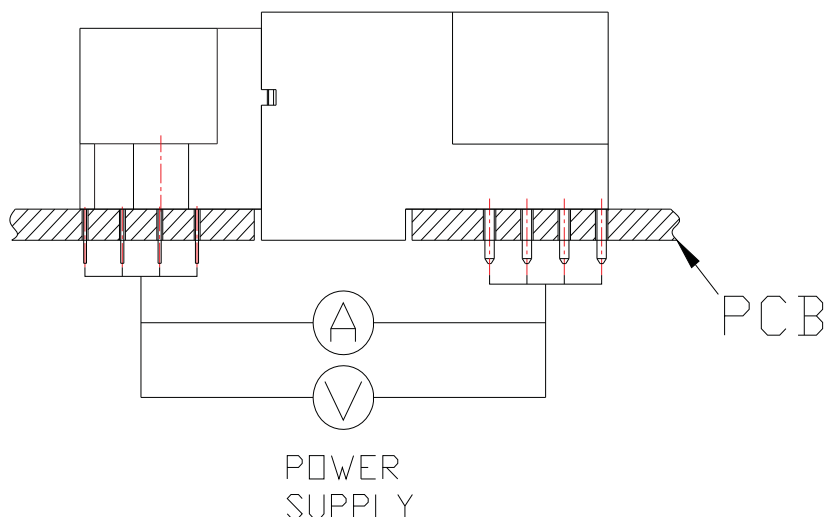
conditions:

A. Temperature: 25 ± 5 degrees centigrade.

B. Relative humidity: 30 % to 60 %

C. Barometric pressure: Local ambient.

FIGURE I : MEASUREMENT OF LOW LEVEL CONTACT RESISTANCE



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Test	PAP	Test Group													
		1	2	3	4	5	6	7	8	9	10	11	12	13	14
		Test Sequence													
Examination of Product	5.5	1 20	1 12	O M	1 8	1 8	1 3	1 8	O M	1 3	1 3	1	1 3	1 11	1 3
Contact Resistance Low Level	6.1	3 6 9 14 17	3 6 10	I T T E	2 6			2 6	I T T E D					3 6 9	
Contact Resistance At specified current	6.2	4 7 10 15 18	4 7 11		3 7			3 7							
Insulation Resistance	6.3					2 6									
Dielectric Withstanding Voltage	6.4					3 7									
Current Rating	6.5									2					
Mating/Un-mating Force	7.1	2 11 13 19	2 8												
Normal Force	7.2						2								
Contact Insertion/Retention	7.3												2		
Individual Pin Insertion (new pin for each insertion)	7.4													2 5 8	
Individual Pin Retention	7.4													4 7 10	
Board Lock Retention	7.5														2
Thermal Shock	8.1					4									



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Humidity, Steady State	8.2					5									
Hi Temperature Life	8.3							5							
Environmental Sequence Phase I Phase II Phase III	8.4	5													
		8													
		16													
Ind. Mixed Flowing Gas	8.5		9												
Vibration	8.6					4									
Mechanical Shock	8.7					5									
Durability	8.8	12	5					4							
Solderability	8.9										2				
Res. To Soldering Heat	8.10											2			

TABLE 1 QUALIFICATION TESTING
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REVISION RECORD				
REV.	PAGE	DESCRIPTION	DCN#	DATE
1	ALL	New Release		04/26/07
2	1, 2, 3, 4, 5	Correction Typo		07/16/10
	7.1、 7.3	Altern		
3	1	Correction Typo Page		
	3	Added 5.5		
	6	Added 8.9 Correction Typo		
	5.5、 7.1	Correction Test Sequence		
	8.9	Alter		11/29/10



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				審核單號	品保部 有證書 杜燕會



# 測試報告 Test Report

號碼(No.) : CE/2013/42027 日期(Date) : 2013/04/26 頁數(Page) : 1 of 6

宏瑋電子(深圳)有限公司

HONOR ELECTRON (S.Z.) CO., LTD.

中國廣東省深圳市寶安區松崗鎮碧頭村第二工業區

BITOU INDUSTRIAL ZONE BITOU TOWN SONGGANG BAOAN SHENZHEN GUANGDON CHINA



以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by/on behalf of the applicant as):

樣品名稱(Sample Description) : Au (鍍金層)  
收件日期(Sample Receiving Date) : 2013/04/10  
測試期間(Testing Period) : 2013/04/10 TO 2013/04/26

測試需求(Test Requested) : (1) 依據客戶要求, 參考RoHS 2011/65/EU Annex II 指令進行鎘, 鉛, 汞, 六價鉻測試. (As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI) contents in the submitted sample.)  
(2) 依據客戶指定, 進行全氟辛酸 (鉍)、全氟辛烷磺酸測試. (As specified by client, to test PFOA, PFOS contents in the submitted sample.)

測試方法(Test Method) : 請見下一頁 (Please refer to next pages).

測試結果(Test Results) : 請見下一頁 (Please refer to next pages).

結論(Conclusion) : 根據客戶所選擇的部位測試, 其鎘, 鉛, 汞, 六價鉻的測試結果符合RoHS指令 2002/95/EC的更新指令2011/65/EU之要求 (Based on the performed tests on selected part of submitted sample(s), the test results of Cadmium, Lead, Mercury, Cr(VI) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.)



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				審核單位	品保部	驗證者	杜燕會

# SGS

## 測試報告 Test Report

號碼(No.) : CE/2013/42027 日期(Date) : 2013/04/26 頁數(Page) : 2 of 6

宏瑋電子(深圳)有限公司

HONOR ELECTRON (S.Z.) CO., LTD.

中國廣東省深圳市寶安區松崗鎮碧頭村第二工業區

BITOU INDUSTRIAL ZONE BITOU TOWN SONGGANG BAOAN SHENZHEN GUANGDON CHINA



### 測試結果(Test Results)

測試部位(PART NAME)No.1 : 金色金屬腳鍍層 (不含料帶) (PLATING LAYER OF GOLDEN COLORED METAL PIN  
(EXCLUDING THE FRAME) (Au))

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				No.1	
鎘 / Cadmium (Cd)	mg/kg	酸洗脫鍍層, 參考IEC 62321: 2008方法, 以感應耦合電漿原子發射光譜儀檢測. / IEC 62321: 2008 application of modified digestion by surface etching and performed by ICP-AES.	2	n.d.	100
鉛 / Lead (Pb)	mg/kg	酸洗脫鍍層, 參考IEC 62321: 2008方法, 以感應耦合電漿原子發射光譜儀檢測. / IEC 62321: 2008 application of modified digestion by surface etching and performed by ICP-AES.	2	n.d.	1000
汞 / Mercury (Hg)	mg/kg	酸洗脫鍍層, 參考IEC 62321: 2008方法, 以感應耦合電漿原子發射光譜儀檢測. / IEC 62321: 2008 application of modified digestion by surface etching and performed by ICP-AES.	2	n.d.	1000
六價鉻 / Hexavalent Chromium Cr(VI)	**	參考IEC 62321: 2008方法, 以沸水萃取法檢測. / With reference to IEC 62321: 2008 and performed by Boiling water extraction Method.#	#	Negative	#

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# 測試報告

## Test Report

號碼(No.) : CE/2013/42027 日期(Date) : 2013/04/26 頁數(Page) : 3 of 6

宏瑋電子(深圳)有限公司



HONOR ELECTRON (S.Z.) CO., LTD.

中國廣東省深圳市寶安區松崗鎮碧頭村第二工業區

BITOU INDUSTRIAL ZONE BITOU TOWN SONGGANG BAOAN SHENZHEN GUANGDON CHINA

測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				No. 1	
全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	μg/m <sup>2</sup>	參考US EPA 3550C: 2007方法, 以液相層析/質譜儀檢測。 / With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	1	n.d.	-
全氟辛酸 (鉍) / PFOA (CAS No.: 335-67-1)	μg/m <sup>2</sup>	參考US EPA 3550C: 2007方法, 以液相層析/質譜儀檢測。 / With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	1	n.d.	-

### 備註(Note) :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected (未檢出)
3. MDL = Method Detection Limit (方法偵測極限值)
4. "-" = Not Regulated (無規格值)
5. \*\* = Qualitative analysis (No Unit) 定性分析(無單位)
6. # = a. Positive means the presence of CrVI on the tested areas  
(Positive表示測試區域偵測到六價鉻)

b. Negative means the absence of CrVI on the tested areas

(Negative表示測試區域未偵測到六價鉻)

The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm<sup>2</sup> tested areas. / 該溶液濃度 $\geq$ 0.02 mg/kg with 50 cm<sup>2</sup> (tested areas)

### PFOS參考資訊(Reference Information) : 持久性有機污染物 POPs - (EU) 757/2010

PFOS濃度在物質或製備中不得超過0.001%(10ppm), 在半成品、成品或零部件中不得超過0.1%(1000ppm), 在紡織品或塗層材料中不得超過1μg/m<sup>2</sup>。

(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above 1μg/m<sup>2</sup>.)

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				審核單號	品質部	驗證者	杜燕會



# 測試報告 Test Report

號碼(No.) : CE/2013/42027 日期(Date) : 2013/04/26 頁數(Page) : 4 of 6

宏瑋電子(深圳)有限公司

HONOR ELECTRON (S.Z.) CO., LTD.

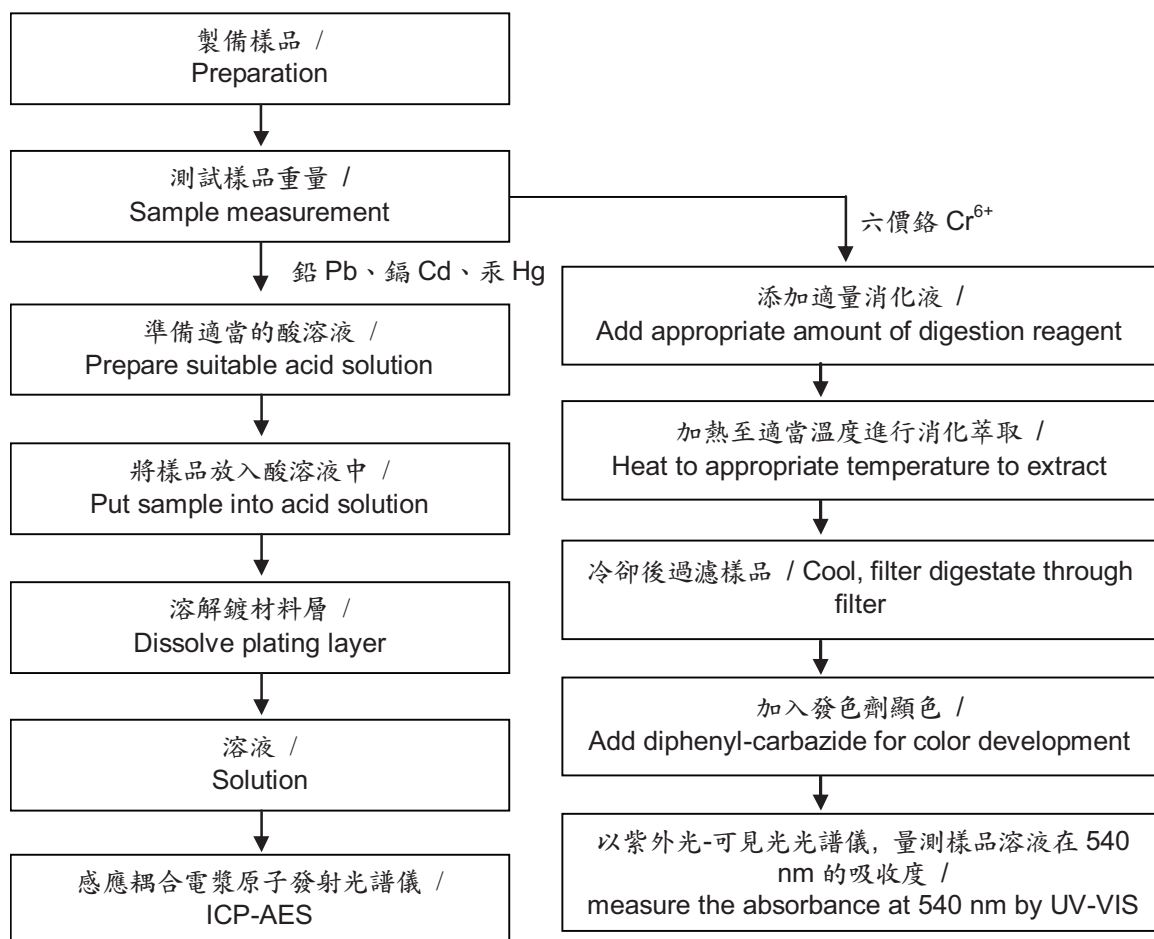
中國廣東省深圳市寶安區松崗鎮碧頭村第二工業區

BITOU INDUSTRIAL ZONE BITOU TOWN SONGGANG BAOAN SHENZHEN GUANGDON CHINA



- 1) 根據以下的流程圖之條件，樣品之外部鍍層已完全溶解。(六價鉻測試方法除外) / The plating layer of samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)
- 2) 測試人員：楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang

## 鍍層重金屬測試流程圖 / Flow Chart of Stripping method for metal analysis



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				審核單位	品保部	驗證者	杜燕會



# 測試報告 Test Report

號碼(No.) : CE/2013/42027 日期(Date) : 2013/04/26 頁數(Page) : 5 of 6

宏瑋電子(深圳)有限公司

HONOR ELECTRON (S.Z.) CO., LTD.

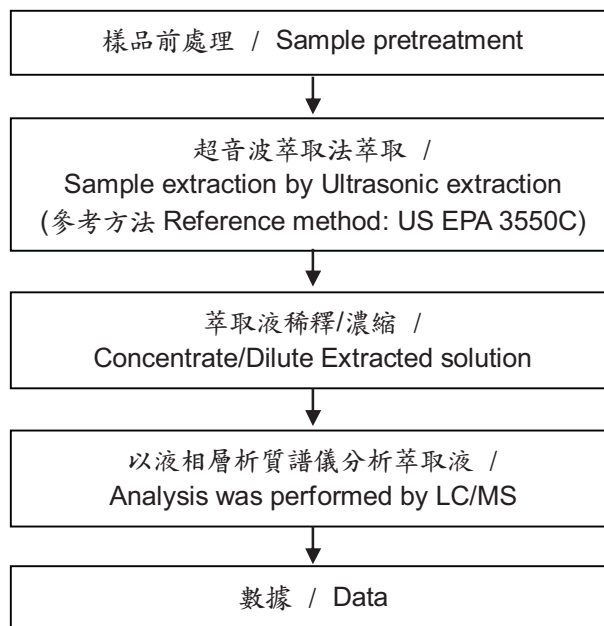
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BITOU INDUSTRIAL ZONE BITOU TOWN SONGGANG BAOAN SHENZHEN GUANGDON CHINA



## 全氟辛酸(銨)/全氟辛烷磺酸分析流程圖 / PFOA/PFOS analytical flow chart

- 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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				審核單號	品保部	驗證者	杜燕會

# SGS

## 測試報告

## Test Report

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宏瑋電子(深圳)有限公司



HONOR ELECTRON (S.Z.) CO., LTD.

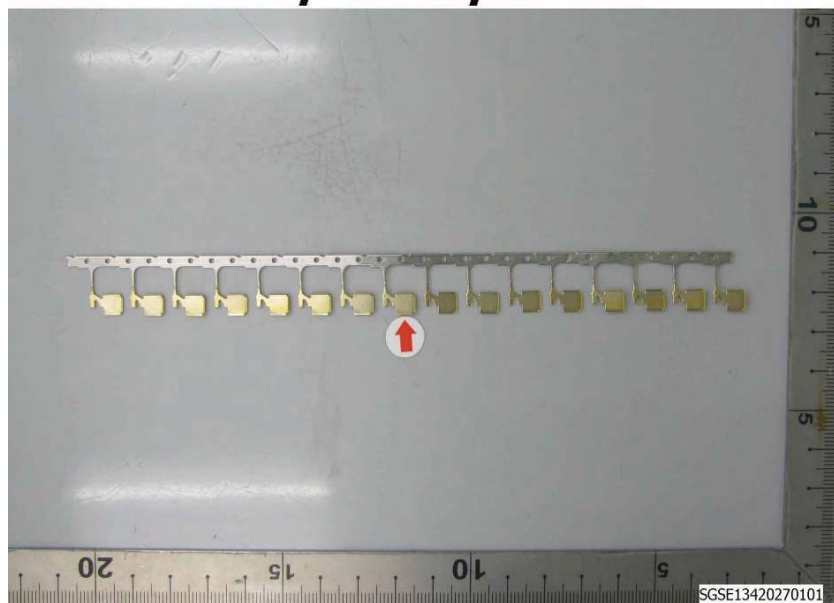
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BITOU INDUSTRIAL ZONE BITOU TOWN SONGGANG BAOAN SHENZHEN GUANGDON CHINA

\* 照片中如有箭頭標示，則表示為實際檢測之樣品/部位。\*

(The tested sample / part is marked by an arrow if it's shown on the photo.)

### CE/2013/42027



\*\* 報告結尾 (End of Report) \*\*

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# 检测报告

## Test Report

报告编号: MASZE00011699  
Report No.: MASZE00011699

第 1 页 共 2 页  
Page 1 of 2

申请单位 : 东莞市长安皓冠塑胶五金厂  
Applicant : HAW KUAN ENTERPRISE CO., LTD.  
地 址 : 东莞市长安镇乌沙陈屋第六工业区  
Address : NO.6 INDUSTRIAL DISTRICT, WU SHA CHEN WU, CHANGAN TOWN DONG GUAN CITY GUANG DONG PROVINCE, CHINA

以下样品信息由客户提供并确认:

The following sample information were submitted and identified by client as:

样品名称 Sample Name : C5191  
样品型号 Part No. : 磷青铜  
样品接收日期 : 2012.12.03  
Sample Received Date : Dec. 3, 2012  
样品检测日期 : 2012.12.03-2012.12.07  
Testing Period : Dec. 3, 2012 to Dec. 7, 2012

检测要求 : 根据客户要求, 测定所提交样品中锑(Sb)的含量。  
Test Requested : As specified by client, to determine the antimony (Sb) composition content in the submitted sample.  
检测仪器 Test Apparatus : ICP-OES  
测试标准 Test standard : 参考 Refer to GB/T 5121.27-2008  
检测结果 Test Result(s) : 请参见下页 Please refer to the following page(s)

主 检:  
Tested by

签 发:  
Approved by



技术经理  
Technical Manager

审 核:  
Inspected by

签发日期: 2012.12.07  
Date Dec. 7, 2012

NO. 14537012

Centre Testing International (Shenzhen) Co., Ltd.

Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China



# 检测报告 Test Report

报告编号: MASZE00011699  
Report No.: MASZE00011699

第 2 页 共 2 页  
Page 2 of 2

## 检测结果 Test Result(s):

测试样品描述 Tested sample description: 铜色金属 Copper-colored metal

测试项目 Tested Item(s)	含量 Content(%)
锑 Antimony(Sb)	<0.0001

## 样品照片 Sample Photo(s)



\*\*\* 报告结束 \*\*\*

\*\*\*End of report \*\*\*

声明：检测报告无批准人签字及“报告专用章”无效，本报告检测结果仅对受测样品负责。未经 CTI 书面同意，不得部分复制本报告。

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.



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				審核單號	品保部 有證書 杜燕會



# 測試報告 Test Report

號碼(No.) : CE/2013/42025 日期(Date) : 2013/04/26 頁數(Page) : 1 of 6

宏瑋電子(深圳)有限公司

HONOR ELECTRON (S.Z.) CO., LTD.

中國廣東省深圳市寶安區松崗鎮碧頭村第二工業區

BITOU INDUSTRIAL ZONE BITOU TOWN SONGGANG BAOAN SHENZHEN GUANGDONG CHINA



以下測試樣品係由申請廠商所提供及確認 (The following sample(s) was/were submitted and identified by/on behalf of the applicant as):

樣品名稱(Sample Description) : Ni (鍍鎳層)  
收件日期(Sample Receiving Date) : 2013/04/10  
測試期間(Testing Period) : 2013/04/10 TO 2013/04/26

測試需求(Test Requested) : (1) 依據客戶要求, 參考RoHS 2011/65/EU Annex II 指令進行鎘, 鉛, 汞, 六價鉻測試. (As specified by client, with reference to RoHS Directive 2011/65/EU Annex II to determine Cadmium, Lead, Mercury, Cr(VI) contents in the submitted sample.)  
(2) 依據客戶指定, 進行全氟辛酸 (鉍)、全氟辛烷磺酸測試. (As specified by client, to test PFOA, PFOS contents in the submitted sample.)

測試方法(Test Method) : 請見下一頁 (Please refer to next pages).

測試結果(Test Results) : 請見下一頁 (Please refer to next pages).

結論(Conclusion) : 根據客戶所選擇的部位測試, 其鎘, 鉛, 汞, 六價鉻的測試結果符合RoHS指令 2002/95/EC的更新指令2011/65/EU之要求 (Based on the performed tests on selected part of submitted sample(s), the test results of Cadmium, Lead, Mercury, Cr(VI) comply with the limits as set by RoHS Directive 2011/65/EU Annex II; recasting 2002/95/EC.)



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BITOU INDUSTRIAL ZONE BITOU TOWN SONGGANG BAOAN SHENZHEN GUANGDON CHINA

## Member of the SGS Group

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				審核單號	品保部	有証者	杜燕會

# SGS

## 測試報告 Test Report

號碼(No.) : CE/2013/42025 日期(Date) : 2013/04/26 頁數(Page) : 3 of 6

宏瑋電子(深圳)有限公司

HONOR ELECTRON (S.Z.) CO., LTD.

中國廣東省深圳市寶安區松崗鎮碧頭村第二工業區

BITOU INDUSTRIAL ZONE BITOU TOWN SONGGANG BAOAN SHENZHEN GUANGDON CHINA



測試項目 (Test Items)	單位 (Unit)	測試方法 (Method)	方法偵測 極限值 (MDL)	結果 (Result)	法規 限值 (Limit)
				No. 1	
全氟辛烷磺酸 / Perfluorooctane sulfonates (PFOS-Acid, Metal Salt, Amide)	μg/m <sup>2</sup>	參考US EPA 3550C: 2007方法, 以液相層析/質譜儀檢測。 / With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	1	n.d.	-
全氟辛酸 (鉍) / PFOA (CAS No.: 335-67-1)	μg/m <sup>2</sup>	參考US EPA 3550C: 2007方法, 以液相層析/質譜儀檢測。 / With reference to US EPA 3550C: 2007. Analysis was performed by LC/MS.	1	n.d.	-

### 備註(Note) :

1. mg/kg = ppm ; 0.1wt% = 1000ppm
2. n.d. = Not Detected (未檢出)
3. MDL = Method Detection Limit (方法偵測極限值)
4. "-" = Not Regulated (無規格值)
5. \*\* = Qualitative analysis (No Unit) 定性分析(無單位)
6. # = a. Positive means the presence of CrVI on the tested areas

(Positive表示測試區域偵測到六價鉻)

b. Negative means the absence of CrVI on the tested areas

(Negative表示測試區域未偵測到六價鉻)

The detected concentration in boiling-water-extraction solution is equal or greater than 0.02 mg/kg with 50 cm<sup>2</sup> tested areas. / 該溶液濃度 $\geq$ 0.02 mg/kg with 50 cm<sup>2</sup> (tested areas)

### PFOS參考資訊(Reference Information) : 持久性有機污染物 POPs - (EU) 757/2010

PFOS濃度在物質或製備中不得超過0.001%(10ppm), 在半成品、成品或零部件中不得超過0.1%(1000ppm), 在紡織品或塗層材料中不得超過1μg/m<sup>2</sup>。

(Outlawing PFOS as substances or preparations in concentrations above 0.001% (10ppm), in semi-finished products or articles or parts at a level above 0.1%(1000ppm), in textiles or other coated materials above 1μg/m<sup>2</sup>.)

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				審核單位	品質部	驗證者	杜燕會



# 測試報告 Test Report

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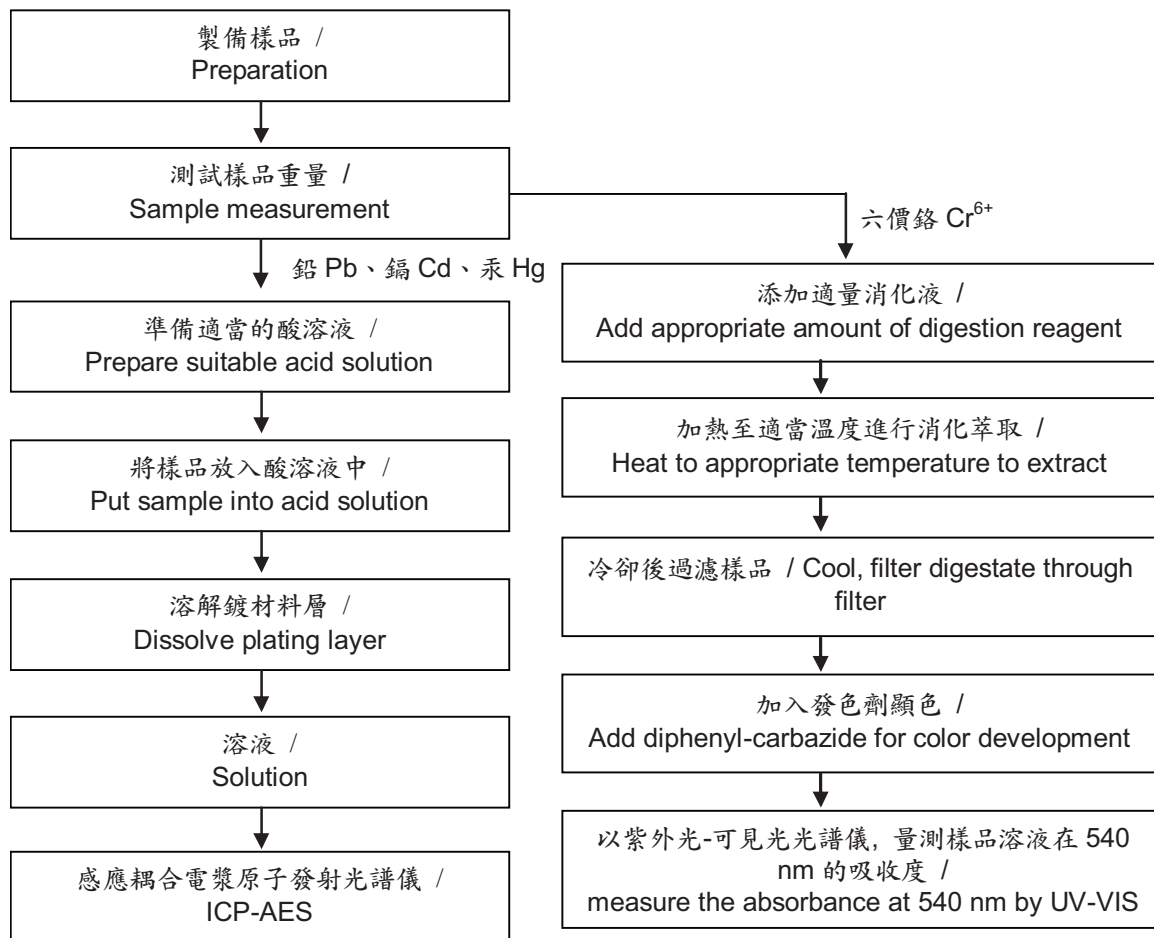
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BITOU INDUSTRIAL ZONE BITOU TOWN SONGGANG BAOAN SHENZHEN GUANGDON CHINA



- 1) 根據以下的流程圖之條件，樣品之外部鍍層已完全溶解。(六價鉻測試方法除外) / The plating layer of samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> test method excluded)
- 2) 測試人員：楊登偉 / Name of the person who made measurement: Climbgreat Yang
- 3) 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang

## 鍍層重金屬測試流程圖 / Flow Chart of Stripping method for metal analysis



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				審核單位	品保部	驗證者	杜燕會



# 測試報告 Test Report

號碼(No.) : CE/2013/42025 日期(Date) : 2013/04/26 頁數(Page) : 5 of 6

宏瑋電子(深圳)有限公司

HONOR ELECTRON (S.Z.) CO., LTD.

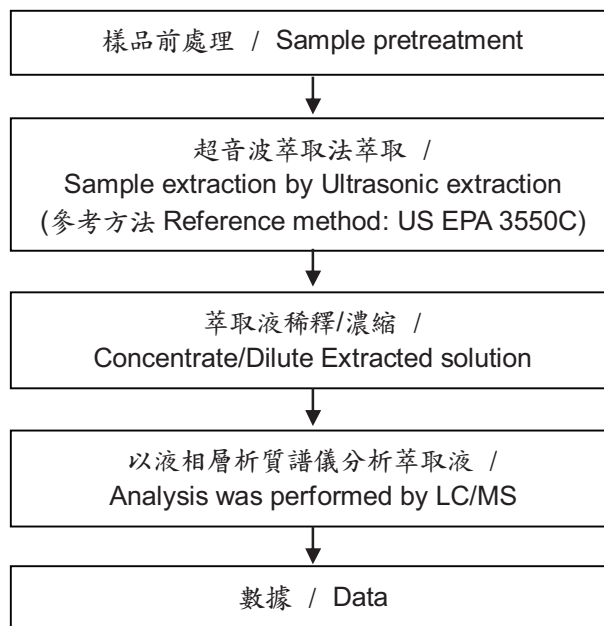
中國廣東省深圳市寶安區松崗鎮碧頭村第二工業區

BITOU INDUSTRIAL ZONE BITOU TOWN SONGGANG BAOAN SHENZHEN GUANGDONG CHINA



## 全氟辛酸(銨)/全氟辛烷磺酸分析流程圖 / PFOA/PFOS analytical flow chart

- 測試人員：翁賜彬 / Name of the person who made measurement: Roman Wong
- 測試負責人：張啓興 / Name of the person in charge of measurement: Troy Chang



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				審核單號	品保部	驗證者	杜燕會

# SGS

## 測試報告 Test Report

號碼(No.) : CE/2013/42025 日期(Date) : 2013/04/26 頁數(Page) : 6 of 6

宏瑋電子(深圳)有限公司

HONOR ELECTRON (S.Z.) CO., LTD.

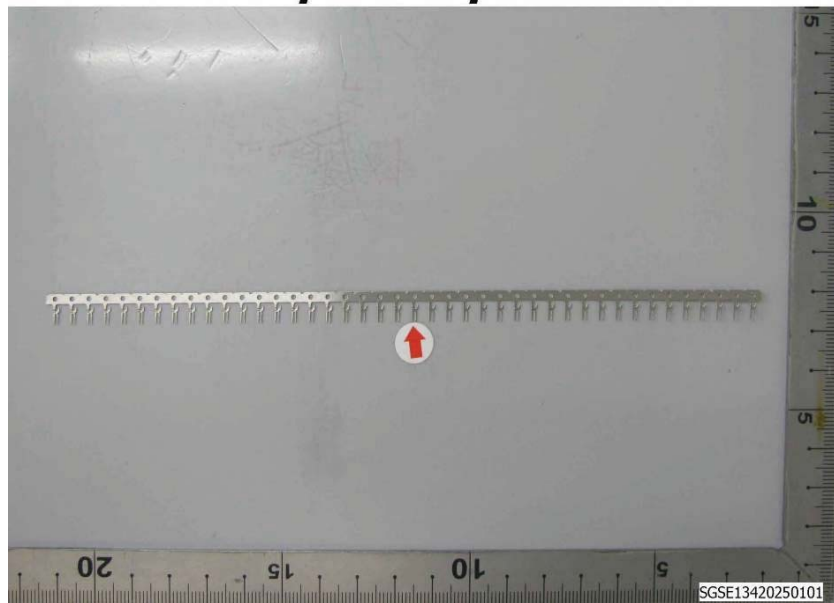
中國廣東省深圳市寶安區松崗鎮碧頭村第二工業區

BITOU INDUSTRIAL ZONE BITOU TOWN SONGGANG BAOAN SHENZHEN GUANGDONG CHINA



\* 照片中如有箭頭標示，則表示為實際檢測之樣品/部位。\*  
(The tested sample / part is marked by an arrow if it's shown on the photo.)

### CE/2013/42025



\*\* 報告結尾 (End of Report) \*\*

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# Test Report

**Report No.** RLSZE001297110001

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**Applicant** LEPCO ENGINEERING PLASTICS TECHNOLOGY

**Address** BAIMA ADMINISTRATIVE ZONE ,GOLDEN INDUSTRIAL PARK GOLDEN  
2ND ROAD NCHCHENG DISTRICT , DONGGUAN ,GUANGDONG ,CHINA

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

**Sample Name** PA FR  
**Part No.** FR201V0/FR202V0/FR101V0/FR102V0  
**Material** PA  
**Manufacturer** Lepco  
**Sample Received Date** May. 26, 2012  
**Testing Period** May. 26, 2012 to May. 30, 2012

**Test Requested** As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs), Fluorine(F), Chlorine(Cl), Bromine(Br), Iodine(I) in the submitted sample(s).

**Test Method** Please refer to the following page(s).

**Test Result(s)** Please refer to the following page(s).

Tested by

*Rick Li*

Reviewed by

*Vargan He*

Approved by

*Danny Liu*

Date

May. 30, 2012

Danny Liu

Technical Manager

No. 38471648

Centre Testing International (Shenzhen) Co., Ltd. Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China



# Test Report

Report No. RLSZE001297110001

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## Test Method

Test Item(s)	Test Method	Measured Equipment(s)	MDL
Lead(Pb)	IEC 62321:2008 Ed.1 Sec.8	ICP-OES	2 mg/kg
Cadmium(Cd)	IEC 62321:2008 Ed.1 Sec.8	ICP-OES	2 mg/kg
Mercury(Hg)	IEC 62321:2008 Ed.1 Sec.7	ICP-OES	2 mg/kg
Hexavalent Chromium(Cr(VI))	IEC 62321:2008 Ed.1 Annex C	UV-Vis	2 mg/kg
Polybrominated Biphenyls(PBBs)	IEC 62321:2008 Ed.1 Annex A	GC-MS	5 mg/kg
Polybrominated Diphenyl Ethers(PBDEs)	IEC 62321:2008 Ed.1 Annex A	GC-MS	5 mg/kg
Fluorine(F)	Refer to BS EN 14582:2007	IC	10 mg/kg
Chlorine(Cl)	Refer to BS EN 14582:2007	IC	10 mg/kg
Bromine(Br)	Refer to BS EN 14582:2007	IC	10 mg/kg
Iodine(I)	Refer to BS EN 14582:2007	IC	10 mg/kg

## Test Result(s)

Tested Item(s)	Content
Lead(Pb)	N.D.
Cadmium (Cd)	N.D.
Mercury(Hg)	N.D.
Hexavalent Chromium(Cr(VI))	N.D.

Tested Item(s)	Content
<b>Polybrominated Biphenyls(PBBs)</b>	
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.

# Test Report

Report No. RLSZE001297110001

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Tested Item(s)	Content
<b>Polybrominated Diphenyl Ethers(PBDEs)</b>	
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.
Tested Item(s)	Content
<b>Halogen(s)</b>	
Fluorine (F)	N.D.
Chlorine (Cl)	N.D.
Bromine (Br)	N.D.
Iodine (I)	N.D.

**Tested Sample/Part Description** White plastic grains

**Note:** The sample had been dissolved totally tested for Lead, Cadmium, Mercury.

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL )

-mg/kg = ppm = parts per million

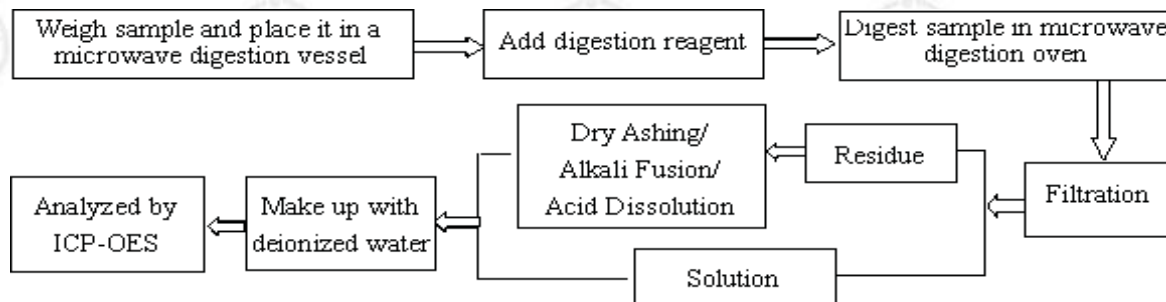
# Test Report

Report No. RLSZE001297110001

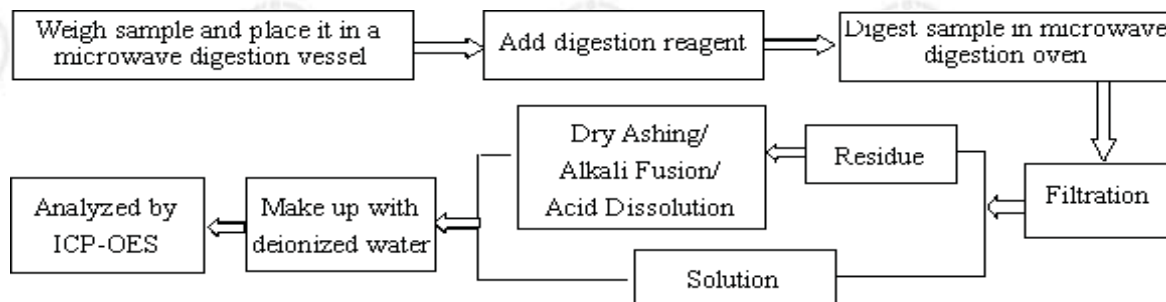
Page 4 of 6

## Test Process

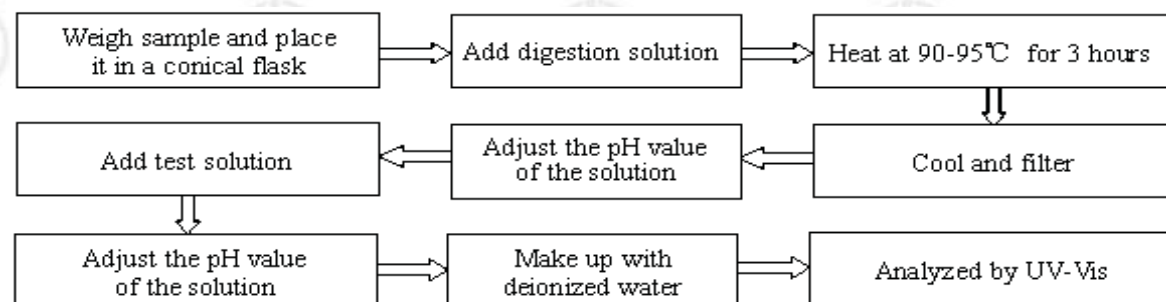
### 1. Lead(Pb), Cadmium(Cd)



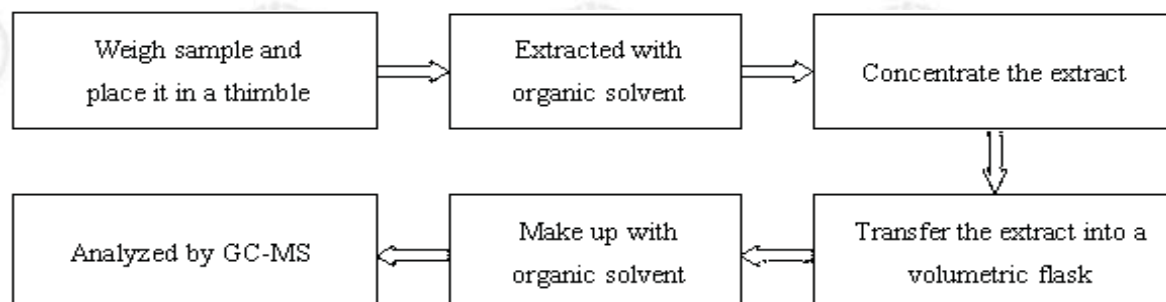
### 2. Mercury(Hg)



### 3. Hexavalent Chromium(Cr(VI))



### 4. Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs)

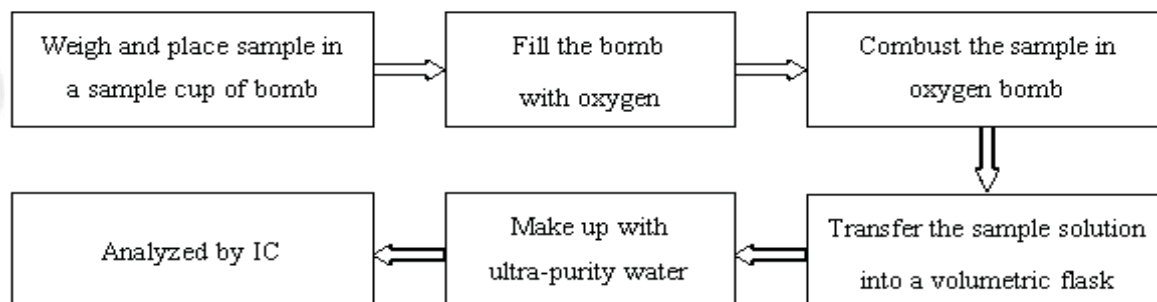


# Test Report

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## 5. Fluorine(F), Chlorine(Cl), Bromine(Br), Iodine(I)



# Test Report

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## Photo(s) of the sample(s)



\*\*\* End of report \*\*\*

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